Bilingual Education Research of Database System

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Abstract. "Database System and Application" is a core course of Information Management and Information Systems speciality at the Beijing Institute of Graphic Communication. This course included these contents: Relational data model theory, Database analysis and design, SQL, Database recovery and Database security. The course is basic knowledge of Information system. So, the education quality of this course is related to the education quality of professional courses. Instructor not only focused on knowledge but professional ability train. This paper mainly presented the bilingual education experiences of this course. The paper firstly introduced the challenges bilingual Education of this course. The paper mainly presented practicing bilingual education from three aspects: Selecting textbooks, Reforming Examination Style and Teaching methods. Thirdly, the paper evaluated teaching works of Database System. Finally, the paper summarized the problems in teaching practice and introduced future work.

Introduction

With the rapid development of China's economy, the talent of English ability is getting higher and higher. Beijing Institute of Graphic Communication specially trained talented person of publishing industry in china. The School of Economics and Management was launched by the Beijing Institute of Graphic Communication in September 1990[1].At present, it offered five specialities: Marketing speciality; Information Management and Information System speciality; Financial Management speciality; Logistics Management speciality and Cultural Industry speciality. Database System is a core course of information management and Information system speciality. Beijing Institute of Graphic Communication improved education quality to international advanced level. So, Database System transformed the bilingual course in 2014.

Section 2 introduced the challenges of bilingual education. Section 3 presented implement of bilingual education. At last, some conclusions and future works is introduced.

The Challenges of Bilingual Education

The Lower Level of English Ability

The English ability of undergraduate students is relatively low because the Beijing Institute of Graphic Communication isn't key university. The students learned "Database System and Application" in the third semester. Students have been studying college English for one year. They have recorded four thousand English words and have initially read papers in English. They aren't familiar with science glossary and professional knowledge. So they lacked of confidence to study bilingual education. During bilingual education of database system, the instructor must improve learning interest and teaching science vocabulary.

The Relationship between the Content and Teaching in English

Students not only mastered the basic knowledge of the database, but also learned the corresponding
English during studying course of Database System and Application. In order to improve learning confidence, the first lesson teaches in English and the subsequent lessons constantly increased English content. In the latter semester, the instructor provided English documenters in advance and assisted students to learning English papers after class, which can help students overcome unintelligible knowledge. Throughout the learning process, the students are concerned body. The instructor adjusted content according to professional knowledge and science English level of students. The instructor must pay attention to relationship between teaching content and English learning during overall learning process.

**Instructors Training**

Instructors considered as the core of bilingual teaching, bilingual teaching requires both professional knowledge and good English oral ability. Instructors should continuously improve their oral English and writing skills training. It is a good way that instructors go to abroad to accept foreign professional courses teaching.

**Practicing Bilingual Education of Database System and Application**

**Selecting Textbooks**

Database System has many classic textbooks and papers in abroad and domestic. Foreign textbooks have abundant contents. Each knowledge point description is very clear. But students saw the textbook with thousands of pages, they usually want to avoiding learning. Another shortcoming of foreign textbook is that content somewhat differed from domestic content. It is difficult for students to learn classic papers for the following reasons. Firstly, students simply learned some basic professional knowledge of information management and information system speciality and firstly learned Database System knowledge. They haven't complete theoretical structure and many science glossaries. Reading papers' difficulty more than reading textbook. Secondly, paper focused on the specific item. The content of the paper is the most advance knowledge; the general teacher understood the content. Students usually don't learn these knowledge lead to learning interesting. Finally, writing style of paper different from textbook. Student only read textbook before Database System course. So, papers didn't adapt the bilingual learning context. At present, the choice of textbook is still the bottleneck of our bilingual curriculum.

The textbook of Database System and Application in 2016 curriculum adopted the domestic classic textbook-"Introduction to Database System" by Shang Wang, which is a National-level quality Course. It is the textbook of National Computer Rank Examination that is important test of undergraduate students. It is also the textbook of Computer Technology and Software Expertise (level) Qualification Examination which is the national computer and software professional and technical personnel for vocational qualifications, professional and technical qualification and professional and technical level testing. The textbook has a teaching website that has many database system resources. The textbook exercises solution is also published by Higher Education Press. These resources helped teachers to better lectures and students to learn myself. At the same time, the instructor also selected the foreign classic textbook- Database System Concepts (Sixth Edition). The Chinese version of the textbook specifically wrote undergraduate version. The content of the textbook is consistent with "Introduction to Database System". Original English version of this textbook published in China. The instructor copied some knowledge to students according to learning content difficulty and learning schedule. Students firstly learned database system knowledge in Chinese. Later students read in English and mastered this knowledge.

