

ASP.NET Programming Teaching Reform Research and Practice

Houjun Liang^{1, a}, Rui Xie², Dianjie Bi¹

¹School of Management Science and Engineering, Anhui University of Finance and Economics, Bengbu, 233030, China

²School of Accounting, Anhui University of Finance and Economics, Bengbu, 233030, China

^alhj0013@126.com

Abstract

asp.net course is a professional course with strong comprehensiveness for computer major, with many knowledge points and relatively scattered. Aiming at the current situation of asp.net course teaching, this paper puts forward the project driven teaching method. Through project driven and project task segmentation, help students master programming skills, mobilize students' enthusiasm and initiative in learning, stimulate students' interest in learning, improve students' learning ability, and improve the teaching effect of the course. Practice has proved that the teaching reform of asp.net based on project driven has achieved good teaching results.

Keywords

Asp.Net; Reform in Education; Project Driven; Practical Teaching.

1. Introduction

With the continuous development of Internet technology, the demand for computer professionals is increasing. At present, the two major architectures in network applications are C/S and B/S. Asp.net, as a representative programming language of C/S structure, is more and more widely used in network development. Through the study of asp.net website design, students can master network development and programming technology, cultivate students' good software development ability, and make students better adapt to social needs. Because the knowledge points of asp.net website design course are relatively difficult and the content is relatively abstract, teachers have encountered many problems when teaching this course. Through the investigation of theoretical teaching and practical teaching, it is found that there are many problems in students' learning. First of all, there are problems in the content arrangement of asp.net website design. The traditional teaching method is that teachers first choose a suitable textbook and teach knowledge points in turn according to the arrangement of the textbook. The experimental class is only in an auxiliary position. First, explain the theoretical knowledge, and then verify the results through the experimental class. In this way, the difficult and abstract theoretical knowledge is explained intensively, which increases the difficulty of students' learning and affects students' understanding and mastery of knowledge. This problem also exists in experimental classes in traditional teaching methods. The content of the experimental course is less related to each other, and it is not closely combined with the actual website development, which is lack of attraction. This situation will reduce students' enthusiasm for learning. In addition, students' course learning just stays on knowledge points and experimental exercises, and they have no actual website development experience, so they can't connect scattered knowledge points, and can't understand their programming ability.

Asp.net is not a language, but a powerful server-side technology for creating dynamic web pages [1]. Asp.net is an important part of Microsoft's .Net strategy. It is a next-generation enterprise network computing web platform. At present, asp.net is widely used in the field of

web application development, and it is one of the mainstream technologies of web application development. At present, there is a great demand for web application development talents, and major colleges and universities have set up asp.net course as a professional course of computer major [2].

2. ASP. Net Teaching Status

At present, the following problems are common in asp.net course teaching:

(1) Teacher centered. At present, the traditional asp.net course teaching is mainly teaching. Before teaching, teachers first analyze the knowledge structure of the course, then teach the knowledge points of the course step by step, and students learn the knowledge points step by step. This teaching method places too much emphasis on the importance of grammar. Although examples will be given in the teaching process, the examples are isolated, and the knowledge students master is scattered and unsystematic, lacking the overall grasp of curriculum knowledge. Many students are still at a loss when facing the actual project development after learning.

(2) The teaching content is scattered and the teaching process is boring. Asp.net is a comprehensive course, which is the comprehensive application of database, C #, HTML, CSS, JavaScript, jQuery and other courses. Its curriculum system is relatively scattered, and there are many knowledge points in the content, which brings certain difficulties to students' learning. In learning, it feels abstract and complex, and the learning process is boring. Even though I spent a lot of time and energy mastering grammar knowledge, I was still at a loss when I solved practical problems independently.

(3) Students' learning is divorced from doing. Most schools are interested in asp Net course adopts the teaching arrangement of four theoretical courses and two experimental courses every week, and the multimedia explanation and demonstration of teachers and the operation practice of students are not effectively connected. Students are more passive in the learning process, and it is difficult to understand, "learning" and "doing" are divorced. Students are prone to fear difficulties and dislike learning, which restricts the stimulation of students' subjective initiative and the improvement of teaching effect; Students' learning ability, problem analysis ability, practical ability and teamwork ability cannot be exercised and improved.

