

Research and Design of Oracle Experimental Teaching Course in Private Colleges and Universities

Zhu Rongzhao & Xu Jia

1. School of Computer and Information Engineering, Hubei University, Wuhan, Hubei, China

2. School of Computer Science, Wuhan Qingchuan College, Wuhan, Hubei, China

ABSTRACT. Taking the advanced design course Oracle experiment of the computer science of the non-government-run colleges as the research object, this paper mainly discusses the design features of the experiment course of computer science of the non-government-run colleges and universities. Practical computer talents with professional difficulty and practical ability are designed according to the ability of the computer majors of the non-government-run colleges and universities.

Keywords: Oracle, experimental curriculum design of the non-government-run, colleges and universities, practical computer talents

1. Introduction

Practical teaching is the need of the social development. With the continuous development of the society and the rapid upgrading of science and technology, the measurement and the value of the talents in all walks of life are undoubtedly changing. With the progress of science and technology and the modernization of commodity production, the practical ability and comprehensive quality of the social labor force will inevitably face higher requirements. The employing unit will no longer rely on a diploma for the choice of the labor force but on whether they have practical operational ability. For a long time, our education system value theory and neglect practice, which leads to lack of attention to the teaching and training of the

college students' practical skills by the colleges and universities, so we are short of talents both with technological innovation and competitiveness in the international market. With the increasingly deepening of China's reform and the constant expansion of the opening-up, the society is in urgent need of technology-applying-oriented talents at the production line in the field of production, construction, management and service and so on. Therefore, it is necessary to develop the students' manipulative ability and innovation ability and carry out the reform of teaching method which emphasizes practical operational ability .

The traditional teaching method and the experimental mode of the computer courses are mostly teaching first and then the students conduct experiments online. The teaching form of the experiment course is single. The students mostly passively receive the knowledge and the skills in the process of the class, which prohibits the students' initiative and the creativity, so the students have little interest in learning. Therefore, on the basis of the questionnaire on degree of satisfaction about the class teaching and the experimental teaching method, we put forward the teaching method reform of the "integration of teaching, learning and practice", putting the teaching content and the actual operational content of the students online, project teaching and task-driving acting as the main teaching method. The cultivation of the students' application ability is based on the principle of learning for using and teaching and learning fostering each other. This kind of positive interaction has provided teachers and students with more space for thinking and new area for practice, and has fully mobilized their enthusiasm, initiative and consciousness in learning. At the same time, it has greatly improved the learning efficiency.

The database technology of computer is one of the most important applications of the modern information society. It has achieved rapid developments and applications over the past decade. The purpose of setting up the course of Large-scale Database and Its Application (Oracle) is to enable the students to have a preliminary understanding of the basic functions of ORACLE through the actual operation in the large-scale database design software, ORACLE, when they study the course, and to master the basic operational commands and techniques of SQL*PLUS through the simple use of it and to deepen the students' understanding and mastery of SQL * PLU and PL/SQL technology and further lay a solid foundation for the practical application involving more difficulty in the future

through the use of PL/ SQL programming language and the analysis of programming design. Through the study and use of the commonly used tools of oracle, the management and application of large-scale oracle database are understood, which lays a solid foundation for the future work of DBA. In a word, through the above-mentioned experimental segment, the students can better understand and master the content required by the syllabus of the course of the "Large-scale Database and Application (Oracle)" .

2. Design Ideas of the Curriculum

Based on the course background of project design and relying on the process of project design and R & D, Oracle course brings together the knowledge about the application of large-scale database software, especially the most mainstream relational database-Oracle database application, truly making a real leap from learning to using.

Oracle course is mainly experimental course. The main content of teaching is divided into 5 lectures, and each lecture covers one aspect of oracle database. The practical characteristics of this course is rather strong, which requires students to master the relevant knowledge of Oracle database in practical operation. Therefore, the courses are mainly arranged in the computer room. Theories being taught in the computer room, teachers present practical demonstration in class and students operate on the actual software at the same time, strengthening the degree of close integration of the theoretical learning and practical on-machine operation.

The main teaching method of the course: This course is a purely practical course, so the first choice is to teach in the multimedia classroom and in the computer room so that the teacher can make the students see the effect of the design immediately via a number of demonstrations to achieve the basic learning effect. Teachers need to carefully design examples, which are guided by teachers and strictly in accordance with the various steps of software research and development, letting students gradually deeply study the software design and finally achieving the goal of independent design.

The experimental course must be implemented with specific development tools. It is recommended to choose the latest version of Oracle installed on Windows,

Oracle Database Oracle 11g R2, which is convenient in operation and installation . Guided by the teacher, mastered by students through self-teaching, the basic SQL database language in SOL/PLUS is mainly used, which is easy to learn and quick to get started and suitable for short-term database application course teaching requirements on the basis that the students have systematically studied the basic theory of the database.

