

Computer Assembly and Maintenance Curriculum Reform

Xiaoming Bai

Xijing University

Xijing University, No.1 Xijing Road, Chang'an District, Xi'an City, Shaanxi Province, China

baixiaoming@xijing.edu.cn

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Abstract: According to the current teaching situation of computer assembly and maintenance, combined with the author's years of teaching practice experience, this paper puts forward the application of task-driven and hierarchical teaching methods to classroom teaching, expounds the implementation process in specific practice, and illustrates the teaching effect.

1. Introduction

The computer is one of the most advanced scientific and technological inventions in the 20th century. Its application field has expanded from the initial military research application to various fields of society. It has formed a huge scale of computer industry, which has driven technological progress on a global scale and caused profound social changes. Computers have spread to schools, enterprises and public institutions, and become an indispensable tool in the information society.

"Computer assembly and maintenance" is a compulsory course of information class I and information class ii majors in higher vocational schools. It is a core course that ADAPTS to the development of The Times and is close to the actual needs of enterprises and institutions. It is close to the market demand, the characteristics of strong practicality, the ability to apply high [1], students are required to have careful and meticulous work attitude and high operation level and ability, but as a result of the teaching material update relative lag, the limited class time, content is more, the students often can only learn the content of the relatively shallow, unable to delve into more essence and advanced knowledge, curriculum effect is limited. On the other hand, due to the rapid development of science and technology, the development of computer software and hardware is also very fast, but the cost of replacement is large, and the school funds are limited, unable to timely replace with the progress of technology; In addition, students are not familiar with the operation and their operation level is limited, which will often lead to the damage of parts, which will seriously affect the subsequent teaching and learning arrangements. Therefore, it is of practical significance to explore the teaching reform of computer assembly and maintenance under the new situation.

2. Current Problems in Computer Assembly and Maintenance Course Teaching

2.1 Problems in Theory Teaching

Due to the rapid replacement of computer hardware equipment, and the relatively old textbooks used in teaching, there is too little new technology and new knowledge taught in the process of theoretical teaching, and many backward and obsolete contents are filled with the classroom, which seriously weakens the importance of the course.

2.2 Problems in Practical Teaching

Training rooms of hardware is often out of desktop computers, configuration, model, and the training course of class hour and equipment still exist the problem of insufficient number. Currently used laptops, printers, and other mobile devices in training rooms in basic or very few in number, a lot of practical project cannot be carried out, to make the students lose interest in learning and

motivation.

2.3 Problems with the Assessment Method

Affected by the shortage of hardware equipment and other factors, the course assessment method is mainly theoretical papers, which not only cannot fully test students' professional technical ability, but also leads to students' neglect of practical teaching.

3. The Design and Implementation of Task-driven and Hierarchical Teaching Methods

The practical training course of computer assembly and maintenance is a practical teaching course, which should start from the shallow to the deep, require sufficient theoretical knowledge, highlight the accumulation of practical skills and maintenance experience, and cultivate professional quality.

3.1 The Breakdown of Teaching Tasks

The teaching of computer assembly and maintenance course has high requirements on students' practical ability, which is difficult for students who have never actually assembled computers. The course is based on the user's demand to purchase a multimedia computer. The seller selects and purchases the computer hardware according to the user's demand, completes the assembly of the computer hardware, installs and updates the computer operating system and installs the commonly used software. In the process of using the computer, with the seller as the user to carry out daily maintenance and user computer failure door-to-door processing as the carrier, the hardware purchase, system installation, system maintenance, troubleshooting and other teaching content organic integration. Combined with the computer maintenance workers skills competition, according to the professional standards of computer maintenance workers, installation and debugging, according to the task-driven requirements of the course is divided into 4 modules a total of 14 teaching tasks.

According to work tasks, teachers teach from different aspects and at different levels, so that students can understand the 14 tasks by time, segment, grasp the key points, and the computer hardware system and software system organically combined, so that students see, learn unity. In addition, students have different tasks every day, which can make students keep learning fresh and improve their interest in learning. With the use and popularity of notebook computers, timely introduction of notebook computer knowledge in teaching, can keep the freshness of the course. At the same time, according to the students' foundation and the degree of mastery, the teacher carries on the corresponding examination to each work task, mainly by the study master, the appropriate consideration is given to the improvement.