(4) The assessment content focuses on theory and the assessment method is single. The evaluation method of teaching effect is mainly theoretical assessment, and students often recite some concepts and principles mechanically. This assessment method affects the cultivation of students' learning consciousness, learning interest and learning ability to a certain extent. At the same time, the theoretical examination method can not fully reflect the students' practical ability in the analysis and design of practical projects, hands-on programming and other aspects, resulting in students' attention to the theoretical examination results and neglect of practical learning, which is not conducive to the cultivation and improvement of students' practical ability.

(5) Failed to focus on the differences in students' level and adopt a one size fits all teaching method. ASP. Net course is a professional course for senior computer majors in Colleges and universities. After several years of study, students' computer learning foundation is different, and there are great differences in computer programming proficiency. Students with a good foundation learn and master easily, while for students with a poor foundation, asp.net learning is a little boring, which puts forward higher requirements for teachers' teaching.

3. Curriculum Teaching Reform

3.1. Project Driven Teaching Method

"Project driven teaching method" [4] was first seen in the project teaching method written by American educator Katz and Canadian educator Chad. It is believed that knowledge can be constructed and obtained independently under certain conditions, learning is the improvement of knowledge, skills and behavior, attitude and values, and education is a conscious, systematic and organized continuous communication activity to meet the needs of improvement. Project teaching method [5, 6] refers to the teaching activities carried out by teachers and students through the joint implementation of a complete work project. It requires students to use their existing knowledge and experience to solve practical problems in specific situations through personal operation. It breaks the traditional concept of classroom teaching and makes an all-round and multi-level exploration. Using the project driven teaching method, students have changed from learners to workers, and the idea of thinking about problems has changed from "what I want to learn from teachers" to "how I should do it myself", which improves students' initiative and enthusiasm in learning, is conducive to overcoming the disadvantages of lecturing teaching, makes students understand curriculum ideas, and improves their ability to analyze and solve problems in the actual project development.

3.2. Specific Implementation Plan of Curriculum Teaching Reform

(1) Item content selection. First of all, we should select representative, practical and familiar projects for students to analyze and understand, so as to stimulate students' enthusiasm and subjective initiative; Secondly, the complexity and difficulty of the project are moderate, and it is best to complete it within the specified class hours, and cover the main knowledge points of the course, which is easy to understand. For example, shopping websites, student information systems, library management systems, etc. are all good project examples.

(2) Class location selection. Due to the project driven method of teaching, it is best to arrange the place of class in the computer room, so that students can learn while doing, and apply the learned knowledge to practical projects in time, so as to deepen the understanding and mastery of theoretical knowledge, which is conducive to the cultivation and improvement of students' practical ability.

(3) Course implementation steps. The teaching of the whole course is carried out according to the idea of software engineering, which is divided into the following steps: ① at the beginning of the course, the follow-up teaching is carried out around the project through the project; ② Students collect project materials, discuss, and roughly divide the whole project into several modules to form preliminary research documents; ③ Group the whole class according to the divided modules, taking into account the basic differences of students and paying attention to collocation. After getting the module, each group of students, under the guidance of teachers, determine the system analysis requirements according to the idea of software engineering, carry out outline design and detailed design, and form corresponding documents; ④ Teachers use demonstration to teach how to build asp.net development environment and explain relevant knowledge points (such as asp.net development history, characteristics, development software, software use, etc.). Students learn while doing to improve their practical ability; ⑤ Enter the development mode. Teachers teach the knowledge of web development, such as creating a website, building web pages, controls, etc. After learning relevant knowledge, students complete relevant interface development according to detailed design documents During the implementation of the project, teachers should observe and understand the learning situation of students and make corresponding records to put forward learning requirements. Encourage and help students with poor practical ability to complete the design despite difficulties; Guide students with strong hands-on ability to innovate, do more exploration, and

stimulate learning enthusiasm. At the same time, team members should often switch between the roles of system design, program development, database design and testers, understand the content of modules made by other students, and master teaching knowledge points.

