

The Practice of Case Teaching Method in Oracle Database Teaching under the Construction of "Student-centered" Teaching Mode

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Abstract: In view of the application of Traditional Teaching Mode in Oracle Database teaching, this paper analyses the construction of "Student-centered" teaching mode. In order to stimulate students' learning enthusiasm, initiative and creativity, the author puts forward the research and exploration of Case Teaching Method (CTM) in Oracle Database teaching. Then, this paper expounds the practice of Case Teaching Method in Oracle Database teaching under the "Student-centered" teaching mode. In the end, the author summarizes.

1. Application Status of Traditional Teaching Mode in Oracle Database Teaching

For thousands of years in China, teachers have been standing and lecturing. Students sit at their desks and listen to their lessons. Teachers read aloud and sometimes ask students to follow them. This is the traditional teaching mode. "Teacher-centered" teaching mode usually shows that teachers do not leave books to inculcate professional knowledge, while students are totally passive to accept knowledge and blindly follow teachers to operate on the computer. The students trained under this teaching mode can not think independently, let alone exploring spirit and innovative thinking. Human learning process is interpreted as passive acceptance of external stimuli, while the task of teachers' is only to provide external stimuli, and the task of students' is to accept external stimuli. At present, Oracle database teaching in Colleges in China mainly adopts this mode.

It is easy for students to forget knowledge instilled by teachers under the traditional teaching model, and they will return it to teachers after the examination. When encountering more complex and difficult practical problems, students often feel helpless. How can we change this situation? On one hand, teachers should fully respect students' research instinct, and cultivate students' interest in learning, and encourage students to think positively, and inspire students to study independently, and encourage students to study relevant courses independently, and exercise their ability to raise and solve problems creatively; on the other hand, teachers should guide students to make full use of various resources such as network, library, literature database and so on, and find the information they need from a large amount of information, and find the way to solve the problem actively and spontaneously, and master professional skills to lay the foundation for future employment.

2. Constructing "Student-centered" Teaching Model

In 1952, the Harvard College of Education held an academic seminar on the theme "How classroom teaching affects human behavior", which was attended by many university professors, experts and scholars, officials of the educational administration, and principals and teachers from all over the United States. Carl R. Rogers (1902-1987), a famous psychologist, first put forward the idea of "student-centered" in his speech. From October 5 to 9, 1998, UNESCO convened the World Conference on Higher Education in Paris, which was attended by more than 4,000 representatives from the higher education, economic and governmental sectors of various countries. The theme of the conference was "Higher Education in the 21st Century: Prospects and Action". The Conference adopted a declaration with the same title as the theme: "Higher Education in the 21st Century:

Prospects and Action". "In today's rapidly changing world, higher education clearly needs a new perspective and model of "Student-centered"[2].

The "Student-centered" teaching model is an important concept in today's international teaching community. The basic principle of developing a student-centered teaching model is that teaching activities should induce students to learn independently, and enable students to grasp the initiative of learning, and stimulate students' creativity and spirit of exploring truth.

"Flipped Class Model" (or inverted classroom) is an example of an attempt to build a "student-centered" teaching model. The basic idea is to turn over the traditional learning process (teachers' lecture and students' listening), and to let the students complete self-learning for knowledge points and concepts in extracurricular time. The classroom becomes a place for interaction between teachers and students, and answering questions, and researching and discussing, so as to achieve better teaching results[3].

3. Research and Exploration of Case Teaching Method in Oracle Database Teaching

In the classroom teaching of Engineering specialty, case-based teaching method refers to a teaching method in which a teacher, through careful planning, based on some case by some media, presents a real and specific teaching event or a difficult situation to the learner, and guides the learner to observe, study and discuss, and cultivates the learner's ability to identify, analyze and solve a specific problem[4]. Case teaching method has the following advantages: 1) It can help students integrate theory with practice and combine theoretical knowledge with practical application; 2) It can mobilize students' learning enthusiasm and initiative, and guide them to participate in case discussion; 3) It can cultivate students' spirit of study and creativity, so as to improve students' comprehensive quality.

In Oracle database case teaching, teachers can take the development and implementation of a common and large case as a center, and introduce the basic theoretical knowledge points about Oracle database, and help students understand and consolidate them through computer practice; at the same time, based on the case, they can guide students to put forward questions on the basis of mastering these knowledge points and to use them to solve problems in practice so as to cultivate their practical and applied abilities.

During the teaching process of using case teaching method, teachers need to do well in the following three aspects.

1) Selection of cases

According to Oracle database syllabus, the teacher should choose a case which is familiar to students and can stimulate their enthusiasm for learning. In this paper the author chooses the student achievement management system as a case.

2) Demonstration, decomposition and discussion of cases[5]

Firstly, the teacher demonstrates the selected case as a whole so that students can understand the theoretical knowledge contained in the case as a whole and practical problems it can solve, and stimulate students' interest in learning; secondly, the teacher decomposes the case to make students understand the composition of the whole case and correspondence between the composition and the knowledge points in each chapter of the textbook; thirdly, the teacher explains each knowledge point in each chapter around the case; lastly, the teacher organizes students to discuss the case to deepen their understanding of the case, and to learn by analogy.

3) Summarize and operate on the computer

At the end of the discussion, the teacher should make a summary in time. After the summary, the students begin to operate on the computer. Then they can finish the relevant experiments purposefully and pertinently, and further understand the relationship between the case and the theoretical knowledge points in each chapter.

The operation flow chart of case teaching method is shown in Figure 1.

