MEDWELL PUBLISHING
The Social Sciences 4 (1): 133-138, 2009
ISSN: 1818-5800

Analysis and Practice on Collegiate Bilingual (English-Chinese) Courses: A Study in a Developing Minority Autonomous Region

Liu Haiyan, Wang Qiang, Fu Zeping and Wen Binghai
College of Computer Science and Information Engineering, Guangxi Normal University,
No. 15 Yu Cai Rd, Guilin 541004, P.R. China

Abstract: Basing on experiment and practice, bilingual teaching practice carried out for students majored in information systems in a university located in Guangxi-a Zhuang minority autonomous province in China is introduced. Key factors involving learning efficiency are discussed and analyzed. Three questions regarding learning, teaching and electronic resources were probed and analyzed based on collected data. An improved approach to enhance the efficiency of bilingual teaching and learning for colleges located in developing regions are brought forward. Some conclusions and implications are also derived from the analysis.

Key words: Bilingual learning environment, learning model, web resource, efficiency evaluation

INTRODUCTION

China is experiencing a rapid economic development period. The fast changing environment puts new requirements and challenge on the education system of the country, among which bilingual teaching is one of the new requirements to colleges around the country. As a developing province in China, Guangxi is also facing the questions such as how to teach its collegiate students through bilingual means and how to enhance their competitive capabilities in the gradually opening market system. Due to the limitations on geographical location, financial strength and social development level and with large population of minority ethic people (37%), colleges in the province face more difficulties in carrying out bilingual teaching comparing with those located in economically well developed regions. This article introduces an approach that has been practiced through a period of 3 years in a systematical way for the same group of 37 college students.

Relevant studies: Many researchers focused their studies on teaching and learning models, communication barriers, learning environment and so on in order to improve the quality of bilingual teaching and learning efficiency. For example, Jackson (2004) analyzed the perceptions about the value of case-based bilingual teaching regarding teaching problems they experienced using cases in Hong Kong. Lee and Frado (1996) and Kubota (2003) found that an teacher-student interaction suggests that culturally congruent communication patterns, class and race are important in promoting student participation and engagement. Liang and Mohan (2003) noticed in her study that the ideal goals that are claimed for cooperative learning may involve dilemmas between L1 maintenance and L2 development, between the use of L1 and L2 in academic discourse and between the use of the L1 and L2 for the learning of content. Jackson (2003) provided result from a survey and interviews which suggested the direction for an ESP business communications course and highlighted the need for culture and context-specific preparation for case leaders and students. Yalin *et al.* (2004), Juan (2004) and Zhiguo and Ling (2005) introduced teaching models and problems they used and encountered in bilingual teaching in college level courses. These studies provide us with useful ideals on some important aspects regarding bilingual education either on learning side or teaching side. However, our research has its own unique feathers which are different from the studies mentioned above. Therefore, our research needs to focus on probing a useful approach that meets the needs of collegiate bilingual education in less developed regions.

Challenges the social and economic development brings to the region: Since, the beginning of the new millennium, the free economic zone of China and South-East Asian Countries was set up and the development of another economic zone, Bei Bu Bay free trade zone, was also approved by Chinese government. The set-up of these

Corresponding Author: Liu Haiyan, College of Computer Science and Information Engineering, Guangxi Normal University, No. 15 Yu Cai Rd, Guilin 541004, P.R. China

two economic zones, to which Guangxi is the closest province in China, brings lots of opportunities to the region. The rapid social and economic change leads to huge demand on technical labor force that has both needed technical knowledge and good English skills.

Bilingual teaching project in the school: The Education Department of China issued policy on bilingual teaching for colleges around the nation in 2001, in which majors related to law, biology and information technology are required to offer bilingual courses not less than 10% of the total credits for graduation. Information system major in our university falls in the range. Bilingual teaching project for this major was recommended and started in 2005 in the university. Teachers with good English skills were hired for the Department of Information System. Measures for strengthening students English capability were put into practice. Bilingual teaching practice was started in 2006 and six bilingual courses were taught for the same group of students by the end of June 2008.

MATERIALS AND METHODS

Research questions: Based on the situation described above, 3 key questions which are important for bilingual teaching in colleges in developing areas guide this research project: What would be the learning difficulties from learning side under the learning environment and learning model designed for the project? Would the quality of lecturing meet the demand of bilingual teaching? What is a workable and convenient method for efficiency evaluation of web resources?