3.2 Design of Classroom Three-dimensional Teaching Mode Based on Problem Discovery

Combined with more than 10 years of teaching practice, in order to cooperate with the integrated teaching method, according to the requirements of work tasks, the author adopts the classroom three-dimensional teaching model

This classroom teaching mode adopts the compound classroom form with the continuous intervention of theory courses to enable students to accept the theoretical learning in the hands-on process, improve the hands-on ability in the theoretical research, and form a teaching form with theory as the framework and practice teaching as the main form. The project teaching, task driven, classroom demonstration, observation, situational teaching and group discussion teaching methods as the main means, such as the ability of accumulation, progressive according to task and the accumulation of experience, so that the students from theory to practice, from the classroom knowledge to the relevant professional knowledge, from a personal professional orientation to the course of professional application they have a clear understanding and grasp.

3.3 The Cultivation and Exercise of Innovative Thinking

In order to improve students' ability to find problems and cultivate their innovative thinking,

teachers train students to find problems and solve problems through lateral thinking and vertical thinking in teaching. Such as the computer black screen phenomenon, may be produced by a variety of accessories and independent of each other.

3.4 Integrated Teaching of Theory and Practice

Theory and practice integrated teaching is a teaching method that combines professional theory courses with practical training courses. This teaching method transforms the classroom learning process from the original teacher to student, combines theory and practice, highlights skill training, and realizes the integration of "teaching, learning and doing". Through this teaching method, students' learning initiative is cultivated and their mastery of theoretical knowledge is strengthened. The main difficulty of this method is that the instructor is required to have a strong classroom control ability.

4. The Combination of Course and Network Technology

4.1 Traditional Classroom

Traditional classroom is the main, network resources as a supplement after class. This is the most common case, and there is a lot of literature. The campus network of many schools contains the network resources of courses, such as course information, learning guidance, teaching team information, teaching auxiliary resources, etc. Some can also achieve teacher-student interaction based on the network platform, including online, submission and correction of homework, online examination and so on.

As most of the courses in the school are equipped with relevant network resources, the quality of good and bad varies, and the visits are mainly focused on the teachers and students of the school, the utilization rate of resources is relatively low.

4.2 Online Classroom

In this case, the traditional course teaching process is transferred to the network, that is, distance teaching. Online classroom teaching generally includes video teaching, class notes, learning certification, etc. Some classes can answer questions, correct homework and other interactive links. The emergence of such courses effectively satisfies the demand for high-quality higher education for everyone who wants to improve themselves.

MOOC is a typical example. Massive Open Online Course (MOOC) is a new Online Course development mode. For example, the online education platform MOOC of Chinese university jointly launched by higher education association, the online platform of high-quality Chinese MOOC initiated by Tsinghua university, cloud classroom, etc. At present, the number of online MOOC in China has reached 5,000, and the number of students has exceeded 70 million. The total number of MOOC, the number of participating schools and the number of students are leading the world, and China has become a big country of MOOC in the world.

Among them, Chinese university MOOC have launched computer assembly and maintenance courses offered by five universities.

4.3 The Rain Classroom

The rain classroom combines the traditional classroom teaching with the Internet technology, and establishes the communication bridge between the preview after class and the classroom teaching. With the use of rain class, teachers can push the preview courseware with MOOC videos, exercises and voice to students' mobile phones. In class, the real-time answers and the interaction between bullet screens provide a perfect solution for the interaction between teachers and students in traditional classroom teaching. The rain classroom covers every teaching link before, during and after class. Because it provides relatively complete three-dimensional data support for teachers and students, it is welcomed by many teachers.

So far, there is no literature on the application of rain classroom to computer assembly and maintenance.