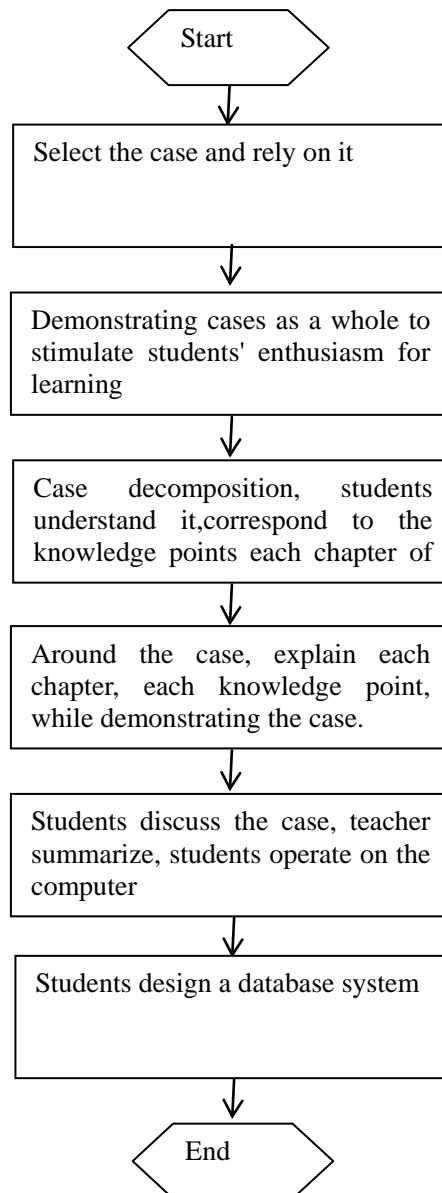


Fig. 1. Operational flow chart of case teaching method

4. The Practice of Case Teaching Method in Oracle Database Teaching under the "Student-centered" Teaching Model

The author tried to use case teaching method in teaching Oracle Database Application. In the first class, the author demonstrated the case of student achievement management system to students through multimedia, and introduced the main contents of each chapter they would learn and the method of using the case, which raising students' curiosity and interest, and told them that at the end of the course, every student was required to design a database system with these basic functions.

Later, when explaining each chapter and each knowledge point, the author would closely focus on and demonstrate this familiar case. For example, when the author talked about Chapter 3 "Creating and using tables", he demonstrated the whole process of creating student table, curriculum table, achievement table and teacher table; When the author talked about the fourth chapter "PL/SQL Foundation", he introduced table operation statements (creating, managing and deleting tables), and how to insert, modify and delete records through data manipulation language, and how to query tables by data query language (projecting, selecting, grouping, sorting).

The following describes how to use PL/SQL statements to create student tables, then add, modify, delete the table records, and finally query all columns of the student table.

*/*Create student table*/*

```

CREATE TABLE student
(
    sno char(6) NOT NULL PRIMARY KEY,    //Student Number, Primary Key
    sname char(8) NOT NULL,              //Student Name
    ssex char(2) NOT NULL,                //Student Sex
    sbirthday date NOT NULL,              //Student Birthday
    speciality char(12) NULL,             //Student Speciality
    sclass char(8) NULL,                  //Student Class
    tc number NULL                        //Student Total Credit
);
/*Insert a record into student table*/
INSERT INTO student VALUES('100001', 'Zhang San', 'M',
    TO_DATE('19980105','YYYYMMDD'), 'Computer Application', '20180102', 62);
/*Update student table, Changing the student number of Zhang San to '100002', Changing the
    speciality of Zhang San to Mathematics Major*/
UPDATE student SET sno='100002', speciality='Mathematics ' WHERE sname='Zhang San';
/*Delete the record with the student number '100002' from the student table*/
DELETE FROM student WHERE sno='100002';
/*Query all columns in the student table*/
SELECT * FROM student;

```

In this way, students can understand those knowledge points more easily and connect them, so as to understand the whole case finally. When all chapters are finished, a design task is arranged: each student is required to design a database system as part of the final examination.

5. Problems that should be paid attention to in the practice teaching process of Case Teaching Method

Combining with the author's experience in teaching practice, this paper talks about some problems that should be paid attention to in case teaching method.

1) Choose cases that are easy for students to understand.

If the teacher chooses a case that is difficult to understand, it is likely that in the early stage of learning, students are not stumped by the knowledge points of the course itself, but by the business need of the case, which will lead some students to give up learning because of lacking interest. Therefore, the teacher should choose a case that is easy to understand.

2) Integrate the knowledge points of each chapter into the case

The characteristic of case teaching method is to explain knowledge points around cases, so that students can learn knowledge points and master the application skills of knowledge points on the basis of understanding cases. Therefore, when explaining the knowledge points of each chapter, the teacher should not talk about theory in isolation, but should talk it together with cases.

3) Realize case teaching method under the "student-centered" teaching mode

This paper introduces the disadvantages of the traditional teaching mode from the beginning, and recommends the "student-centered" teaching mode. Because the main body of learning is the students, no matter how good the teaching method is, if the students can not become the main body of learning, everything is free from discussion. Therefore, in teaching practice, the teacher should try to stimulate students' interest, initiative and enthusiasm in learning, and try to make full use of the advantages of case teaching method, so that students can grasp and use the knowledge they have learned faster and better.

6. Conclusion

From 2017 to 2018, the author used the "student-centered" teaching mode in the teaching process of Oracle Database Application, and through the special case, effectively stimulated students'

interest in learning, and trained students' ability to think, to analyze and to solve problems independently. Practice has proved that if students become the main body of learning, case teaching method can really mobilize students' learning initiative, enthusiasm and creativity, and help students improve computer application ability, and improve the quality of teaching.

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