Conditions the research project based on: In order to get comparable results for the three questions, following conditions were set up: a group of 37 students enrolled for information system major in 2005 were selected for the research project; 6 bilingual courses were taught through three consecutive semesters and 25% of the students in the group have minority ethnic background.

Measures and approach used in the project are carefully planed and designed. The objective is to make sure the learning goals are achieved while the teaching approach and quality control means are flexibly applied throughout the process.

Principle for the selection of bilingual courses: As a research project, the package of courses selected should follow certain principle. The outcome should meet the requirements specified in the course outlines, help students build up knowledge described in the text book as well as meet the requirement on knowledge structure required by the major. Therefore, 6 courses were chosen to form the package, among them electronic commerce and organizational behavior are main courses while IT strategy, information system for businesses, human resource management and business negotiation are selective courses for the major.

Teaching and learning environment structuring: To make sure that the teaching process could gain an acceptable outcome, a teaching and learning environment was set up as shown in Fig. 1.

The environment created for the teaching and learning efficiency consists of seven elements which collectively contribute to the acceptable outcome. The process starts with planning and ends with assessment and evaluation in a deliverable way.

According to Fig. 1, although the elements shown are apparently independent from each other, there is a strong deliverable function existing among them. The aim for each element is to make contribution to the course outcome.

Learning model used in practice: A value-added learning model as shown in the Fig. 2 was created and used in bilingual courses.

The model is mainly composed of two parts: theoretical teaching and experiment. Theoretical teaching based on bilingual means involves with enlightening, discussion, interaction and case study on course knowledge as shown in Fig. 2 and experiment based on Chinese language focuses on hands-on and operational experience.

As shown in Fig. 2, the model consists of different variables which may influence the outcome positively or negatively. Here are the roles of some important variables.

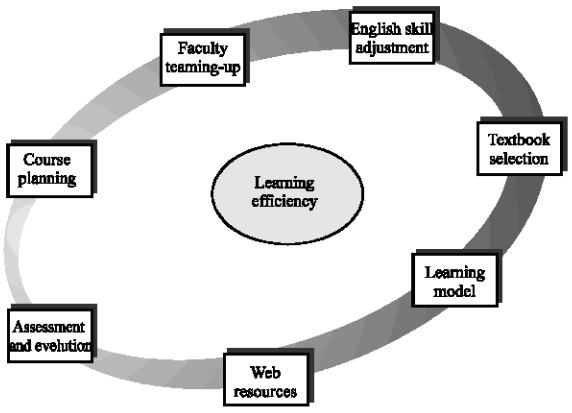

Fig. 1: Teaching and learning environment

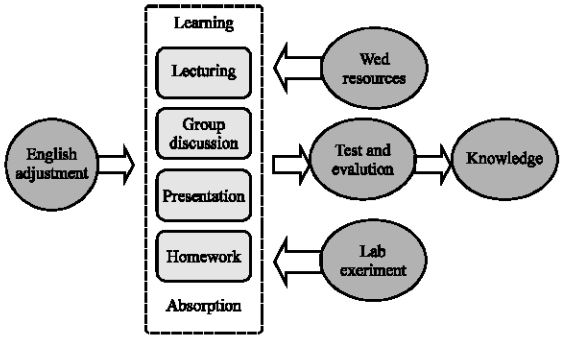

Fig. 2: Value-added learning model

Group discussion: Includes discussion on cases and important concepts. Students are allowed to use either English or Chinese to explain their understanding toward the textbook and cases. Teamwork skills are also counted in the final score.

Class presentation: Conclusions reached by group members are presented in English in classroom so that mutual learning among different groups can be realized and misunderstanding on some concepts and principles happened on learning side can be captured and corrected by teacher.

Electronic learning forum: All students are required to join the discussion in the forum offered in the course website which provides an interactive space to teachers and students for discussion and communication concerning the knowledge explained in the textbook.

Requirement on teachers: Teachers play a key role in the whole teaching and learning system. They not only teach students knowledge based on textbooks, but control the elements mentioned above also. During the process, teachers need to make adjustment or reinforcement in the elements shown in Fig. 1 and 2 in order to reach the goal set forth in the course outlines. Due to the difference in nature of the courses offered, major efforts may have to be put in certain elements varied from course to course.