**Reforming Examination Style**

"Database System and Application" is used closed book exam in final examination from 2004. Final examination results for the total score of 70%.Attendance, homework, experiment and student participation is reflected in the total score of 30%.Core curriculum began to use monthly examination
style in School of Economics and Management from 2015-2016 autumn semester. Monthly examination mainly checked learning content of month. Assessment forms are closed book exam and semi closed book exam. Taking into account bilingual teaching requirement, I examined a number of science vocabulary and science English in each monthly exam. Score of English ability still need to be adjusted constantly.

**Teaching Methods**

This lecture used a small class that class size does not exceed 35. During the teaching process, the students highly involved. And he students actively communicate with the teachers. The teacher's vision covered the whole class to master all students learning level.

Because Database System is very complex, bilingual teaching has self-character. It is important that used compatible pedagogical methods. In order to increase practice ability, self-study ability and innovation ability of students, the instructor have adopted a variety of pedagogical methods in the actual teaching process. These methods mobilize initiative and enthusiasm of students to learn knowledge and encourage the students to independently think. For example, a problem-based learning approach, cooperative learning approach and case study approach[2].

Problem-based learning is an instructional method that is said to provide students with knowledge suitable for problem solving [3]. A cooperative learning is an instructional technique that requires students to work together in small, fixed groups on a structured learning task [4]. Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances [5].

**Evaluation**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Satisfaction</th>
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<tbody>
<tr>
<td>This course has helped my understanding of the theoretical knowledge</td>
<td>95%</td>
</tr>
<tr>
<td>This course has helped my application ability of science english</td>
<td>85%</td>
</tr>
<tr>
<td>This course has helped my practical hand-on ability</td>
<td>90%</td>
</tr>
<tr>
<td>This course has educated independent thinking ability</td>
<td>90%</td>
</tr>
<tr>
<td>The number of class hours arrange reasonable.</td>
<td>95%</td>
</tr>
<tr>
<td>Experimentations improved my practical hand-on ability</td>
<td>90%</td>
</tr>
<tr>
<td>The Comprehensive Experimentations arranged reasonable and effective.</td>
<td>85%</td>
</tr>
<tr>
<td>This course has helped my ability to work in groups.</td>
<td>95%</td>
</tr>
<tr>
<td>The course was well organized and effective.</td>
<td>95%</td>
</tr>
<tr>
<td>This course has helped my understanding of the theoretical knowledge</td>
<td>90%</td>
</tr>
</tbody>
</table>

Because Database System rapidly developed and Database System is widely used in various industries, Database System teaching has taken on an increasingly important significance and prominence. A key requirement is to culture students' application ability of database and science English. To achieve this assessment, an evaluative questionnaire is developed and given to the students. The results from this questionnaire are presented in table 1 in which students were asked to score each question in the range of 0 to 100 and where the satisfaction level is an average of these scores for each question. A maximum score given by all students for a given question would result in a satisfaction level of 100% for that question. Comparative satisfaction exhibited in this questionnaire. Students acknowledge that database and program language courses improve computer courses with the highest score. Students have also generally acknowledged that the courses arrangement is reasonable and the courses have helped understanding of Database System theory and application ability of science English. Similarly, students acknowledge that the experimentations arranged effective and improved practical hand-on ability. Finally, the courses have assisted the students in being able to work in groups.
Summary
With computer and communication rapid development, computer technology are applied every industry. On the other hand, students are demanded high computer technology by the enterprise. Database technology is an important computer technology. At the same time, international communion required science English. So, it is important to find effectively cultivating two aspects abilities. This paper described bilingual computer course information of information management and Information system speciality at the Beijing Institute of Graphic Communication, Beijing, China. Some questions existed teaching process. The paper also introduces several effective pedagogical methods to improve teaching quality and students' learning interesting. A formal evaluation has been carried out and demonstrated a very effective and realistic learning experience for the students.

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References