

Higher Vocational Course Design of “WinForm Development Technology”

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ABSTRACT: Based on the task of WinForm programmer, this paper explores the post positioning of the course “WinForm development technology” in higher vocational colleges. According to the specific teaching cases, we put forward the project-driven and case-driven design scheme so as to train students’ job skills to competent for the tasks. We analyse this scheme from the aspects of course orientation, teaching objectives, teaching content, teaching methods, teaching process, evaluation methods and etc.

KEYWORD: Project-driven; WinForm development; Professional ability; Case-driven

1 INTRODUCTION

The curriculum reform of higher vocational education uses the real demand of social development as the starting point and objective. Its mode research, curriculum goal, curriculum structure, content and organization design, curriculum implementation and evaluation must adapt to the social real needs. So, using enterprise competency model as the guide and goal of occupation reform of Higher Vocational Curriculum, students from the vocational college will adapt to the needs of the development of enterprises, and improve the employment competitiveness of [1].

The traditional higher vocational education curriculums as WinForm, C# and etc use the teaching mode similar to undergraduate courses that value theory or grammar and overlook practice. Higher vocational college students’ theory basis and the abilities of summarizing, analyzing, solving problem, active learning, communication and coordination capacity are worse than undergraduate students. We carry out various practice teaching mode instead of the mode which completely dominated by the course materials and classroom teaching. The reform modes focus on the students in doing, and change the way of examination of a single course final exam, use many forms of assessment method, make students participate in teaching evaluation, bringing the students-initiative into full play[2].

“WinForm Development Technology” is a strong practical course. We design this course using task-driven teaching method which not only impart knowledges, train programming skills but also cultivate students’ thinking ability. “Task-driven” is

one of constructivism theory teaching mode that new knowledges are included in one or several tasks[3]. Students discuss and analyze the proposed tasks, extract knowledges involved in the tasks, figure out new knowledges and old knowledges, find out the methods to solve the problems with the help and guidance of teachers and learn all the knowledges by achieving all the tasks finally. For teachers, we focus on task-driven. For students we focus on thinking ability and the combination of learn and practice[4]. Considering the higher vocational students’ characteristics, new knowledges must be blent in tasks and taught by teacher rather than by students’ self-learning or discussion. After students master the new knowledges, they can try to accomplish the tasks. In this process, students can not only review old knowledges, but also practice and consolidate the new knowledges.

2 COURSE ORIENTATION

The .NET programming technology engineers have become enterprises urgently needed talents. We conducted some survey of enterprises, seek the enterprise personnel training mode, the direction of professional training, job location and job skills required for professional knowledge views. According to the characteristics of higher vocational students, the actual post of Higher Vocational “WinForm development technology” course is WinForm beginning programmers or WinForm programmers. This course will train skilled talents with the basic theory, basic technology and basic occupation quality. The curriculums of my college

are learning C# programming, database foundation in the first semester, learning OOP technology in the second semester of, learning WinForm course in the third semester, and learning .NET Web development course in the fourth semester. So, WinForm curriculum plays a role of link.

3 DESIGN IDEAS

(1) We change the traditional theory teaching mode and use the method of teaching theoretical knowledge in practice. This method will put dull theory into the specific project, and realize the ideal of learning by doing, doing by learning, teaching by doing, practicing by teaching.

(2) It is the key point of the reform that training

profession ability is set as the target and company station is set as the guide. We choose the teaching content according to industry's needs.

(3) Each project team is made by several students to complete the project. The whole procedure simulate the real work environment of enterprise, So students can experience the real working situation.

(4) The tradition mode of teacher speak, students listen is displaced by the learner-centered teaching method. We do not confine students' learning only to schoolwork and pay more attention to students self-learning ability

(5) We attach importance to the cooperation with enterprises and listen to the industry, so the contents and methods suit to the need of the industry well.

The design concept of this course is shown in Figure 1.