As the knowledge of computer assembly and maintenance is updated quickly, the maintenance cost of the above model is high. In order to save unnecessary course construction cost, how to effectively acquire, process and utilize network information resources is also worth thinking about

5. SPOC Teaching Mode

The teaching process of SPOC teaching mode is mainly divided into online and offline links. The online link lays a good foundation for the implementation of the offline link, and the offline link provides personalized guidance and expansion according to the effect of the online link.

5.1 Online Teaching

SPOC online teaching is a process of acquiring basic knowledge and constructing knowledge system. Online teaching is supported by existing MOOC platforms, which share high-quality course resources, and offer customized SPOC courses on SPOC platform according to the actual teaching, so as to modify or supplement the existing teaching resources. The learning object through the independent preview, according to the requirements of the task list to watch the relevant teaching video; Consolidate the learning content through online homework, and check the learning effect through online test; Interact through online discussions. Teachers can in SPOC platform corrects students' papers, check the test results, check the hot and difficult discussion on the BBS, based on the feedback information collection and visualization of data analysis, timely and clear understanding of the learning object for the master degree of knowledge, not only can provide the corresponding answer and supplementary learning resources, also can adjust offline teaching design and schedule, to meet the needs of learning objects autonomous learning.

5.2 Offline Teaching

Offline teaching is a process of practice and exploration by applying relevant knowledge to specific tasks. Although completed in the traditional classroom, in terms of form and content, it pays more attention to strengthening the knowledge in the online stage through task-centered teaching process, and guides the learning object to expand the knowledge in depth and breadth, and cultivates the consciousness and ability of innovation through in-depth learning discussion and answering questions.

The teacher combined the real case and the development of computer maintenance technology to design the task-based project, put forward the problem, and organized the teaching process with the task as the core. Task as the "hard disk failure diagnosis and elimination", for example, to guide the learning object clear task, in small groups as a unit for analysis, through the "observation" and "replace" diagnosis, find out the causes of hard disk failure, through collaborative learning put forward the feasibility of the solution, the final practice solving problems, in to show results at the same time, the communication in the process of operating experience, sum up experience. The teacher's role is to guide and evaluate, do not need to repeat the teaching content for many times, can turn the attention to guide the students to discuss, explain the key points and difficult problems and other aspects, reflect the main role of the learning object, promote in-depth learning and research.

Summary

The traditional computer assembly and maintenance teaching is based on the form of the teacher and the textbook and the students' knowledge explanation. This is not conducive to the consolidation of students' professional knowledge. Therefore, the author advocates that teachers can take information, interactive, independent teaching means to help students consolidate professional knowledge and foundation. For example, the disassembly and purchase of computers and the recognition of computer hardware are the key contents of computer hardware assembly module. When teachers guide students to learn this part of computer knowledge, it is difficult to understand, learn and control it because the knowledge itself is abstract, operational and demonstrative.

Teachers might as well change the teaching form, ask students to learn and collect this part of knowledge on the Internet with the help of information means, in the students have a certain understanding of the content, and teachers can conduct classroom demonstration teaching. In the process, the teacher should be about computer peripheral equipment interface connection and understanding and the understanding of the computer hardware and identification, as a teaching specific content and tasks, and interact with the student to carry on the language of presentation, in the process of demonstration for the students to explain or helping students to understand this part of knowledge in question-and-answer form. This can make students form sense, and strengthen the effective interaction between teachers and students, improve the teaching effect.

In a word, the course "computer assembly and maintenance" is a practical course that pays attention to practical ability, is highly practical, and is close to the real market. It requires us to keep up with the trend of The Times, closely follow the development pace of science and technology, constantly update the teaching concept, and constantly try and explore. We should not only pay attention to new technologies and products in time, supplement and update the contents of teaching materials, but also timely recharge ourselves, timely summarize management concepts, actively participate in market research, constantly summarize experience and lessons, and actively explore new teaching models and methods. Through continuous improvement and exploration, we will comprehensively improve students' practical ability and change their way of thinking, so that students can learn something and apply what they have learned after entering the actual jobs, so as to cultivate more high-quality and highly skilled talents needed by the society.

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