In the design of the teaching, attention should be shifted from knowledge dissemination to student development, and from the teaching content chosen by the teachers to the learning method of the students guided by the teachers. If a new breakthrough is to be made in the teaching method, efforts should be made in the design of the class.

1. Segment of problem introduction

It is similar to situational design. The knowledge point of the software is often a problem. Of course, the understanding of the problem should be a bit deeper, and the problem can not just be "introduced", but we need the "problem-driven" software teaching to solve problems all the time.

2. Segment of teacher-student interaction

In class, it is a very good way of interaction that the teacher asks questions, some students answer, somebody else supplements, and the teacher corrects. This kind of training is extremely important and effective, and it is extremely easy to stimulate students' interest in learning and learning initiative. The whole teaching process is carefully designed by the teacher, a segment after another, so that students can easily achieve the intended goal step by step.

3. Segment of classroom experiment

In the experiment in class, the teacher puts forward the purpose of the experiment and the students discuss in groups so that the students' ability to solve problems and spirit of team cooperation can be cultivated. The independent completion of the experimental content by the students is also a way of training the application of theoretical knowledge to practice. Driven by the principle of learning for practice, the students will have a deeper understanding of the knowledge learned in class and more easily digest the knowledge they have learned and draw inferences

from it.

The objective of this course is to test the students' development ability to use the software Oracle, to develop and use database data by using SQL language and to develop practical database, and to test their comprehensive ability to solve practical problems by flexibly using the learned knowledge, methods and techniques . In principle, assessment should stick to the principle of emphasizing application ability and innovation ability. In the process of assessment, we should insist on reflecting students' innovative ability and practical application ability and measuring students' achievement by their ability.

This course is assessed according to the percentile system. The overall score of the course is 100 points, in which the usual performance of Oracle experiment makes up 40% and the performance of practice or skills accounts for 60%. (Listable)

Composition of curriculum comprehensive performance		Percentage of scores
the usual performance of Oracle experiment	Cardboard experiment report	40%
	Experimental on-line operation	
Performance of practice or skills of Oracle	Practical on-line examination	60%
Total		100%

3. The effect of Curriculum Reform

Since its beginning in 2012 in Wuhan Qingchuan College, the large-scale database oracle experiment course has been unanimously praised by the majority of computer majors. The course is mainly arranged in the first semester for the seniors, who are about to graduate, being confused about the prospect of employment. Therefore, the curriculum is arranged and designed aiming at all kinds of problems encountered by students in the process of employment. It is targeted teaching. The design of it mainly emphasizes the practical ability of students . In the process of knowledge dissemination, the attention has been transformed from the traditional interpretation of knowledge points to the cultivation of practical operation ability and professional ability before work so that students can quickly master the ability of software research and development in a shorter time to improve their employment

rate .

Through six years' practice, it has been proved that a new direction of change in the practice course of computer science in private colleges is to distinguish the training of undergraduates in private universities from that in ordinary colleges and universities. It breaks the old routine of laying stress on advancing in regular order and accumulating in the traditional teaching, but aims to improve one's knowledge level and operation ability in the course of completing an experimental "project". We put forward the teaching method reform of the "integration of teaching, learning and practice", putting the teaching content and the actual operational content of the students online, taking the project teaching and task-driving as the main teaching method. The cultivation of the students' application ability is based on the principle of learning for using and teaching and learning fostering each other. This kind of positive interaction has provided teachers and students with more space for thinking and new area for practice, and has fully mobilized their enthusiasm, initiative and consciousness in learning. At the same time, it has greatly improved the learning efficiency. The various forms of teaching modes embody the student-centered teaching thought and highlight the teaching concept of taking practical operation as the goal. At the same time, the assessment method has strengthened the process examination and the skill examination, which has both functions of "supervising learning" and "supervising teaching".

Reference Documentation

- [1] Gu Changyong, Wang Bin, Chen Jie etc.(2008). ORACLE 11g Authoritative Guide Electronic Industry Press, 2008.
- [2] Sam R. Alapati, Charles Kim[American], translated by Zhong Ming, Wang Jun etc. (2009). New Features of Oracle Database Management Art 11g, People's Post and Telecommunications Press.
- [3] Antonini (Christian Antognini)[Switzerland], translated by Tong Jiawang, Hu Yiwen, Feng Dahui(2009). the Art of Oracle Performance Diagnosis People's Post and Telecommunications Press.
- [4] Liu Ronghua, Zhang Yang, Nie Song, Zou Chen(2005). Oracle Database Management and Application System Development, people's Post and Telecommunications Press.

- [5] K [American], translated by Zhang Lihao, Yin Zhijun(2006). Oracle Database 10g Complete Reference Manual Tsinghua University Press.
- [6] S,by Li Bingyang(2010). cribbling Oracle-- Learning Oracle Step by Step from Think-twice Notes, China Water Power Press.
- [7] Lu Tao, Liang Jingbin, etc(2011).Breaking the Iceberg---the Open Art of Oracle, Electronic Industry Press.