



Research on Classroom Teaching Quality Evaluation of “Database Principle and Application” Based on OBE Concept

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Abstract. Classroom teaching is the main way to cultivate talents in colleges and universities, and the evaluation of classroom teaching quality can urge the continuous improvement of teaching activities, play a positive guiding and motivating role to promote the continuous improvement of the quality of teaching and personnel training in colleges and universities. The principle and application of database is a hot spot in the current information age, and it also provides an effective supplement for information-based teaching.

Keywords: OBE concept · database principle · teaching quality

1 Introduction

The principle and application of database is one of the cores of the basic theory of information system, and it also provides necessary conditions for the development of information technology and computer technology in the future. In the traditional teaching mode, teachers carry out knowledge point instillation training for students through classroom lectures. This method not only fails to achieve the goal of cultivating talents required by the new curriculum reform, but also fails to make students have problems such as innovative thinking and ability improvement effects and effects; and the application of database principles can effectively improve the efficiency and quality of courses, thereby improving students' information application. Ability and overall quality.

2 Analysis of the Current Teaching Situation of the Course

Database Principle and Application Database theory and application is the core course of computer science and technology in the first-level discipline, and it is also an important part of software development, although on this basis, due to the transformation of the school and the need for engineering certification, a series of reforms have been carried out on this basis and it has been improved to some extent [1].

- (1) In the current teaching process, all teaching arrangements are based on pre-established teaching plans, ignoring the fundamental purpose of learning outcomes.

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- (2) The teaching content is mostly based on the same teaching material, with the teaching material as the core and knowledge as the leading factor. Teachers focus on teaching content and students focus on summarizing and sorting out the knowledge they have learned, while ignoring and lacking comprehensive practice and innovation for students' quality development.
- (3) Due to the single teaching method, focusing on the teacher as the center, so that students can complete their studies according to the teacher's requirements, which will not only affect their enthusiasm for learning, but also affect their independence, and also affect their ability, team spirit, which affects the cultivation of their abilities in all aspects.

3 The Course Reform and Practice of Database Principles and Applications Based on the OBE Concept

3.1 Determine the Teaching Objectives of the Course

On the basis of OBE education concept, establishing teaching purpose is the key to realizing OBE education. According to the needs of knowledge and skills of database talents, according to the characteristics of locality, application, service and internationalization of the school, and according to the teaching objectives of this major, a teaching plan for database principles and applications is formulated.

- (1) Understand the general database, understand the characteristics and advantages of various databases, understand some basic knowledge in the database, and be able to choose the appropriate database management system software according to the specific application situation.
- (2) Proficient in the use of database management systems, and can effectively solve the performance bottleneck of the database.
- (3) Understand and master the design method of database, can extract the relationship between database entities and entities from specific engineering requirements, standardize the design of the database, and optimize the database, thereby improving the quality of software development.

3.2 Building Curriculum Knowledge Modules

"Database Principles and Applications" is a subject major, which contains a large number of knowledge points. In order to complete the established teaching purpose within the limited school hours, the knowledge modules must be organically combined. At present, there are many classic textbooks on the market, some of which are more theoretical and some are more practical. Exploring and implementing new teaching methods of courses OBE theory believes that teaching should be student-oriented, pay attention to how to obtain good learning effects, and be closely related to teaching methods.

- (1) Project driven. This course selects two specific projects, namely Student Course Information Management and Factory Supply Parts Management to organize and

promote the teaching content, thus providing strong support for the realization of the course teaching objectives. In the implementation of the project, through the actual project operation, students' independent thinking is cultivated, and students' hands-on ability is cultivated.

- (2) Task-oriented. In order to enable students to better master their own knowledge and improve their learning efficiency, this course adopts an experiment-based teaching method, pre-arranging the content of some courses in research projects, and realizing it through discussions in class. In this way, it can effectively improve the teaching environment for students to passively listen to lectures and promote their active participation [5].

4 Assumptions for the Construction of the Evaluation Index System Based on Course Teaching Quality

4.1 Content Adjustment of Course Objectives

- (1) Before modification

Goal 1: Familiarize yourself with the history, research scope, and data model structure of the database; be familiar with the concept and operation of the database system;

Goal 2: Learn to use relational algebra, relational calculus, and the SQL structured query language to define, manipulate, and control database functions;

Goal 3: Be familiar with the six major processes of establishing a database management system, and be able to establish a simple database system (including database and database management system);

Goal 4: Master the theoretical knowledge related to database optimization, concurrency control, database restoration, etc., and evaluate and analyze the role and potential hazards of the database system in the entire life cycle.

- (2) After modification

Goal 1: Understand the basic concepts and foundations of databases, learn the preliminary design of relational algebra, relational calculus language and SQL structured query language, including data definition, manipulation and control;

Goal 2: Learn to use relational data theory to determine whether a design scheme is feasible, use E-R diagrams to build a data model that meets the requirements, and understand the entire design process;

Goal 3: In order to solve the design problem of the database system, consider the sustainable development of the database from the perspective of sustainable development, and provide an evaluation report for the design of the database system according to the relevant theories such as database optimization, concurrency control, and database recovery.

