Investigate on VB Experiment Teaching Mode

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***Abstract*—**As a non-computer professional the first door of computer language course, the experiment link of VB is very important .If the experiment link is appropriate, students can understanding the basic concept of programming, and then, master the use of programming language problem-solving skills; eventually master the software development ideas. In this paper, the author analyzes the problems in this process, proposed reform of the VB experimental course from experimental content, teaching methods, assessment methods

Keywords*—*VB, experiment teaching, verification experiment, comprehensive experiment ,course design

1 Introduction

According to China's current education reforms and build- ing needs, Ministry of Education of the "Computer Culture", "Computer Technology", "Computer Application" three-level teaching system. Computer programming languages is that the universities of non-computer majors in a basic computer courses, it belongs to computer technology elementary education [1]. Visual Basic programming language in many universities is the first door of non-computer majors' computer language courses with its easy to learn, user-friendly features [2]. The purpose of learning Visual Basic is to enable students to master the basic method of high-level programming language, and so that students have some programming skills and use of computers to solve problems. As an important link, if the content of VB experimental course set at a reasonable, not only make students to grasp the basic concepts of programming, but it played a key role on students understand, learn and master software development ideas [3]. And it plays an irreplaceable role on developing hands-on ability, analytical ability and problem-solving ability of students [4]. So, how to improve the quality of university teaching VB experiment, students practice skills and innovation ability, is that each university teacher computer should think about.

2 VB Experimental Class Status

Now, most college VB courses are offered by theory course and experimental course, but in the actual teaching process, Teachers deal with theories and experimental course almost utterly different attitude: under the influence of the traditional concept of teaching, teachers tend to care only about the theory of the teaching [5]: teachers are often concerned only with theoretical teaching. They invested in the theory course a lot of time and effort: such as designed teaching plan, teaching content; reform teaching method, teaching means. But they seemed very arbitrary to treat experimental course: they arranged a number of experimental content according to the theoretical teaching content, or make students to verify some algorithm or program of the test book [6]. After the end of a semester, students practice a number of small programs, and there is no connection between these programs. If you let students design small software, it is basically no start [7].

In short, this problem of VB experimental course is mainly expressed in the following:

2.1 Lack of Systematic Experimental Teaching Program

In the traditional teaching model, the experimental courses were attached to theory courses, VB course is no exception, experimental teaching content, experimental teaching program, and course design, all of the above set by theoretical teaching content.

2.2 Experiment is too Simple

Usually, teacher arrange some experiment content by the theory teaching at random, or simply make students to verify some algorithm or program of the test book. Students me- chanically in the "copy" textbook examples of the procedure to verify the right or wrong, students can only understand the meaning of the program [8]. Almost the entire semester test is verification experiment, the lack of comprehensive experiment and designing experiments. This situation is not conducive to mobilizing the enthusiasm of students. So students lack of interest in active learning.

2.3 Too Loose Organization of Experimental Teaching

Experimental course, due to neglect on the experimental course, led to some teachers are not strict organization of teaching, resulting in some students do not attach importance to the experimental classes: students do not know what to do on the experimental class, half-hearted on class, working class need to pay for use of plagiarism [9].

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2.4 Unreasonable Assessment Methods

This assessment method of written examination is not sui- table for programming course, but most colleges and univer- sities also use written examination on VB teaching evaluation [10]. This will lead students to pass the exam will only mechanical recitation statements or concepts of textbook, It is precisely because there is no specific test experimental course, also led students do not take VB experimental course.

In conclusion, in order to improve the abilities of students, develop their ability to use computers to solve problems, form system development thinking, we have to reform many aspects of the VB experimental course

3 Reform Measures of Vb Experimental Course

The following describes the reforms of our school in VB experiment course, including the experimental plan, experimental content, experimental reports, experimental assessment methods, and several other areas.

