

# Visual Basic programming curriculum reform based on project penetration

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## Abstract

"VB programming" can improve students' abstract thinking and practical problem-solving ability. It has strong theoretical and practical value, but it also has certain learning difficulties. The survey found that there are many problems in the vb program design process. The curriculum is comprehensively reformed for these problems. Based on the project-based teaching, the guided teaching method is adopted to assess the professional ability of students in the course and extracurricular projects. Students' innovative ability and thinking improve the overall quality of students.

## Keywords

Project-based teaching; vb programming; curriculum reform.

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## 1. Introduction

The teaching of "Visual Basic Programming" has always been based on grammar knowledge. Visual Basic programming course is also referred to as VB programming course. It realizes VB knowledge learning through variables, data and operators, and learns according to array, structure and function. The program structure of VB. This traditional teaching mode can gradually make students master the content and knowledge in VB language, but it does not help students to develop abstract thinking and practical problem solving skills. Although students are able to understand the program and write a simple program, but the learning of their own programming knowledge does not help, which can not improve their thinking and innovation. In order to solve this problem, stimulate students' interest in learning, and cultivate students' thinking ability, try to adopt project-based teaching.

## 2. The "vb programming" course features

### 2.1 Strong foundation

Because "vb programming" is one of the basic courses for non-computer majors, it has a long history in China. The vb course has more classes in non-computer majors, usually around 64 class hours. Our requirements for the vb course mainly include 8 necessary contents, which are pointers, functions, files, branch structure programming, custom data types, arrays, sequential programming, and loop structure programming.

### 2.2 Strong theoretical value

The essence of programming is the programming of problem solving, which requires the combination of behavior and time. If a student engages in vb-related work after graduation, then as with writing, the program staff must have strong theoretical knowledge, so the vb programming has a strong theoretical value.

### 2.3 Strong practicality

Because some students have not been exposed to computer programs before learning, the computer perception is just ordinary office software operation, not suitable for the process of programming work, and has a sense of boring and fear, so that after learning vb programming students don't know the design purpose, composition and use of the vb language program. In addition, the learning of vb program not only requires students to have computer-related basic operation technology, but also requires English software installation, error correction and recognition capabilities. The development environment of vb programs in computers is mostly in English, if the program and the computer environment is separated from each other, so students will lose interest in learning vb. Therefore, the course pays special attention to students' hands-on practice, finds their own mistakes in the practice process, and corrects their own mistakes, so as to master the knowledge in vb programming, improve the ability of practical practice and the ability to solve problems practically.

### 3. "vb programming" curriculum reform program

The curriculum reform program mainly includes two stages: the language foundation stage and the improvement of programming. The former is realized under the guidance of teachers, and the latter is realized by students as the teaching subject. First, teachers use task-driven teaching to divide vb courses into five stages: task presentation, knowledge analysis, task decomposition, task implementation, and task evaluation. In the early days of teaching, teachers can use a small system as an example to explain in the classroom, so that students can understand the knowledge and enable students to discuss solutions to problems in the system design process. After that, the students can solve the problems in the course by mastering the contents of the course. The teacher finally evaluates and summarizes the students' ability to solve problems and the knowledge they have acquired. Students can modify their own mistakes based on the teacher's own evaluation, which can improve students' knowledge and skills.

Secondly, the teacher through the design of the project teaching content in the programming phase to enable students to select topics through the group form, so as to achieve the design and implementation of the real problem software system. The process of project-based teaching mainly includes project proposal, project analysis, project implementation and summary acceptance. Students are the main body in this stage, and teachers only assist and guide students. After the student proposes the project and selects the project, the teacher asks the student to conduct an independent analysis of his or her project. Based on the knowledge that the teacher taught in the classroom, the students design their own choices for the project and finally implement the project they designed. Students can discuss with each other after project design is completed and expand the content and knowledge of the project. The project is mainly designed for the performance of the project, and the project designed by the student must have certain functions. After the student completes the project design, the teacher can review the students, and the members of the group can accept each other and evaluate and display the students' completion.