3.3. Micro Class Teaching Method

In recent years, the concept of micro class is gradually entering the field of education and teaching. Micro class is a new teaching method to teach knowledge in the form of micro video, which is formulated according to the curriculum teaching standards. The capacity of each micro video is very small (generally only 5 ~ 10min), but the knowledge points taught are targeted and have strong independence. Carefully designed micro class resources can make teaching more vivid and interesting. Before making a micro class, we should first consider the situation of students and teaching content, design the micro class teaching according to the students' basic knowledge level, and carefully study the content to be made into a micro class. Not all content is suitable for making a micro class. Teachers should select knowledge points for teaching according to their own teaching experience, and select the parts suitable for making micro classes. Limited by the capacity, the relatively independent and important content of knowledge points should be selected as the content of micro courses in the course of asp.net website design, and the type of micro courses should be selected according to the specific content of knowledge points. There are many types of micro classes, which can be adjusted according to their own teaching conditions. For example, for the abstract theoretical content, you can choose the lecturing micro class or the question and answer micro class. Theoretical knowledge is often more abstract and difficult to understand. Making micro class can design serial questions to guide students to draw conclusions. For the experimental operational content, you can choose demonstration type micro class or practice type micro class. Through the experimental content demonstration operation, arrange similar exercise topics to exercise students' practical operation ability. At the same time, it can also integrate theoretical knowledge into practical programming and deepen the memory of theoretical knowledge. In the traditional teaching of asp.net website design, teachers are responsible for teaching a single theoretical knowledge, and students passively accept it. In the face of boring content, students soon lose their enthusiasm for learning. By introducing micro class teaching means, students can preview through micro class videos, and in the experimental class, they can also freely access the micro class content for review according to their level of knowledge. It makes up for the problem that teachers can't take care of each student's learning level and realize personalized teaching in traditional teaching.

3.4. Project Teaching Method

The main teaching goal of asp.net website design course is to cultivate students' ability to use VS.NET platform to develop dynamic websites. Traditional teaching methods ignore the importance of practical teaching to students. The theoretical classroom teaching knowledge is not closely related to the experimental class, the experimental design is independent of each other, and the coherence between knowledge is ignored, which leads to the poor ability of students' actual website development. Project teaching method is to add suitable teaching projects in teaching to exercise students' practical ability. To realize the project teaching method, the first thing is to choose the appropriate project. The important basis for selecting the topic of the project is the students' knowledge level and ability. The difficulty of the topic should be moderate, and attention should be paid to the combination with social reality. The project function should include the knowledge points involved in the teaching objectives. According to the specific teaching situation, students can choose their own topics according to their personal hobbies and specialties. This can increase students' interest in learning. Teachers can give appropriate guidance in actual operation. After selecting the project title, we should reconfirm the project function module according to the teaching objectives. The project should

preferably include most of the teaching knowledge points. Because the sequence of knowledge points in the textbook arrangement of asp.net website design is inconsistent with the sequence of project development, teachers have to adjust the curriculum arrangement according to the content of project development. Teachers guide students to complete theoretical knowledge learning and verify theoretical knowledge through experiments, so as to closely combine theory with practice. Students can complete the project in the form of teamwork. According to the scale of the project, students are divided into groups to form a development team to complete the project. The project is divided into several modules with independent functions, and each group of students undertakes the development of different modules. This form increases students' sense of team honor, strengthens students' communication skills, enlivens the classroom atmosphere, and strengthens students' enthusiasm for learning. Some problems should be paid attention to when the project teaching method is applied to teaching. First of all, the topic selection of the initial project is not easy and too difficult. We should choose some small projects that are not technically difficult and are often used in practice. Such projects are easy to succeed and can bring confidence to students in the early stage of learning. For example, simple login system, instant messaging system, voting procedures, etc. Secondly, when developing teams, students should consider the wishes of each student and group according to their abilities and characteristics. Such teamwork can mobilize the enthusiasm of each student to the greatest extent. It should be noted that there are some disadvantages in using team cooperation. Each student is only responsible for his own module, and the practice content is fragmented, which is not conducive to the overall grasp of the system. Teachers can combine individual completion and team cooperation to avoid this problem.

