

Research on the Teaching Reform of "PHP Programming" Course based on Case-based Teaching

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Abstract

In the traditional teaching mode, there are problems that programming language courses tend to be theory-oriented and students face uneven programming foundations. Based on the problems that the course content is too theoretical and the students' programming foundation is different, the teaching reform research is carried out. Taking the course of "PHP Programming" as an example, this paper proposes a case-based teaching reform of "PHP Programming". This paper firstly analyzes the teaching status of "PHP Programming", then expounds the significance of the teaching reform of "PHP Programming" based on case-based teaching, and finally puts forward the teaching reform strategy of "PHP Programming" based on case-based teaching. Transmit more applied talents for the society.

Keywords

Case; Teaching; Course Reform.

1. An Overview of Case-based Teaching

As one of the important courses of software engineering major, "PHP Programming" is of great significance to the improvement of students' algorithm design ability and algorithm implementation ability. The case-based teaching is integrated in the course reform of PHP programming, and to a certain extent, it simulates a realistic practice scene for teachers and students.

Case-based teaching is to further understand and master the theoretical and practical knowledge contained in the case in the process of completing the case, organize the theoretical knowledge with the case as the carrier, and use the case activity as the main learning method[1]. Case-based teaching is inseparable from the two core links of enterprise project analysis and case design. Enterprise project analysis can accurately grasp the requirements of enterprise work, provide a basis for the selection of case content, and establish the internal connection between the course content and enterprise projects, thereby establishing the integration of learning and work, theory and practice. Case-based teaching is based on the analysis of enterprise projects, with professional skills as the learning goal, and on the basis of the core content of actual enterprise work, the course content is decomposed, and the re-selection and case-based design are carried out according to the principle of cases. The designed case content includes the theoretical knowledge and practical skills that students need to master, and the vocational skills requirements are explained in depth in a progressive manner.

In the face of students with different foundations, the same basic cases will be provided first, and then advanced cases of different levels will be provided for learning according to the students' specific learning conditions, so that to a certain extent, all students' theoretical knowledge and practical skills can be doubled[2]. Therefore, case-based teaching is a new teaching mode constructed according to the professional talent training program and the needs of enterprises.

2. Research Status

Nowadays, enterprises have a very strong demand for computer professionals. Programmers can design and implement products according to customer needs, so as to solve customer problems and improve the development of enterprises. However, enterprises have very high requirements for programmers. They not only require programmers to have rich theoretical knowledge, but also pay more attention to the practical ability of programmers.

Programming language courses are the core courses of computer majors, which not only require students of this major to master solid theoretical knowledge, but more importantly, students' practical ability. In the traditional teaching mode, the content of the courses adopted is relatively simple, mainly based on theoretical knowledge, and the theoretical knowledge is relatively empty and profound, which makes it difficult for students to understand, resulting in the psychology of learning weariness[3]. There are few practical parts in the course, and the only practical cases are simple implementations, and there is no connection as a whole to achieve the cohesion of knowledge.

In the traditional teaching mode, the content of the course is unified, but the foundation of the students is inconsistent. Therefore, in the face of unified teaching content, different students absorb it differently. Students with different foundations need to formulate different course follow-up content, so as to maximize the ability of students as much as possible. In view of the above situation, this paper will take the course of "PHP Programming" as the reform course to carry out the course reform research based on case-based teaching.

3. The Significance of Teaching Reform

Under the traditional teaching mode, the development of "PHP Programming" course teaching and practical learning are not well combined, and students are learning more theoretical knowledge in the classroom, while theoretical knowledge is relatively empty and abstract, lacking corresponding Case practice reduces the learning efficiency and quality of students, and cannot achieve the purpose of enabling students to quickly adapt to enterprise project development[4].

The case-based teaching of the course "PHP Programming" takes case study as the main body, and carries out teaching through actual or virtual cases. Teachers can design the content of course case-based teaching from the overall level of the course according to the teaching materials, determine the theoretical knowledge points of learning, and summarize and organize them, formulate virtual or actual cases and implementation plans, and learn the corresponding theoretical knowledge based on the cases. Make sure that the learning cases are more targeted and that the cases are connected. In addition, students can be grouped, and cases with different levels of difficulty can be formulated for students with different foundations according to the requirements of course cases, and the course case-based learning tasks can be assigned to each group, so as to improve students' experience of practical case application. So that students at different levels can quickly grasp the theoretical knowledge points contained in the corresponding cases, so as to achieve the purpose of improving students' practical ability.

