Teaching Reform of Vocational Computer Basic Courses Based on Specialty Needs

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Abstract. How the vocational computer basic courses better serve the specialty is an important measure to deepen the teaching reform and improve the educational informationization. Combining with the teaching reform of computer basic courses for non-computer majors in our college, this paper explores the teaching reform measures about how the computer basic courses take the needs of professional posts as the target and serve the specialties.

1. Introduction

Computer basic course is a compulsory course for Higher Vocational students, which aims at cultivating the basic computer application ability necessary for talents in the information society and is an indispensable tool for students to go to work or daily life in the future. In the traditional teaching process, the computer basic courses are not linked to the students’ specialty direction, which cannot be accommodated in the corresponding curriculum system and is slightly inadequate for the overall training and expansion of students' abilities and the shaping of their professional qualities, causing students to be confused and lack of the corresponding interest in learning[1]. Therefore, in the arrangement of the teaching contents of computer basic courses, selecting the suitable teaching contents of computer basic courses according to the students’ professional needs is needed; using case teaching related to specialty in specific teaching cases can help students better understand the help of computer basic courses to their specialty, thus arousing their higher interest in learning and improving their learning effect.

2. Investigation of specialty needs

In all specialties of universities, the goal of universities basic computer teaching should be cultivating students’ abilities and application-oriented[2], the purpose of universities basic computer teaching is to enable students to master computer, a modern intelligent tool through the study of this course and lay a solid foundation for the study, research of the following courses in this major and integrating into the society.

According to the computer foundation of the current college students in middle school, the computer basic course teaching of non-computer major in our school is closely related to the future jobs requirements and combines with the students’ specialty, first, all the students in the college are divided into two disciplines: liberal arts and science, liberal arts includes accounting, business and humanities and science includes electricity, machinery, construction and fashion majors, computer basic courses with different modules are offered according to their majors, and their teaching objectives vary according to different majors and the different employment positions of students, for
example, the office course of accounting majors positions its teaching objectives in Excel functions in order to meet the computer needs of students going to accounting posts in the future, the office course of humanities majors positions its teaching objectives in word administrative office application in order to meet the needs of students’ future administrative office work, different majors choose different learning modules and the same knowledge module will choose different teaching cases according to different majors, so as to different professional needs can be truly achieved by different key teaching objectives. The requirements module of all specialties in the college is shown in Figure 1.

![Figure 1 Schematic diagram of demand for specialties modules](image)

### 3. Course scheme

For specialties needs, the specialties modules are set up based on the principle of “practicability" . The specialties module selects the cases related to specialties work application as the carrier for teaching. Public computer teaching modules and teaching needs customized for the college's non-computer specialty requirements are shown in Table 1.

| Module name                                      | Specialty                                |
|--------------------------------------------------|------------------------------------------|
| Professional thesis arrangement and professional report | All specialities                          |
| Professional data processing                     | All specialities (Except for architectural design decoration) |
| Information Technology Systems (Hardware and software) | Numerical control, automation, all specialties in construction engineering department |
| Network Basic application(ABC)                   | Media                                    |
Photoshop image processing (ABC) | Valve, all specialties in construction engineering department, secretary, Business English
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Coreldraw graphic design(ABC) | Mechanism, mould, valve, numerical control
Taobao & online store management | Furniture, clothing, footwear, electrical and mechanical, automotive electronics, automation, business English
Adobe InDesign Application Foundation | Architectural design and architectural decoration
Production of Visio flow charts | Mechanism, electronic information and enterprise management
Five strokes input method | Accounting, finance and securities
Flash Basic Animation | Clothing, footwear, product modeling

4. Reform in teaching cases

At present, the teaching contents of computer public basic courses in various majors in our college are gradually closely related to the major, therefore, the professional investigation and analysis were carried out before the implementation of the teaching, the teaching contents suitable for the specialties are selected, and combined different modules in different majors to realize that the public basic courses of computer are linked to all the specialties of the whole school, which better cultivate students' computer skills required by various specialties.

Because of the different specialties of the students, in order to make the basic computer courses serve the specialty more closely, the teaching content plan is designed according to the specialty, and the teaching modules of different specialties are implemented in the form of mutual combination of cases. This paper compares the changes of teaching contents with taking the case of explaining excel's vlookup function in accounting as an example (as shown in Figures 2 and 3): the original case "the design of performance system of talent competition" is interesting, while the new case "making accounting vouchers" is fully combined with knowledge of accounting, comparing the two cases, students of accounting learn more about the computer's help to their professional learning after learning the cases after reformed, thus enhancing their interest in Excel learning and striving to absorb the nutrition they need. Therefore, how to design different cases by combining different specialties as much as possible has become the most important part of the teaching of computer basic courses.
5. Teaching practice

5.1. Teaching task assignment

The source of higher vocational students is becoming more and more complicated, and the basic computer knowledge of freshmen is quite different [3], for our school, students come from all over the country, coastal cities with developed economy and inland areas still in poverty; some have already mastered the basic computer knowledge and basic skills skillfully in high school, while others are rather unfamiliar with computers. So in order to distinguish different levels of the freshmen in our university for different teaching modules arrangement, we take the placement test of computer basic, and then implement higher level module teaching for the students with better foundation.

5.2. Reform in examination way

Computer basic course is an applied discipline, it cannot completely reflect the students’ actual ability to test the students' learning effect by means of examination papers, and the present examination questions are mostly to test students’ mastery of knowledge points, not to test students' ability to solve practical problems, and not divorced from the examination of examination-oriented education, which has seriously affected the cultivation of innovative talents. The traditional examination method makes the students "full of theory, confused in practice", learning for exams cannot arouse the enthusiasm of
students to study, cannot play the creativity of students, this kind of examination method is quite different from quality education. Our school has always pay attention to the practical ability of students, so the examination methods of basic computer courses mainly from the following aspects to implement:

1) Items examination of modules
   After each module of the computer basic course is completed, the teacher of the course module is responsible for arranging the items to be examined on the computer, after the examination, the examination papers are marked and evaluated.

2) Integration into specific skills tests
   Each department or even every major has made the requirement of skill examination for their students in school, and the examination of basic computer course is in the form of module. Incorporating the comprehensive examination of computer basic courses or the examination of some modules into the skill examination requirements of the departments, such as the office courses in the department of finance and accounting, require students to input Chinese characters at a certain speed and regard it as a necessary skill for students.

6. Conclusion
In this century with the rapid development of information technology, the integration of computer technology and many specialties has greatly enriched the teaching methods and contents of various specialized courses[4], and the requirements of various specialties for students’ computer application ability are increasing day by day. Therefore, computer basic education in colleges and universities is particularly important. Only by continuous and thorough reform of the basic computer courses in universities, giving full play to the guiding role of teachers can students learn with tasks and problems, arouse their enthusiasm to learn computer knowledge, arouse their initiative to learn, give full play to their subjective initiative, change teaching key points to the cultivation of application ability and innovation ability of students[5], so as to improve their application ability of computers in an all-round way, lay a solid foundation for the further development of students when they go to work, and cultivate more high-quality computer application talents for the society.

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