Table 1. The supporting relationship between course objectives and graduation requirements before and after modification (Owner-draw)

Graduation requirements	Graduation requirements index points	Original course objectives	After modification
Research	4 -2 Select the appropriate research route, determine the software and hardware model, build the prototype system, and design the feasible experimental scheme;	objective 3	objective 2
Tool using	5 - 2 Choose appropriate software and hardware development tools, experimental platforms, third-party resources and information technology to model, design and develop complex computer engineering problems;	objective 1, 2	objective 1
7. Environment and sustainable development	7 -2 Solutions and engineering practices for complex computer engineering problems, which can correctly analyze and evaluate their impact on environmental and social sustainable development;	objective 4	objective 3

4.2 Adjustment of the Supporting Relationship Between Curriculum Objectives and Graduation Requirements

Table 1 Supporting relationship between course objectives and graduation requirements

4.3 Course Objectives and Adjustment of Evaluation Basis

- (1) The ways to achieve the course objectives and the evaluation basis, as shown in Table 2.

Evaluation criteria: 30%: mainly composed of teaching, homework, discussion, experiment, case analysis, etc.; 70%.

Table 2. Table of ways to achieve course objectives and evaluation basis before modification (Owner-draw)

Assessment method and course	Homework (10%)	Experiment (10%)	Common F performance (10%)	inal (70%)	exam
objectives					
Objective 1	10/ 10%		10/ 10%	10/ 80%	
Objective 2	30/ 10%	60/ 10%	50/ 10%	35/ 70%	
Objective 3	50/ 10%	20/ 10%	30/ 10%	40/ 70%	
Objective 4	10/ 10%	20/ 10%	10/ 10%	15/60%	

5 The Specific Content of the Evaluation Index System of Course Teaching Quality

5.1 The Index System of Course Teaching Quality Evaluation

Curriculum teaching quality evaluation index system refers to the comprehensive evaluation of teachers' educational ability, classroom design and students' learning, and feedback the results to the evaluators to improve their overall level. In this study, the following dimensions are determined according to the curriculum standards and other scholars' opinions: Teaching methods and means are also used as one of the standards to measure their level [6].

5.2 Cultivation of Students' Comprehensive Ability

From the perspective of teachers, in terms of teaching content, attention should be paid to cultivating students' comprehensive literacy, such as analysis, problem-solving, and communication and cooperation abilities. After researching the standard requirements of this course and the actual situation of the classroom, it is found that: the first point is to pay attention to improving the autonomy and initiative of learners; the second point is to let them learn how to use the knowledge they have learned to solve problems in life and solve problems in life, actively participate in practical activities.

6 The Analysis of the Evaluation Results of Curriculum Teaching Quality

Through the comparison of the correspondence between course objectives and course content, it is found that the teaching contents corresponding to the four course objectives in the original course syllabus overlap. After the adjustment, the course objectives correspond to the three parts of the teaching content (basic, design, and system into the experimental content, and analyze the experimental results in multiple dimensions, which plays a vital role in improving the students' comprehensive ability.

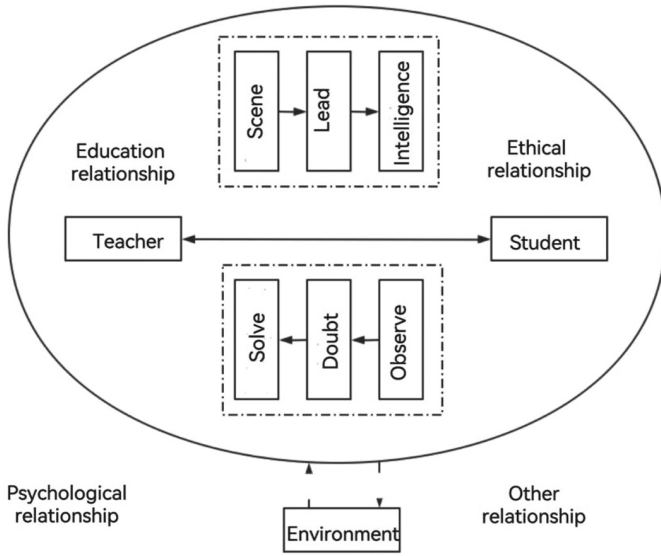


Fig. 1. The relationship between the three dimensions of teaching quality evaluation (The figure comes from Baidu) (Owner-draw)

7 Conclusion

To sum up, in view of a series of problems existing in the current teaching process of the Database Principles and Applications course, based on the OBE concept and the school’s orientation, the course has been reformed and practiced in the teaching mode, which has improved the students. It is a new type of vocational college with sustainable development ability. It adapts to the current transition period in our country and the needs of professional development of higher education certification, and is an important way to cultivate applied technological innovation talents (Fig. 1).

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