Research on Teaching Reform of Database Application Foundation Course Based on Process Assessment

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Abstract. For the database application basic course, there are problems such as outdated teaching methods and insufficient experimental hours. In order to cultivate college students' application practical ability, the students' enthusiasm and initiative are stimulated through the use of various teaching reform measures such as procedural assessment methods of examination by computer and in-class competition.

The Key to the Question

The database application basic course belongs to the university subject platform course, and the main teaching objective of the course is to cultivate the application practical ability of college students. In the actual teaching process, the course has problems such as outdated teaching methods, insufficient experimental time, and single assessment method.

In this course, students not only need to learn basic theoretical knowledge of database, but also need a lot of hands-on training combined with knowledge. As the total class hours of this course is 32, the original theoretical and experimental ratio is 1:1. In the actual teaching process, it is found that the experimental hours are very scarce. The lack of practical operation time for students will inevitably affect their understanding and mastery of knowledge points.

In the process of assessment, the method of "usual score + final score" was used to evaluate the final score of students. This kind of traditional assessment method for some students who are lack of enthusiasm and initiative will cause a bad study atmosphere of temporary shock. Learning is a dynamic and continuous process, and the proportion of final examination is too large to really reflect the whole process of students' learning. There are many researches on the reform of classroom teaching assessment methods [1].

In view of the above problems, after several years of teaching reform and practice, the database application basic course group has carried out bold reforms and attempts from various aspects such as teaching content, teaching methods and assessment methods, and achieved certain teaching effects.

Teaching Reform Exploration

Adjust the Proportion of Experimental Hours

In the teaching process, teachers and students generally reflect the problem of insufficient experimental time. Under the premise of constant school hours, the course group adjusted the theoretical and experimental hours to 12 and 20. The theoretical and experimental time ratio is adjusted from the original 1:1 to 3:5. The number of experimental hours is four more hours. In the original experimental teaching session, 8 experimental tasks were opened, and 10 experiments were opened after adjustment. The experimental tasks were further refined, the teaching objectives were clarified, and the focus of the experiment was highlighted.

Adding Machine Test Links to Assist in Process Teaching

Emphasis on the evaluation of students' learning effect and teacher's teaching situation in stages throughout the teaching process is an important measure to implement distributed teaching and

ensure the quality of teaching [2]. At present, most computer courses in colleges and universities use computer-based examinations to assess student performance. There are also many researches and practices in this area in China [3].

The experimental teaching link of this course puts forward the reform idea of "taking the test to practice and practice to promote the test." In the specific implementation process, around the course knowledge points, the course group has developed detailed experimental tasks and assessment plans. Through the computer-based test system provided by the school, reasonable computer test exercises and test plans are set for each experiment. Decompose each experimental class into: "teacher explanation + student practice + difficult question answer + machine test." In addition to the first familiarity with the experimental environment, the remaining nine experimental classes were assigned to the hands-on exercises and machine test tests. At the end of each lab session, students were able to intuitively understand the results of their own tests on this class. The test paper analysis provided by the computer test system, students can further understand their actual knowledge of each knowledge point. Similarly, the instructor can also use the computer-based test results to understand and master the overall teaching effect of each class.

According to humanistic teaching theory, students are the main body in the teaching process. Only by arousing students' learning enthusiasm can the teaching process achieve good results [4]. In the process of implementation, the curriculum group has greatly stimulated the enthusiasm and initiative of students' learning through the reform idea of "substituting examination for practice and promoting examination by practice." In the past, the phenomenon of slack work and free rambling in experimental class has been completely eliminated. The students are very engaged in class and focus on the experimental tasks. Everyone completed the experiment very seriously and formed a good learning atmosphere.

Add Competition Links to Stimulate Students' Interest in Learning

Since 2017, the course team has put forward the idea of internal competition of the course based on the characteristics of the course. In the experiment teaching, we set up two or three course competitions by using the computer examination platform. According to the results of each competition in class, the students' competition scores are ranked. The top three students in each class are encouraged by the excellent award. The winners have a strong sense of honor, and the students who don't win the prize also inspire their learning motivation. It improves the students' self-confidence, makes them realize that they can do better, have more confidence to learn, and forms a good virtuous circle.

