

Research and Discussion on the "Student-centered" Teaching Model of Database Principle Course

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Abstract. In recent years, database technology and mobile Internet technology have developed rapidly, and they have penetrated each other and promoted each other, which has put forward higher requirements for the teaching of database courses. The database principle is an indispensable compulsory course for the computer major, and it is the cornerstone for the cultivation of students' engineering quality and innovation ability. This paper adheres to the "student-centered" teaching model and philosophy. Through the method of interest guidance, task-driven and strengthening teacher integration, it will stimulate students' sense of ownership and greatly improve the quality and efficiency of teaching.

Introduction

Nowadays, the momentum of technological development is in full swing, and the Internet of Everything is slowly becoming a reality, which means that a large amount of data will be generated, and the database plays an important role in the storage and management of massive data. Therefore, the database principle has always been an indispensable course for computer majors, and its importance in learning and application is self-evident.

The database principle course focuses on the explanation of principle, the content of that is somewhat boring, which makes students unable to concentrate in the classroom for a long time. And nowadays although there are many network teaching platforms, but its functions have not been well utilized. The key to solve these problems lies in the students, students are the main body of classroom teaching, classroom teaching activities should focus on the growth and development of students, so that students should make use of the existing network teaching platform through reasonable methods to improve their learning efficiency. Therefore, this paper pays attention to the importance of taking students as the main body, and devotes itself to giving full play to the main role of students in the classroom to promote the improvement of teaching efficiency.

Primary Coverage

Interest Guide. "Interest" is the best teacher. The so-called interest-guided method is to enable students to have an interest in the knowledge they have learned in the classroom of database principles, to actively learn and research related knowledge, and to carry out related knowledge expansion after class. In the process of teaching, teachers can try to cultivate students' interest in learning through the following novel teaching methods [1], and constantly establish the main position of students in the teaching process.

(1) Role exchange method

Drawing lessons from the modern teaching methods, the part of the teaching contents can be improved in the form of flipping the classroom: the roles of students and teachers are exchanged, and students are the dominant players in the classroom. The content of the course taught by the students, due to their insufficient level, can be selected that the simpler part of the database principle by the teacher. Before the class, students can use the micro-course video released by the teacher to learn first, and then select one of that to take the stage to give lectures. At the same time, students can also conduct extensive discussions on the knowledge they have learned in the classroom, give full play to the advantages of student-centered, and truly become the main body of the classroom. Relatively speaking, in the process of flipping the classroom, the teacher only plays a supporting role, and is the listener and the instructor of the classroom.

(2) Discussion teaching method

The interactive discussion can effectively mobilize the enthusiasm of students, stimulate students' learning potential, and continuously improve students' self-exploration ability [2]. Therefore, it is very important for students to discuss in class or out class to stimulate their interest in learning. Based on the degree of students' mastery of knowledge, this paper proposes a three-stage discussion teaching scheme of 0 basics, reinforcement and expansion.

0 basic discussion:

In the classroom, teachers can first "throw away a brick in order to get a gem" and use an example related to the theme of this lesson to guide students to discuss. Discussing when students are ignorant of what they have learned can inspire students' curiosity. In the process of discussion, since the formal learning knowledge has not yet begun, the space that everyone imagines will be very large, which can well train students' divergent thinking and enhance classroom vitality.

Reinforce the discussion:

After students have mastered the textbook knowledge, they can discuss with other students based on their own unique understanding of knowledge. The discussion at this time is the refinement and sublimation of the knowledge learned, which can truly show the students' individualized thinking and effectively improve the students' ability to sum up knowledge. On a common online teaching aid platform, there will be a discussion area under each stage of the course. Students can use the discussion areas in the platform to explore each other's perceptions and experiences.

Expand the discussion:

Not only in class, but also after class, students can be encouraged to extend the extension and expansion of classroom knowledge. For example, when learning the knowledge of data privacy protection, students can consult some literature [3-7] of database application frontier after class. In this way, not only can broaden horizons, but students can also discuss each other's original views on the relevant knowledge. These extensions can make everyone's learning scope not only limited to textbooks, but also extend to the knowledge of extracurricular related fields, so that everyone can progress together and enhance their respective insights and visions.

(3) Error warning method

Errors are common in learning and life, but people are often sensitive to mistakes. As a result, teachers can mark the places where students are prone to mistakes or where they already have mistakes before class, and sum up them on PPT. In the classroom, playing these PPT with the wrong content will attract everyone's attention and curiosity, and then let the students find the error points and give explanations. Generally speaking, few students can find all the mistakes. And then the teacher points out the mistakes and explains the knowledge in detail, and gives some tips and methods to prevent mistakes. Through such the form, students will listen more carefully to the teacher's explanation of these erroneous points, and the probability of mastering this knowledge will also become larger. Through the above methods, teachers can not only promote the classroom atmosphere, stimulate students' enthusiasm for learning, but also enable students' attention to firmly focus on the teacher's explanation, and effectively improve the quality of classroom teaching and students' learning efficiency.

(4) Relevant actual method

The students' attention in the classroom is not concentrated. A large part of the reason is that they think that the knowledge in the class is not related to their actual life and can not help their daily life. In response to this problem, teachers can expand in the classroom and combine the knowledge in the book with the examples in real life to tell the students. For example, when the teacher talks about database security protection, it can be combined with examples of personal information disclosure, account hacking, virus transmission, etc., which are closely related to the reality of life, and then return to the knowledge of the textbook to explain how effectively avoid some data errors in the database, such as blocking, security protocols and other means. In the process of teachers explaining the teaching materials in combination with life, not only can students be curious and interested, but also enable students to understand and absorb relevant knowledge more deeply, so that students can understand that learning in class is closely related to life. This knowledge will come in handy in their future lives and work.