RESULTS AND DISCUSSION

Six bilingual courses were taught for the same group of 37 students in consecutive 3 semesters based on the environment structuring and model shown above. During the process, data were collected from students, teachers and administration staff in order to find out answers to the three questions raised in study. Questionnaires based on research questions were distributed to 37 students at the end of each bilingual course for a statistic analysis.

Table1: Perception of students on learning difficulty in class period

Comprehension	Understand and digest of the principles and concepts in classes (%)	Comprehension when the courses are lectured in English (%)
All	8	36
Most part	65	34
Major content	27	28
little	0	2

Analysis of difficulties on learning side: About 25% of students took part in this project have minority ethnic background. Students with minority ethnic background generally do not have good English skills comparing with students who are majority Han ethnic. To narrow the gap between these two groups of students, a step which is called English Skill Adjustment was put into practice, in which all students were required to finish the course of English for the Major. Through this step, students could learn the terms related to the major and structure of complex English sentences and have their English skills being reinforced.

Table 1 shows the perception of knowledge comprehension on the learning side when the lectures were completely given in English under the learning environment and model designed for the project.

It is obvious that about 70% of the students do not have major difficulty in learning with English in this case, while about 30% of them have difficulty in listening comprehension and understanding of some complex principles. This is something that reasonable for non-native speakers of English.

The second column in the Table 1 indicates that 8% of the students who belong to the 70% could digest the principles and concepts easily while 65% of the percentage of students had to put more time in the off-class period to digest the knowledge. The third column shows that 36% of the 70% students could completely get what the teacher is talking in English while the other 34% could understand most part of the lecturing in English, which means that they need more efforts in off-class periods in order to digest the knowledge.

Students, who belong to the 30% said that they had to rely heavily on activities such as group discussion and posting questions in learning forum of the website to catch up with the courses. Most of them said that they managed to reach the goal for the course although they had to put much more efforts than other students. They also said that it is hard to image the result if English skill adjustment, group discussion and learning forum were not involved in the project. The feedback from students indicates how important those learning environments are and what role the learning resources played.

Almost one third of the students had difficulty in learning, mainly due to their English foundation. This

result also implies that the teaching and learning quality of courses such as college English 1 and 2 should be reinforced during the first and second school years.

Another phenomenon noticed is the teaching means applied throughout the project, for example, posting the Chinese reference for some terms and principles on screen, requiring students referring to resources in the website, distributing guidance for discussions and presentation to students and pro-describing cases for study. Students indicated that these means gave them good help and hints on correct understanding and completing the assignments.

Some of the students also said that part of the difficulty they encounter is not from the language weakness but the knowledge itself. In this case, relevant principles or knowledge in Chinese were provided to students for reference in photocopies and electronic documents in websites together with detailed class explanation. Comparing with language problems, this is much easier to be dealt with.

Table 2 shows the student perception on the difficulty of comprehension through learning in English. Result shows that almost 40% students had to spend much more time and efforts to digest and absorb the knowledge in English than learning in Chinese, which implies that improvements should be done on the learning environment and learning model to provide students with better learning support. For example, more study need to be focused on the ways how to help students strengthen their English capabilities, requirement on enrolling in the bilingual learning project, improvement of the elements in the learning model and learning resources.

Remarkably, majority of the students indicate that they gained a lot in enhancing the technical English capabilities concerning the major while reached the goal of gaining knowledge set forth in the course outlines.

Analysis on teaching quality: To find out if teaching quality satisfies the demand of the project when the environment and learning model mentioned above are applied throughout the process, a statistic is calculated according to scores for two faculty members who are responsible for lecturing. Data shown in Table 3 are collected from students and administration staff on lecturing performance of the 2 teachers based on 6 bilingual courses. A and B stand for the 2 teachers, respectively.

Obviously, some important implications can be drawn from the Table 3: Results show that teaching quality for both teachers meets the requirements of teaching practice, the total average for the performance is 90.42 which is in the range of excellence; many colleges in developing

Table 2: Perception of Influence on the level of comprehending knowledge

Influence	Percentage
None	0
Little	9
Some	53
A lot	38

regions could use bilingual teachers, who are selected from domestic population to carry out bilingual teaching projects as soon as some standardization for selecting bilingual teachers are imposed. This is also one of the major concerns for the long lasting bilingual teaching in colleges in developing regions and it also indicates that teachers in the project need to team up in the preparation of classes and the outcome would be much better if cooperation and mutual learning process could be setup effectively and efficiently among bilingual teachers.