3.1 To Develop Rigorous Experimental Teaching Plan

First, teacher should establish the conception of experimental course is as important as theory of teaching: Experimental course is not just the content of the verification of theory course, but also complement the theoretical content, practical and comprehensive, the theoretical content is added, practice and integration of the theories. Students master the theory of content through the experimental course. Develop reasonable and rigorous experimental teaching plan, to establish a complete teaching system, including the purpose of the experiment and the experiment content, hours, etc. In the development of teaching plans, note the following:

- Different majors, experimental teaching program should be different. Experimental content close to the students professional, the students have learned to use, while there is active interest in learning.
- Experimental content and experimental hours to coordinate to prevent students can not complete the experiment the contents of the normal phenomenon.
- In the setting of experimental content, the basic knowledge of point-based, while fully play the role of comprehensive experiment and course design to Stimulate student interest in active learning

3.2 Strict Management of Experimental Teaching

Require students to do well in the preview before the experiment, experiment on the computer, Problems for students, teachers should encourage students to think independently and guide the students to be bold in practice, Strive to solve their problems, Of the difficult problems encountered in the provision of appropriate guidance, On the widespread problem, teacher can use the software of the LingBo were focusing on the problem. After the experimental course, Submitted within the stipulated time assignments and lab reports, teachers carefully marking, According to the experimental and operating conditions, the common problems arising from students to analyze the reasons, was targeted in the classroom commented and summarized.

3.3 Experimental Courses in VB Reasonable Set Percentage of Variety of Experiments

3.3.1 Give Full Play to the Role of Verification Experiments to Ensure that Students Lay a Solid Foundation:

Beginners just touch VB, faced with the theoretical and practical aspects. In theory, VB as a first computer language classes, each class will be exposed to many new concepts, such as: objects, properties, events, variables, data types, algorithm, loop, etc. In practice, there are a lot of controls in VB, students to master the common control of the properties, methods, events. To grasp these new concepts to understand further, verification experiment is essential. However, no verification experiment from the beginning through to the end, in the specific practice, verification experiment found in the first half of the semester. Students understand the basic concepts, algorithms through verification experiment, and then on the program design of a conceptual understanding.

Teachers in the design of verification experiment should pay attention to the following two questions.

- In the experiment, teachers to educate students, through practical action to develop their programming skills, deepen their understanding of VB programming ideas, and then develop students thinking skills, analytical skills, inquiry skills and innovation of computer.
- Prevent students input program in accordance with textbook, then run and output the results. As this would lead to the students is not clear the purpose of the experiment.
- Reasonable to set the contents of each verification experiment: each experiment is not too much, not too little, and try to set the students interested and try to make students feel that the content of useful. For example array: teachers can allow students to practice in the experiment calculation “to calculate the credit points in student achievement”, the algorithm associated with the students

themselves, so students naturally interested.

3.3.2 Small Comprehensive Experiment to Verify the Stage of Learning Outcomes of Students:

Comprehensive experiment to train the pupils to think of ways of thinking, enable students to use comprehensive methods, means to solve problems. The purpose of learning programming languages is to enable students to master the software development ideas, methods and means. at each learning stage, or chapters add a comprehensive experiment to test this stage of theoretical kno- wledge and programming ideas, thereby enabling stud- ents to master software development ideas.

For example, complete control and array of learning content, students can develop an address book layout program; in the study completed the menu and dialog box, Students independently develop a typing practice program; after learning the contents of graph, Students to integrate their own professional content to draw some graphics. In the comprehensive experimental design should pay attention to the following questions.

- As a comprehensive experimental program, their size should be appropriate, too simple for students to lose interest, but are too complex for students dare not handle.
- Comprehensive experiments in the appropriate add a little new knowledge, stimulate self-learning abilities.

3.3.3 Course Design Verification Student Learning Outcomes:

In the end of the semester, the experiment contents should be from the verify contents, comprehensive experiment to the course design. Design experiments that course design. For the computer language courses, the course design provides students with a hands-on opportunities and brainstorming opportunities and independent practice opportunities, enable students to consolidate the learned knowledge at the same time, the contents can be dispersed learning grouped together to form a complete a learning framework. While, teacher should allowing students to experiment the basic process of system development, so that to establish the “Software Development” concept. Multiplayer cooperative program designed to cultivate team spirit.

The beginning of the semester, teacher assigned course design tasks: each student can own a topic, or select a design topic specified by teachers. Require students to be prepared in advance the topics of their own, as the course of the step by step, students should progressively elaborated system requirements analysis , overall architecture, module of the division and the design, flow chart and so the document. Finally, at the end of term given some time to achieve curriculum design. Of course, in the design process, the need for teachers to share with students, and guidance to keep abreast of the progress of students in the design to ensure the progress of each student’s design can be carried out smoothly.