(5) Problem guidance method

Nowadays, many students are only learning the knowledge in books at school. However, they don't have the ability to use what they've learned to solve more complex practical problems, this ability is very important for students who are about to enter society and step into work. Therefore, the problem-guided teaching form will be used to stimulate students' interest in learning, that is, students should follow the guidance to actively solve complex problems and improve their learning independence and thinking ability. In the teaching process, if the students have a good understanding and mastery of the knowledge they have learned, they should be given more complicated questions for the corresponding knowledge points. Let students think more, do more, and learn to test their ideas with practice. In the specific implementation process, the main role of the teacher is to guide the students. It is best to ask questions from the beginning of class, so that students can concentrate on the class from the beginning. And as time goes by and the continuous progress of the curriculum, teachers can also step by step guide students to find solutions to problems. Of course, the best situation is that students can have different thinking and be able to give their own answers in an unconventional way, so that they can broaden their thinking and exercise their ability to think independently.

Task Driven. In the 5G era, the teaching mode of "student-centered" pays more attention to the cultivation of students' ability to study independently, analyze problems and solve problems. Therefore, the teaching strategies of diversified "Task-driven" should be adopted, and the motivation, initiative and creativity of the students in learning can be mobilized by means of the teaching methods of incentive, inquiry and cooperation.

(1) Incentive teaching

The college students entering the university campus also have the right of youth, with a clear character and a strong sense of competition. Therefore, the teacher can organize some knowledge contest on the course in the course of the teaching of the database, so as to encourage students to be more motivated to learn relevant knowledge. The knowledge contest can have a variety of content and forms, for example, to make the students interpret and analyze the learned knowledge in combination with the case of some real life, to use the knowledge of the database to really build a database program and make a comparison. According to the actual situation, some awards are set to encourage students to participate in the classroom more deeply, and to make students integrate what they have learned into their own wealth.

(2) Inquiry teaching

In today's society, many college students lack the ability to study and analyze independently. In the university class, we should try to give them more opportunities to exercise these abilities. In the course of concrete teaching, the teacher

can give an open proposition in a given range based on the relevant contents of the database principle being taught, so that students can continuously explore and analyze the given subject by using some resources they have learned and around them, and finally be able to refine and sublimate the knowledge they have learned. At the same time, this process is also a kind of exercise and development for themselves.

(3) Cooperative teaching

In the training of high-educated talents, almost all the universities and scientific research institutions are in the form of using the team to complete various scientific research and academic activities. Therefore, in the course of the university student's database principle teaching, this kind of team form can also be used to improve the students' learning enthusiasm and team consciousness. In the teaching process of the whole database principle, all the elements that work with the team can be integrated. In the first place, the students are grouped according to the equilibrium principle, and then, in the three stages of before the class, during and after the class, a series of learning tasks are carried out in the form of a team. With the accompany and help of the team members, a team and all the members of the team can benefit from the rich knowledge. And this is also the fruit of co-operation.

Teacher Integration. In the traditional classroom, there are always some gaps between the two sides due to the differences in the age, position, and experience of the teachers and students. Therefore, teachers should be more integrated into the world of students and communicate with students. This paper puts forward three steps to acquaint the students, encourage the students and care for the students to integrate into the student group. These measures can develop more reasonable teaching programs, improve teaching quality and learning efficiency and create a good learning atmosphere for students.

(1) Acquaint students

Teachers should learn more about each student's individual situation in order to create a unique training program for each student. Before the class, teachers and students can exchange their own QQ, WeChat and other contact information in order to communicate in the process of learning; during the class, teachers can be familiar with the name, personality, hobbies, learning situation of each student in the class by often asking questions; after class, they can organize some extracurricular activities as far as possible to strengthen the communication between teachers and students. On the other hand, using the online teaching aid platform, teachers can see the student's learning progress and their online test results from the back end of the platform, more accurately grasp the student's learning situation and dynamics in real time.

(2) Encourage students

For students with different learning situations, teachers should deal with them according to the corresponding situation. For students with excellent academic performance, teachers can give more approval and recognition to the students, and advise them to refrain from conceit and impetuosity. For students who are not optimistic about the situation, teachers should encourage them more, instead of reprimanding them frequently. So that they can learn more harder.

(3) Care for students

In contemporary society, the psychological state of students is also very worthy of attention. Teachers should pay more attention to the psychological state of the students. If necessary, they should provide corresponding counseling by conducting face-to-face conversations in the spare time or communicating one-on-one with students online. And teachers should encourage and approve students with poor mental status and guide them to face their study and life with an optimistic attitude. Teachers and students should form a family that loves each other, so as to give students a relaxed and pleasant learning environment. This will also help to stimulate students' potential and enhance their enthusiasm and initiative.

Summary

The methods of interest guide, task-driven and strengthening teacher integration mentioned in this paper are all integrated into the teaching concept of "students-oriented". The reform and innovation of traditional teaching mode with modern thinking will be beneficial to the students to better study computer knowledge and improve the comprehensive quality of college students.

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