Teaching Design Exploration of the Course Based on the "6+2" Basic Principle--Take "Computer Foundation" Course as an Example

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Abstract. Under the background of the new normal of education, the state puts forward new requirements on vigorously developing modern vocational education where new technologies, new techniques and new specifications should be incorporated into the teaching standards and teaching contents in time to strengthen students' hands-on ability. As the key to the reform of vocational education, curriculum design must be combined with the principle of "6+2" to realize the integration of teaching and doing. As a public basic course, "Computer Foundation" always implements the "6+2" principle in teaching, and takes the basic office software operation as the system, which is fully in line with the training objectives of the basic courses of vocational education.

Keywords: "6+2" Basic Principle, Curriculum Design, Computer Foundation

The Ministry of Education of the People's Republic of China issued a notice on January 14, 2019, detailing the reform plan for China's vocational education to cultivate high-quality workers and technical personnel. (hereinafter referred to as "the Plan")[1]. The Plan clearly states that vocational education should adhere to the unity of knowledge and practice, and that new technologies [2], new techniques and new norms should be incorporated into teaching standards and contents in a timely manner to strengthen students' hands-on skills. Therefore, modern vocational education requires educators to improve teaching methods and integrate modern concepts and technologies into teaching.

1. Explanation of the Basic Principle "6+2"
With the development of vocational education, the teaching mode of vocational education has been continuously developed and updated, and certain achievements have been made. Especially in the aspect of student practice, vocational education has changed the traditional teacher-based education to the realization of students' own values. Therefore, many new teaching concepts have been formed in the curriculum reform, one of which is the "6+2" principle. The "6" in the principle refers to: (1) engineering integration and vocational activity orientation; (2) project carrier; (3) curriculum teaching with integrated knowledge, theory and practice; (4) highlighting competence objectives [3]; (5) task training; (6) student subject. The "2" in the principle refers to: ①certain course contents (such as
moral education contents, foreign language contents, etc.) must pay more attention to the "infiltration" of all courses in the whole school, rather than relying on centralized classes; ②"Core competencies" of self-learning, communication skills, problem-solving skills, information processing skills, creative skills, mathematical application skills, foreign language application skills, etc., must be "infused" into all curricula rather than relying only on intensive classes or training [4].

2. Combining the "6+2" Basic Principles With Teaching Design
As the saying goes, "A teacher preaches, teaches, and solves problems." Since ancient times, teachers have been following this guideline, but how to preach, how to teach, and how to solve problems has always been a problem for teachers. The key to this question is "how", that is, what methods we use to preach, teach, and solve problems. Currently, the "6+2" basic principles are a good way to achieve this process, as follows.

2.1 Determining Course Objectives
The competency goal of the course is not from the textbook, but the occupational job requirements. If we use specific and testable language to accurately describe the competence goal of this course, it is "to be able to do xx with xx". For secondary school students, the goal of the course "Computer Foundation" is that students can use the basic computer knowledge, operating system, word processing, spreadsheet and INTERNET technology to do some common tasks in future office work, such as printing company documents, sending and receiving emails, making forms and so on. At the same time, there are still differences in course objectives among majors. Accounting and secretarial majors are more demanding in word processing and spreadsheet than other non-computer majors, because it is closely related to their future work.

2.2 Transforming the Content of the Curriculum
The content of vocational education courses must be oriented to vocational activities and work processes [5]. The examples, practical training and main classroom activities of the course should be based on the vocational competence objectives and use materials from the practical activities of vocational jobs as much as possible, so as to transform the content and sequence of the course. In particular, the typical jobs should be changed from "based on the logical clues of knowledge" to "based on the work process of professional activities". Taking "Computer Basic Course" as an example, when explaining the advanced application of WORD, we can use the enterprise's publicity newspaper as a carrier in teaching; while explaining the advanced application of EXCEL, we can choose enterprise payroll management as a carrier in teaching.

2.3 Formation of Teaching Modules
The subject system courses should deconstruct the course content, combine the work process and reconstruct the teaching modules corresponding to the work process. The focus of reconstructing is to select the content and sequencing [6]. The key to reconstructing is to find the appropriate carrier [7]. Those Carriers can be objects, tools, phenomena, products, etc. Modules are a combination of knowledge and competencies, specific teaching contents and teaching requirements.

For example, the "basic computer course" can be divided into five modules: basic computer knowledge applications, Word applications, Excel applications, PPT applications and network applications. The paper takes Word application module as an example. A company required to use Word to design a brochure of the company. Before completing the work, students must master the Word character format settings, paragraph format settings, the production of tables, the insertion of pictures, the use of tabs, the page border settings, text boxes, columns, art words and other knowledge. From the above case we can find that when setting the course modules, we should pay attention to some matters: (1) modules should be relatively independent. Each module can acquire one or more skills, knowledge or ability; (2) the content of the module is determined according to the actual needs of vocational jobs. Practicality and application are strong; (3) large modules can be divided into small
modules below; (4) small modules must have clear behavioral objectives and specific requirements, and flexible combinations between them.