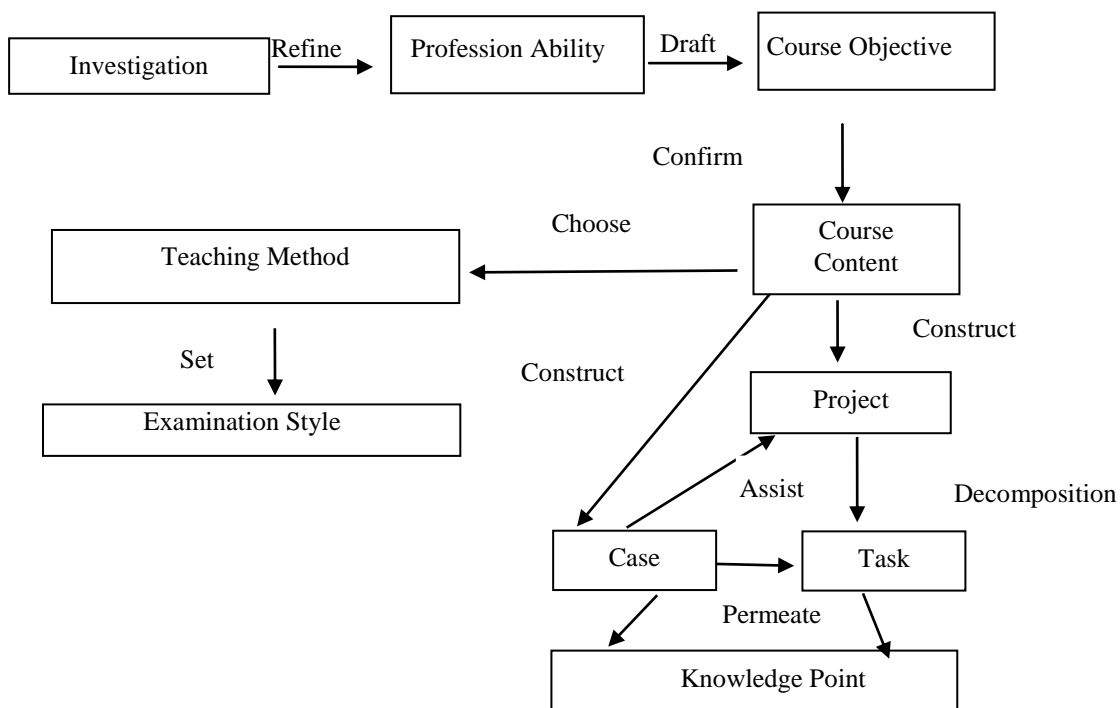


Figure 1. Design Concept

4 TEACHING GOALS

We determine this course's knowledge goals, ability goals, quality goals according to experts opinions, enterprise needs and characteristics of the students.

4.1 Knowledge goals

(1) Students must master the use of methods commonly used in the development of WinForm control.

(2) Students can develop programs using simple WinForm graphics program.

(3) Students can develop WinForm database programs.

(4) Students must understand .NETFramework2.0

related concepts, and develop programs skillfully using VS.NET2005.

4.2 Ability goals

(1) Students can develop some practical Windows applications.

(2) Cultivating students ability to analyze and design program.

(3) Students can write related documents.

4.3 Quality goals

(1) Cultivating team spirit

(2) Cultivating innovative spirit and scientific attitude

5 CONTENT SELECTION

The course content is made of three projects and several little cases. Each project is divided into many tasks which run through several chapters. Each small case covers a number of knowledge points in each chapter which help students to understand the each knowledge point.

The content has 8 chapters that are Knowledge review, WinForm basic control, Debugging and

exception, Database connect, Database operation, Advanced control, Graphic image and Comprehensive project application, 3 projects that are Personal calendar management system, Small photo housekeeper and Student management system, 15 cases and 7 tasks. Some tasks are completed by the student extracurricular in order to train students' self-study ability. The contents are shown in Table 1.

Table 1. Teaching Content

Project	Task	Chapter	Case
Personal calendar management system		Knowledge review	
	Interface Design	WinForm basic control	1. Staff Information 2. Feedback Form 3. Application Form
	System Debug	Debugging and exception	Debugging and exception
	Connecting database	Database connect	Flight Entry
	Operating data	Database operation	1. Create Students User 2. Display Teaching Information
	System Optimization	Advanced control	1. MDI 2. BOOK Management System Interface 3. Screen Protection 4. File explorer
Small photo house keeper	Photo house keeper	Graphic image	1. Draw Lines and Shapes 2. Fill shapes 3. Draw Tapered circle
Student management system	Student management system	Comprehensive project application	

6 TEACHING METHOD

The course cites engineering project as the main line, Actual projects as the carrier and The cultivation of the comprehensive vocational ability for vocational and technical college students should be carried out throughout the entire process of education.

The experimental teaching mode includes three types as knowledge teaching, simple case development and comprehensive project development. After teaching some new knowledge, students study these new knowledge by each experiment. A case development includes a series of knowledge and students finish a comprehensive project after some chapters.

So for each knowledge point, the teaching mode is "knowing - teaching - practicing - case development -- reviewing - project development....." The students can master knowledge more firmly by the recycling process can.

(1)Technology----In this course, students will experience a large number of computer training, code reading, code correction, normalization checking, so students' programming skill and normative will be improved.

(2)Experience----Through the completion of a large number of actual projects, students' software project development experience will be improved.

(3)Professional quality----Each student will have a roll in the project and each member must collaborate together to finish the project. So students will form good professional habits.

7 EXAMINATION STYLE

Students introspect the process of solving the problems and appraise with each other or by themselves. The teacher makes comments suitably and helps students to make summarization. When students have finished a task, the teacher shows and appraises several students' works rather than gives a score to evaluate students' works.

The discussion sections are scheduled for evaluating after finishing each task in "Books Management System"[5]. Firstly, each group presents their works and explains the module function realized. Secondly, other students make queries or propose improvement measures. Finally, teacher comments the works, attaches attention to the

works that can be learned and points out the place need to be improved. By analyzing and evaluating, teacher confirms students' perfect places and points out some defects. Doing these not only stimulates students' enthusiasm and confidence, but also makes students understand the principle of live and learn. Students' quality can also be promoted.

For each project, the evaluation includes six aspects process as analysis process, implementation process, implementation result, attitude, creativity, team cooperation. The proportion as shown in Table2.

Table 2. Examination Value

Content	Value
Analysis process	10%
Implementation process	30%
Implementation result	20%
Attitude	20%
Creativity	10%
Team cooperation	10%

8 CONCLUSION

"WinForm development technology" course is a very practical, creative course. The task-driven teaching method provides a way to learn knowledge from the elementary to profound, from outward appearance to inner essence, so that students can learn new knowledges and skills step by step. We can develop suitable for enterprise talent by establish the teaching mode and teching content according to the, enterprise

needs. The course can not only cultivate the students' personal development ability, but also pay attention to the training of team competence. Students of different level can learn from the course.

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