The curriculum reform mainly combines the practice and theory in the above two stages, so that students can not only learn the algorithm and concept knowledge in the textbook in the learning process, but also realize the operation of the course content by themselves. The tasks in the textbook are combined with real-life projects to achieve a new revolution in the vb curriculum.

### 4. "vb programming" curriculum reform practice

The basic idea of the "vb programming" curriculum reform based on project-based teaching is to enable students to learn through design projects, taking students as the main body of curriculum learning, and using the use and mastery of knowledge and technology as the main purpose of learning. In the process of curriculum reform, it mainly starts from three aspects: teaching content, teaching methods and assessment.

#### 4.1 Reform practice framework

4.1 The content of teaching. Based on project-based teaching, the reform of the vb language curriculum is mainly carried out through practical work and software development. The selection of the project should be tailored to the actual needs, and the teaching content should also be adapted to the actual needs, mainly including the design and procedures of the program. A number of different modules, such as usage and data processing, and different modules have multiple different tasks.

4.2 Teaching methods. The teaching method generally used in project-based teaching is guided teaching, which means that after the teacher proposes the project, the students can analyze and solve the problem for the project. In the initial teaching process, the students should study the functional design of the project through their own. Mastering the knowledge and techniques to solve the problems, in the process students will encounter a variety of problems that can not be solved, which requires teachers to explain to students. The key points and difficult points in traditional teaching are difficult to understand, but the problems in project-based teaching are all raised by students themselves. Students have sufficient motivation and interest in these questions. The main role of teachers in project placement through the project-based teaching model is to achieve student learning guidance, including software development cooperation and module design. Students continuously accumulate their own system development and design experience in the learning process, and move towards the next step for themselves. The study laid a good foundation.

4.3 The way the exam is conducted. In the traditional teaching process, the teacher's control of teaching is the process of cultivating and assessing students. Students can cultivate their own abilities, knowledge and quality through the items in the classroom, so they attach importance to the process. The projects under the class are mainly to develop students' high-level abilities, so the results are emphasized. In the project-based teaching, the student's score is 100 points, including 20 points of usual grades, 60 points of in-class project scores and 20 points of under-class project scores. Only students who complete two extra-curricular and in-class programs can be considered eligible for the exam.

#### 4.2 Reform practice of "vb programming" course

Take two comprehensive projects carefully designed by a non-computer major in a university as examples, which are in-class projects and extra-curricular projects to realize the development of an enterprise management system and a performance management system. The teacher instructs the student to complete the project within the department, and the student completes the extracurricular project independently.

4.1 Overall design. The overall design of the teaching through the situation, based on the curriculum, the students are assigned the task of the project reasonably, and the students can be clear about the project objectives, so that the students can clearly define the course content of each section they want to learn, during the questioning and discussion process. Clear goals, so that students have clear ideas and improve their learning efficiency.

4.2 Implementation process. In the process of implementing the project unit, students should report the process of their own extracurricular project design. After that, the teacher should evaluate the project design, then introduce the task, guide the problems in the student project process, and then guide the revision of their own plans and discussions. After the students complete the task, they must submit their own works. The teacher introduces the competition mechanism and cultivates the students' analytical ability and evaluation ability, so that the students can understand their own deficiencies and thus can continue to correct in the future learning process.

4.3 The effect of reform. For a non-computer major class and a second class of a university survey, the survey results show that students have a general evaluation of the traditional teaching mode and a good evaluation of project-based teaching. After the project-oriented teaching, the students can independently complete the design of the project during the learning process, and flexibly use the contents of the vb course. After the students complete the project design, they will be full of sense of accomplishment and thus enhance their interest in learning. Through the guidance and questioning of

teachers, students can find solutions to problems themselves, learn in practical operations, improve problem-solving skills, and improve collaboration through teamwork.

## 5. Conclusion

Practice shows that the teaching of “vb programming” based on project-based teaching can effectively cultivate students' good study habits. In the process of students completing their projects through their own efforts and teacher guidance, they can truly feel the charm of vb programming. This kind of learning method can consolidate students' knowledge, develop students' vision, effectively cultivate students' sense of innovation and ability, improve students' programming skills and abilities, and cultivate students' communication and teamwork ability.

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