3.5. "Practice-Theory-Practice" Teaching Method

The traditional teaching method adopts the teaching method of theoretical explanation first and then practical operation, resulting in students' failure to apply theoretical knowledge in practical operation in time, theoretical knowledge can not be well understood, and they do not know why to operate in this way during practical operation. Such teaching method needs to be reformed. The teaching method of "practice theory practice" is adopted, and the practical operation is carried out first, so that students can see the operation results and think about why such results occur. Then explain the theoretical knowledge, students will have a new understanding of the results of practice, find answers with questions, and be more impressed, and the effect of theoretical learning will be better. Finally, practice again to consolidate the knowledge learned. The teaching method of "practice theory practice" can better enable students to apply theoretical knowledge to practical operation, and finally achieve the purpose of cultivating students' practical ability.

4. Assessment Method

ASP. Net course is a highly practical course. The way to test the teaching effect should not only be the examination results, but should examine whether students can flexibly apply the knowledge they have learned to practical projects and solve practical problems with the knowledge they have learned. In terms of assessment methods, we should change the traditional assessment methods, adopt diversified assessment methods, and increase the examination of practical content. The student's score consists of three parts, namely, the usual score, the paper score and the computer test score. The usual grades are mainly attendance, homework, usual performance, etc., accounting for 30%; The examination results are mainly the investigation of asp.net basic knowledge, accounting for 30%; The computer test is mainly for asp Net technology and the results of usual practice in the computer room account for 40%. The traditional course evaluation method of asp.net website design adopts the closed book examination method of theory course, with the usual score accounting for 30% and the final

closed book examination accounting for 70%. The teacher judges the students' learning level through the final examination. This course is a course with high requirements for theoretical knowledge and practical ability, and the test paper examination method can not accurately reflect the real learning level of students. Therefore, we should reform the evaluation system from the actual teaching situation, truly evaluate students' ability and stimulate students' enthusiasm for learning. The reform of the evaluation system of asp.net program design course should focus on the practical ability of students according to the talent training objectives. The evaluation can be carried out by combining phased evaluation with project investigation, and the corresponding project evaluation should be arranged at different stages of teaching according to the teaching progress. In the first stage, students' basic website development ability is examined by making simple websites; In the second stage, students' mastery of script language is investigated by adding script language to the website in the previous stage; In the third stage, add built-in objects and file processing functions to the website to investigate students' mastery of built-in objects and file processing; In the fourth stage, the function of student database access is investigated by adding modules such as login function. This assessment mode well reflects the students' learning situation at all stages of the course.

5. Conclusion

Teaching practice shows that after the implementation of this teaching method, asp.net course teaching has achieved good teaching results, students' enthusiasm and initiative in learning have been improved, students' practical ability, comprehensive quality and teamwork ability have been well exercised, and the effect of "doing in teaching and learning by doing" has been achieved. Of course, some problems have also been found in the teaching process, such as some knowledge points are not covered, which need to be carefully summarized in the teaching process to continuously improve the teaching effect.

Acknowledgments

This study was funded by the Teaching and Research Fund Project of the Anhui University of Finance and Economics(acszyzd2020002, Provincial Quality Engineering (online course - "c#. Net programming")).

References

- [1] chengguanghua. Web application development [M]. Beijing: Tsinghua University Press, 2017:12-15.
- [2] Luo Ling. Research on innovative teaching method of project driven "asp.net programming" course [J]. Education and teaching research, 2019 (13): 134-136.
- [3] Li Xiaocui, Chen Min, Ye Xiaozhou. Research on project driven teaching mode of computer major in Local Undergraduate Colleges [J]. China Electric Power Education, 2019 (8): 52-53.
- [4] Liu Guiyang, Wang Na, Qi Ying, Liu Jinming, Ma Tiemin. Exploration and practice of open teaching model based on project driving [J]. Journal of Mudanjiang Normal University: Natural Science Edition, 2018 (1): 65-67.
- [5] Yang Yajing. Research on Hierarchical Teaching of asp.net courses guided by project practice [J]. Software guide, 2017, 15 (1): 186-187.
- [6] Zhao Ying. Application of project driven method in the teaching of ASP dynamic web design [J]. Software guide, 2018, 11 (7): 173-174.