However, we observed that some of the students had difficulty in understanding complex concepts completely taught in English. Therefore, oral Chinese up to 40% were used in these cases and students were strongly recommended to make reference to electronic learning resources in the course websites.

Chinese students are not used to the learning approach of presenting their own thinking in the classroom, especially when they have to talk in English. A good guidance from the teacher becomes a key element in helping student complete assignments. We observed that majority of the students felt comfortable to make presentations in English on pre-assigned topics if the teacher offered more efforts in guiding the setup of outlines of the presentation for students.

Due to the culture difference, students often had difficulty in understanding some phenomenon in the real cases of western companies. Therefore, clear description of the background of the cases plays a significant role in helping students benefit from the case-study. To offer better help, supporting materials were also linked in the course website for reference.

Evaluation of significance of electronic learning resources: In practice, we observed the important role that learning resources in the courses websites played. As non-native speakers, students often need to put more efforts in reading and understanding of the knowledge in off-class period. Resources in the websites allow students to get more information easily on the subjects that they are studying and exchange ideas on certain questions. Therefore, well-designed content can bring students more benefit during their study. Thus, an approach for the evaluation of the resources through which improvement and updating of learning resources could be implemented was developed for the project.

Table 3: Evaluation on teaching quality

		Score		Average		Total average	
Subject	Item	A	B	A	B	A	B
Lecturing	Explanation of basic concepts and theories	91.76	90.00	92.26	89.33	92.05	88.78
	Focusing on connection to real cases	92.06	89.00				
	Teaching content updating	92.94	89.00				
Method	Clear lecturing on key points	92.35	88.67	91.99	88.34		
	Diversity of teaching means	91.47	88.00				
Result	Follow the course outline	92.06	88.33	91.91	88.67		
	Student benefit	91.76	89.00				

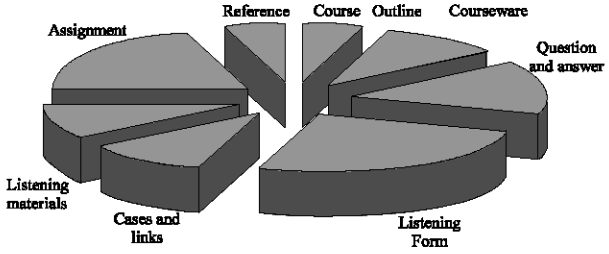

Fig. 3: Electronic resources

Each course taught in the project was required to set up a website which should include the links to the elements shown in Fig. 3. The content of the resources mentioned in study are shown in Fig. 3 in which the share of each element is allocated according to our experience.

These resources were thought to be important aid to efficiently acquire knowledge on the courses. Especially, learning forum and homework assignment and correction both have good interactive function which provides a direct communication means among teacher and students and also, among students when difficulty arises in understanding. When a course goes to the end, a questionnaire is given to each student for scoring on each learning resource for importance according to his own experience based on the weight (Table 4) allocated according to experience and observes. Statistics of these data is used in the improvement and updating of the learning resources in relevant course websites. The calculations use following method.

The 8 resources shown in Fig. 3 were scored by 37 students against the importance of 8 resources in their study. The importance of the resources is divided into 6 grades, 0~5, the higher the number, the more important it is. The collected scores were put in a Table 4 and use Eq. (1) to obtain results as shown in Table 4:

$$\text{Total weighed average for 8 resource} = \sum_{i=1}^{n}\sum_{j=1}^{8} w_j \times R_{ij} / n \quad (1)$$

Table 4: Example of Score card for resources in course website of electronic commerce

Name of resource	Weight	Total score	Average	Weighted average
Course outline	5	125	3.38	16.90
Courseware	10	148	4.00	40.00
Exercise and answers	15	158	4.27	64.05
Learning forum	25	149	4.06	102.00
Cases and website links	10	150	4.05	40.50
Listening materials	10	140	3.78	37.80
Homework assignment and correction	20	156	4.22	84.40
Reference books	5	111	3.00	15