2.4 Complete the Overall Design
There are various forms of course instructional design, and here we broadly summarize them into three.

2.4.1 Model I: Cross-cutting project + integration
Task I, Competency I, Knowledge I.
   Task II, Competency II, Knowledge II.
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   Project completion, knowledge summary; competency-based assessment, taking into account knowledge assessment.
   This model of teaching is characterized by the necessity of designing a course-wide project that will be broken down into several subtasks. In the course of work, students must complete several subtasks in order to finally complete the larger project. The chapter "Windows XP Basic Operations - File Management" in Enterprise Office Software is used as an example.
   Task 1: Learn the basic operation of files and folders; Competency 1: Learn to do it in "Explorer" and "My Computer"; Knowledge 1: Learn how to operate files and folders.
   Task 2: Learn to operate the Recycle Bin, Clipboard and shortcuts; Competency 2: Master the use of Recycle Bin and Clipboard, as well as the creation of shortcuts; Knowledge 2: Be familiar with file restore notes and shortcut keys.
   Task 3: Learn to search in Explorer and establish online neighbors; Competency 3: Master searching various files in the disk and searching computers online, as well as the establishment of online neighbors; Knowledge 3: The use of file wildcards and the understanding of computer names and IP addresses.
   In the learning process of the three tasks, teachers follow the "6+2" principle, taking the "Windows XP Basic Operation - File Management" as the carrier of the enterprise office software in the big project, and combine the enterprise's mastery of modern office workers Windows system's file management needs, to students to develop tasks. Students master the use of the Recycle Bin, Clipboard and shortcuts, as well as the search for resources and the use of online alternatives through independent inquiry. In the process, students not only develop the ability to identify and solve problems, but also are stimulated to continue solving classroom problems after class.

2.4.2 Model 2: Dual project in parallel
Completion of Task 1.1 (Competency 1.1, Knowledge 1.1) in class and Task 2.1 outside of class
   Completion of task 1.2 (competency 1.2, knowledge 1.2) in class and task 2.2 outside of class
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   Complete Project 1 in class to summarize knowledge; complete Project 2 after class.
   The effect of project 2 is the main focus to assess students' ability, taking into account the knowledge assessment.
   Now take the chapter "Internet Basic Applications - Information Search" as an example.
   In-class task 1.1: choose a web browser to search for information
   (Competency 1.1: learn to use the browser to search for information and save the valuable web pages; Knowledge 1.1: understand the meaning of search engine and FTP server.)
   After-class task 1.2: Use multiple browsers to search for information.
   In-class completion of task 2.1: Uploading files in FTP server( Competency 1.1: Be familiar with logging in to an FTP server in Internet Explorer and performing operations on files and other folders; Knowledge 1.1: Understand what are the similarities and differences between performing operations on files and folders in an FTP server and performing related operations on files and folders in a local machine.) ;.
After the lesson, complete Task 2.2: Download files in the FTP server.

The design features an effective combination of classroom and extracurricular activities, allowing students to practice Project 1 in class and then complete Project 2 independently after class, while Project 1 is in progress, the teacher can add a varying number of case studies and small tasks to broaden their horizons and achieve effective training in both general and individual competencies. The assessment of the course is based on the "test of ability", not only on the "transfer of knowledge".

2.4.3 Mode 3: Multi-project serial

In-class teacher demonstration, student imitation, and completion of project 1
In-class teacher demonstration, student imitation, completion of project 2
In-class teacher demonstration, student imitation, completion of project 3
In-class teacher demonstration, student discussion, completion of project 3
In-class teacher prompts, students complete project 5 independently
In-class teacher only asks and demonstrates results, students complete project 6 independently

The effect of project 6 is the main basis for the ability assessment, taking into account the knowledge assessment.

This course is designed to extend the project from shallow to deep through a circular approach, which facilitates student student learning interest. For example, the model can be used in the lecture "Word Basic Applications - Making a Job Application Resume:

In-class teacher demonstration, student imitation, completion of Project 1: consolidate familiarity with Word text operations, including font size, artistic word insertion, line spacing, etc.

In-class teacher demonstration, student imitation, completion of project 2: based on project 1 to consolidate familiarity with Word table operations, including table drawing, row insertion and deletion, etc.

In-class teacher prompts, student discussion, and completion of Project 3: Based on Projects 1 and 2, complete the production of job application resumes.

In-class teacher prompts, students independently complete Project 4: Personal resume creation.

2.5 Concluding Remarks

Dewey, a famous American philosopher and educator, once said, "Modern industry is becoming increasingly complex because of various scientific inventions, and the worker who desires to be truly successful must have a good foundation of general education on which to develop his specialized skills [8]." This precisely shows the direction of our vocational education. Therefore, we teachers should put students' ability in the classroom teaching [9]. Whether it is a professional course or a basic course or a public course, we should design each course and each lesson based on the market demand and the cultivation of students' ability, taking into account the training objectives of each profession [10].

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