Although the course design is based on the student, but the role of teachers is also very important. According to the task required students to complete requirements analysis, algorithm design, programming, debugging machine process. In this process, teachers should work for students, each student’s design issues is different, so problems also different, teacher for each student's design to give some important guidance and advice, that can become the illuminating teaching mode of student-centered, teacher guidance and comment. Encounter problems to encourage students to resolve it by themselves, teachers should not have answered every question everything for the students to complete, in this way, training students the ability to separate the debugger, but also enhances the students the confidence to debug difficult problems. At the same time, you can easily create a dynamic among the students, unity, cooperation and mutual exchange of atmosphere, the only way students can become more active thinking, students can truly independent analysis of issues and solve problems

3.3.4 Standardized Lab Reports, by Writing Lab Reports Student can Improve the Capabilities of Analysis and Summarize

Both verification experiment and comprehensive experiment or course design, test reports are essential. Lab report is a written summary of experimental teaching. It is very necessary and useful training for students to summarize research data, writing thesis and academic papers. Teachers can understand experimental results through experiments reported Students must clear the purpose of this experiment, experimental tasks, in order to deepen the understanding of experimental content before each experiment. Different experiments on the lab report requirements are different.

- Verification experiment: the report includes Purpose of the experiment, the experiment content, experimental procedures, test data and the results should appear in the correct. Experimental error, error analysis, and after the experiment, the experimental report should summarize this experiment.
- Comprehensive experiment: for a Comprehensive experiment, we asked students to write a small paper in the form of lab reports, will make the students before class, pre-designed programs, the difficulties encountered in class and questions and post the problems in data analysis to summarize, organize, analyzed and summarized to help further enhance the students analyze and solve pr-

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oblems. Moreover, this mode of scientific writing can be highly summarized test students ability to lay the foundation for their thesis writing.

- Course design: purpose and task of curriculum design, system requirements analysis, functional design, database organization and design, module detailed design, testing and operating results, analysis and summarizing the results.

3.4 Reform of Assessment Methods to Establish Objective and Comprehensive Assessment Mechanism

VB is a very practical course, so written assessment methods are not suitable for this course, In past years teaching, I have found that some students are not good at mechanical memory of knowledge points, therefore, the results in the written part of the lower, in the course design session, because a larger degree of freedom, the students have problems can access information, internet search, etc., to make the curriculum design must be practical, but the higher achievements. Therefore, assessment of student achievement, not only to see the written results, but should be the actual programming skills. Practical means to test students using VB analysis of the problem, problem-solving skills is more objectively. Assessment methods can be changed to "normal Experimental scores + comprehensive experiment scores + course design scores" weighted scoring approach. Usual experiment: 20% (5% lab report, completion and performance of the experiment 15%); Comprehensive experiment: 30% (10% lab report. program and the respondent 20%); course design: 50%.

Teachers in the specific implementation issues require attention: Usually the experiment, each student must pay close attention to experimental conditions, so teachers can control the completion of each student's experiment. Curriculum subject is to settle down in the midsemester, and teachers to track the progress of each student's curriculum. Prevent some students to get the scores to copy or download small software to cope with teacher.

4 Experiment to Try and Effect of the Reform

Reform of the experiment carried out in 08 students on probation. The entire semester course is divided into the experimental verification experiment, comprehensive experiments, and curriculum design. Experiment content unified, coherent, the end of each experiment requires students to hand in papers and handed in experiment reports. Throughout the semester, and achieved good results. Students have high motivation and enthusiasm in VB, And most of the students in the course design work in design, has some practical, user-friendly, fully functional. Following this set of data, you can see different teaching effects on different classes because of the implementation of the different experimental teaching mode (Table 1).

Table 1. Two kinds of statistical data comparison of teaching models

Teaching Mode	the number of students	The rate of interest of the course this course	The rate of finish the course design independently	The rate of innovating
Traditional experiment teaching mode	60	43%	33%	10%
experiment teaching mode after the reform	60	91%	70%	52%

5. Conclusion

More than just a little VB experience of practice teaching experience, in fact, in the teaching process should pay attention to the problems there are many. A teacher to be successful, the key is on the teaching content and teaching methods of a combination of reasonable, But in reality, because of teaching objectives, teaching content and student circumstances vary and other factors, no single model or method of teaching is generally applicable, the only principle is based on actual use of appropriate teaching models and teaching methods.

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