Total weighed average for 8 resources = 400.65

From Table 4, following implications are obtained: the weighted averages reflect the general feelings from 37 students on the resources they used. The results directly imply the quality and importance of relevant resources. From the view of control and management, the results provide teacher or school with quantitative information for improvement and adjustment of the resources in the course websites. Data shown in Table 4 show an acceptable efficiency of the resources provided in our Electronic Commerce website and if a course is repeated in different semesters for different group of students, a similar result can also be obtained. This allows us to compare the weighted averages from different groups of students which may give us hints on student quality, teaching effectiveness, teaching model suitability and teaching practice. This information is important for the improvement on applicability and efficiency of the resources.

Therefore, the evaluation approach used in the project provides a meaningful way for short term as well as long term comparison and evaluation means for web resources although it needs farther improvement in future practice.

CONLUSION

Through practice and analysis, following conclusions are obtained: one third of the students took part in the project encountered difficult in bilingual learning, however majority of them managed to meet the requirements for the courses under the aid of learning

environment and model and, obviously, their skills of technical English are remarkably improved, which is one of the main goals of the bilingual teaching project; elements shown in Fig. 1 and 2 play vital roles in reaching satisfactory outcomes for the bilingual teaching and learning of college level courses in a non-English spoken country. The elements are closely interconnected and contribute each own to the final result; electronic learning resources provide learners with useful learning information and interactive means through which learners can solve learning problems almost in real-time under the help of their teacher and classmates and the whole set of approach has good feasibility and is workable in meeting requirements set forth in course outlines of the project. It provides colleges located in developing regions of a country like China or countries alike a bilingual teaching example that they may be able to benefit from. Other important implications shown below can also be derived from the analysis.

Conditions vary from region to region. Therefore, in order to get a satisfactory result for a bilingual course a close connection to the social, economic, geographic, cultural and student factors in the local area should be taken into consideration. Adjustments such as the percentage of English being used in lecturing and homework as well as English paperwork may need to be considered for better developed regions. In this case, higher percentage of English applied in the process can be adopted and vice versa.

These two factors are the essential judgment for the final result. Thus, efforts should be put in the control and adjustment of the elements shown in Fig. 1 and 2. Teachers and administration are required to closely monitor the outcomes brought by the elements to make sure that they are closely interrelated and efficiently used so that difficulty in communication among teachers and their students is reduced to the minimum level.

In practice, it is found that students put more than 50% of their learning efforts in off-class period, which means that creating an electronic environment with plentiful learning resources and good interactive function is a key to obtain a satisfactory outcome. Analysis shows that most of the learning questions are raised and solved through a learning forum in the course website. Therefore, adequate efforts and funds should be used in the construction of websites for bilingual courses.

With social and economic development in the region, more skillful labors that not only have required special expertise but good English skills as a technical communication tool are needed. This trend will continue to force colleges in developing regions to offer good quality of bilingual courses to their students in order that they can successively compete in labor market in the future. This demand implies that new learning models and environment for bilingual teaching and learning in college level in these regions need to be further probed and explored.

REFERENCES

Jackson, J., 2003. Case-based learning and reticence in a bilingual context: Perceptions of business students in Hong Kong. System, 31: 457-469.

Jackson, J., 2004. Case-based teaching in bilingual context: Perceptions of business faculty in Hong Kong. English for Special Purpose, 23: 213-232.

Juan, G.H., 2004. Bilingual teaching and practice for science and technology courses. J. Civil Aviation Flight University of China, 11: 21-23.

Kubota, R., 2003. New approaches to gender, class and race in second language writing. J. Sec. Language Writing, 12: 31-47.

Lee, O. and S.H. Frado, 1996. International Patterns of linguistically diverse students and Teachers: Insights for promoting Science Learning. Linguistics Edu., 8: 289-297.

Liang, X. and B.A. Mohan, 2003. Dilemmas of cooperative learning and academic proficiency in two languages. J. English Academic Purposes, 2: 35-51.

Yalin, L., S. Peng and X. Fang, 2004. Bilingual Teaching Model for College Students. Chinese Geologic Education, No. 3, pp: 52-54.

Zhiguo, C. and J. Ling, 2005. Bilingual education in the science and technology university. Modern University Education, No. 2, pp: 107-109.