The Machine Test Link Promotes the Process Evaluation

The reform of the examination method is an important part of the reform of higher education teaching [5]. Through process assessment, students can truly understand the meaning of learning knowledge, stimulate students' interest in learning knowledge, and change students' learning habits [6].

To establish an exam is the concept of a dynamic process. The assessment is not a two-hour final exam. It should be a dynamic monitoring process for students' learning status, learning outcomes and completion of learning objectives. It is necessary to provide timely warning and feedback to students who do not meet the learning requirements in order to realize the overall self of the students' improvement [7]. Break the arbitrariness of traditional examinations and improve the passing rate of examinations. The traditional assessment method is too arbitrary, and it is determined by a single final exam whether the student can finally pass the course assessment too arbitrarily [8]. It does not really reflect the student's learning process. The purpose of the course-based assessment is to promote "learning" by "examination" and "teaching" by "examination," to achieve comprehensive and coordinated development of students' knowledge, ability and quality, and to improve students' comprehensive quality and innovative ability [9].

The evaluation method for most courses in colleges and universities is "final grade = usual grade + final grade." The final ratio is 60% to 70%. The procedural assessment is to give the students about

60%~70% of the total scores. The assessment of these scores is based on the students' various performances to achieve the purpose of stimulating students' enthusiasm for learning [10]. The course group further carried out the reform of the process assessment based on the implementation of the experimental machine test. In combination with the student's computer test, attendance, homework, comprehensive testing and other indicators, a process evaluation and evaluation method was formulated, and the proportion of the final assessment was adjusted to 20%. The specific assessment methods are as follows:

Table 1. Process Evaluation Method.

| student | 80% of the usual assessment | | | Final assessment 20% | Overall result |
	Attendance 5%	Homework 5%	Phased test 70%	Comprehensive ability test 20%	
A	80	80	85	90	85.5
B	80	80	70	85	74

As can be seen from the data in the above Table, the impact of the student's phase test on the final grade is obvious, indicating the importance of the phased test. Therefore, from the ideological point of view to eliminate the student's chance to take the test, comprehensively deepen the content of the assessment, feedback the assessment results in a timely manner, promote the adjustment of teaching methods, and form a good teaching style and style of study [11].

We took the second stage test scores (C01, C02) of the two grades of the plant 2017 class of the Agriculture and Animal Husbandry College before the teaching reform and the implementation of the teaching reform, and the data of the intermediate test (Z01) and the final test score (Z02). Conduct a comparative analysis, as shown in Fig. 1:
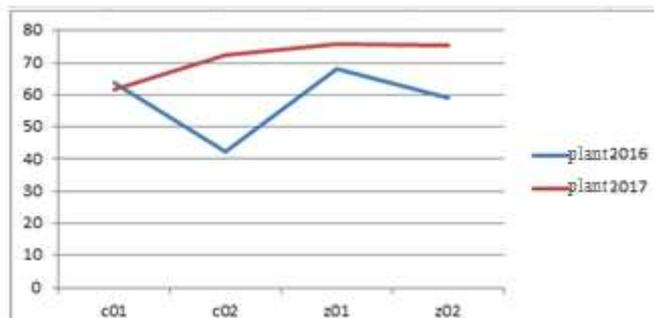

Figure 1. Comparison of Student Achievement before and after Teaching Reform.

In the comparison of the results of the two-level students in the same major, the results of the plant 2017 class in the initial scores of the plant 2017 and the plant 2016 were slightly lower than those of the plant 2016 class. However, after the course group conducted a series of teaching reform measures such as in-class competition, experimental class adjustment, and improvement of the classroom environment during the course of the 2017 class, the results of the 2017 class of the plant showed a steady upward trend, and finally the two classes of students The results have opened a big gap. The impact of the teaching reform on the student's academic performance before and after the reform is very obvious.

Conclusion

The database application foundation course has achieved certain teaching effects through teaching reform and practice in recent years. The passing rate and excellent rate of the course have increased year by year. The implementation of procedural assessment has greatly improved the teaching effect of the experimental links. In particular, the reform of the process evaluation method has played a good role in demonstrating the reform of other computer public foundation courses.

Although the process-based teaching reform of the database application foundation course has achieved certain results, it needs to be further improved. In the next step of the course construction work, the course group will focus on the mining of student learning process data, automatic early warning of student learning process, and student-level teaching. Further research and research are carried out in other aspects.

Acknowledgement

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