The application of case-based teaching to the course of "PHP Programming" breaks through the shortcomings of traditional teaching to a certain extent, and focuses on the core case-based teaching of concepts, methods, nouns and other theoretical knowledge points, which will enable students to find learning goals and direction. In group study, teachers can encourage students to learn cooperatively in study groups, so as to cultivate students' sense of teamwork and improve their coordination ability, which to some extent enables students to experience the development environment of enterprise teams in advance. In the process of group study, students are encouraged to find theoretical knowledge in textbooks from cases, and further

apply corresponding theoretical knowledge in other cases, so as to realize the precise connection of knowledge and skills. In the process, it is able to help students gradually enter the role of the work. This mode of mobilizing students' autonomous learning motivation can effectively improve students' learning consciousness and stimulate students' learning potential.

4. Reform Strategy

4.1. Perfect Case-based Teaching Content Design

The teaching content is the basis of the case-based teaching of the course "PHP Programming", which includes teaching resources, teaching materials, teaching cases and other aspects. The main purpose of teaching content design and construction is to sort out the outline of basic conceptual knowledge and principles first, and then combine existing basic knowledge points with corresponding cases to construct teaching resources. Through the original teaching mode, such as the online and offline hybrid teaching mode and the construction of mind maps, the basic theoretical knowledge of PHP programming is sorted out, and students are guided to build a phased knowledge system of PHP programming courses, so that teachers can learn Step by step case-based teaching.

Take the basic knowledge points of the course as the core and integrate them with the cases. Different cases should contain different knowledge points[5]. Cases should not only reflect the comprehensiveness of their knowledge points, but also reflect the characteristics of each case. The characteristics of cases mean that different cases should focus on different knowledge. Based on the above-mentioned teaching content design criteria, construct a comprehensive teaching and teaching auxiliary resources for the course. Enable students to use online platform resources to study, complete independent study before class, review after class. Fully mobilize students' enthusiasm for learning, improve students' autonomy and initiative, and develop the habit of independent learning, thereby improving the teaching quality and learning effect of the course, and fully preparing for case-based learning.

4.2. Integrated Course Case-based Teaching Method

The traditional teaching method is based on the teacher's lecture as the main body, and the students do not participate well. In the case-based teaching, the students will be the main body of the classroom and the teachers will be the auxiliary. The case of "PHP Programming" course is distributed to the students of each group in the form of learning tasks, so that students can participate in the actual case. Combined with the current application of PHP programming in project development, students are guided to put forward interesting projects or problems and diverge, and then formulate corresponding cases with corresponding knowledge points. For example, select the case project of the student information management system, group the students, and simulate the overall project development process. In this process, students with different learning progress can independently choose cases with different degrees of difficulty to further study. With the progress of the project process, students can not only master the whole process and links of the project from a macro perspective, but also correspond the theoretical knowledge points contained in it with the knowledge points in the PHP programming course. In this way, a mind map of course knowledge points is constructed, and students' programming ability, innovation ability and problem-solving ability are improved at the same time. By incorporating case studies into teaching, the development project process and the teaching process complement each other.

The basis of each student is inconsistent, and for the same teaching content, the learning effect is also different. If we do not design cases with different levels of difficulty for students with different foundations, it will eventually lead to better students and worse students. The reason for this result is that the difficulty of case design is beyond the acceptable range of students with

weak foundations, and with the advancement of teaching, students are in this situation for a long time, which will stimulate students' weariness of learning, and even further cause students to doubt self-learning ability. Therefore, when facing students with different foundations, we should set up cases of different difficulty according to students with different foundations, and provide students with choices[6]. In this process, students with different learning progress can independently choose cases with different degrees of difficulty to study. In addition, teachers can judge whether the students meet the conditions for entering the next case study according to the students' case results. Teachers can also reflect the weaknesses of students' knowledge points based on case errors, so as to give targeted explanations.

4.3. Course Evaluation and Feedback

On the basis of the assessment model based on the final examination paper results, daily grades and homework, the current assessment method is reformed, and the students' learning achievements are tested as fair and objective as possible. In the assessment, detailed stage assessment indicators and assessment methods are formulated to improve the assessment weight of classroom case exercises, so as to achieve a comprehensive and complete assessment of students' learning process, and to fully mobilize students' enthusiasm for learning by means of dynamic assessment. The assessment results are used to feedback students' mastery, and the case content is adjusted based on the assessment details, which can not only improve the coverage of teaching knowledge points, but also improve students' programming ability and students' personal comprehensive quality.

5. Summarize

Aiming at the problems that programming language courses are too theoretical and the programming foundation among students is uneven, this paper proposes a teaching reform of "PHP Programming" based on case-based teaching. The theoretical knowledge points of the course are integrated into the case, and the course content is further understood in the practical operation, so as to solve the problem that the content of programming language courses is too theoretical. And set cases of different difficulty at different stages, conduct independent learning in the form of groups, provide relatively suitable cases for students with different foundations, so that the ability of students with different foundations can be improved to the greatest extent, and achieve more transmission for the society. The purpose of applied talents.

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