

The Introduction of High-Quality Educational Resources Promotes Students' Autonomous Learning in Sino-foreign Education Joint Project

Yan Ma

Department of Computer and Information Engineering
Zhejiang University of Water Resources and Electric Power
Hangzhou, China
mayan@zjweu.edu.cn

Abstract—The economic and social development needs a number of high-quality talents which cannot be cultivated under traditional education mode. Internationalization of higher education is a necessary trend. However, college students lack of the ability of self-learning, self-motivation, self-monitoring and self-regulation in Sino-foreign education joint projects. In this paper, we share our exploration of the introduction resources in Sino-foreign education joint project. These imported advanced educational ideas, scientific curriculum system, interactive teaching method, process assessment and international faculty team can promote students' autonomous learning.

Keywords—autonomous learning; high-quality educational resources; Sino-foreign education joint project; higher education

I. INTRODUCTION

Zhejiang Province is an advanced manufacturing base of the world. Also there are a number of foreign-funded enterprises and Sino-foreign joint ventures. In addition, Zhejiang Province is one of the provinces famous for trading in China, so there are a large number of export-oriented enterprises. In this economic environment, there is a common characteristic of these enterprises that all need high-quality integrated talents who have international view, are familiar with international rules, are proficient in professional skills and can be skilled in the use of a foreign language.

In traditional education mode, teachers dominate the class and students passively listen to the lectures. Even in the practical procedure, most of students operate step by step according to the detailed task instructions. Many students are weary of studying, let alone are able to achieve the requirements of enterprises and public institutions. In a consequence, there is a large gap between those who are trained under the conventional higher education and high-level talents needed by economic and social development.

Under such the background, education reform has become imperative. Internationalization of higher education is the development trend and a necessary process. More and more higher vocational education joint projects has been into people's sight since 2000. Colleges and universities benefit from Sino-foreign education joint projects especially in teaching and research. On the other hand, educators and education institutions take a number of measures to try to

change the passive learning situation of students especially in higher education. In other words, they explore methods and means of helping students' autonomous learning which is one of the hottest researches.

Through Sino-foreign education joint projects, some of best educational resources are introduced to Chinese colleges. Unfortunately, there are few literatures on discussing and studying the relationship between the introduction of high-quality educational resources and students' autonomous learning in Sino-foreign education joint projects yet.

In this paper, high-quality educational resources from aboard are associated with autonomous learning. We share our exploration experiences that the introduction of excellent educational resources promotes students' self-regulated learning in our Sino-foreign education joint project. Maybe these will have certain reference significance for other colleges or other researchers interested in this aspect.

II. PRESENT STUDENTS' LEARNING SITUATIONS

Most colleges and universities in Chinese mainland still use traditional teaching mode—teachers dominate the class and students passively listen to the lectures. That is, teachers teach the theory and then students do some validation experiments. In this mode, there are same problems existed in Sino-foreign education joint project of higher vocational colleges as following.

- 1) The contents of courses are not very appetizing so that students have no interested in them.
- 2) There are no various delivery types of knowledge and skills except lectures.
- 3) There is no skills delivery except only a bulk of knowledge contents, which makes students bloated, lethargic and sleepy.
- 4) There is a theoretical test that is the only evaluation result.
- 5) Students lack of specific learning goals.
- 6) It's not very motivating so students lack of learning enthusiasm.

7) It still only addresses the conventional knowledge and issues so students don't understand the latest frontiers of knowledge and skills.

From these problems mentioned above, we analyze the current vocational education model and the teaching mode and get some main reasons as following.

1) Teaching Materials always lag behind the ever-changing related industries and technologies. There is no effective integration of teaching materials which reflect the latest computer technology and pay more attention to the theory than to the practice.

2) Theoretical parts far outweigh practical parts and students have no enough opportunities to participate in and personally practice. Practical parts are only changed from those traditional experiments and not really guided by actual working situations; The lack of real double-qualified teachers, who has experience of related domain and industries, causes students not be familiar with the new industry knowledge and the actual work process.

3) The teaching method is simplex. Even if teachers use multimedia teaching methods, they don't adopt one or more suitable methods during the whole teaching procedure of courses.

4) Because the course isn't based on the working process or working scenarios, teachers only impart the knowledge to students so it is inevitable that they haven't the learning motivation.

5) A large proportion of the evaluation is the final theoretical exam. Some students, who are good at practices, can do well in practice but the theory is their short board. They can't get a high score. Thus both teachers and students are dissatisfied with the evaluation result.

Traditional teaching mode offering the educational environment is far from meeting the needs of high-quality skilled personnel. More seriously, college students lack of the ability of self-learning, self-motivation, self-monitoring and self-regulation in Sino-foreign education joint projects [1].

III. AUTONOMOUS LEARNING

There are many terms with the similar meaning of autonomous learning in academic literatures of domestic and abroad. In addition to autonomous learning and learner autonomy, there are other expressions such as self-regulated learning, independent learning, self-directed learning, self-planned learning, self-study, learner-controlled instruction, open learning, self-organized learning, self-determined learning, self-monitoring. These expressions are different, but all reflect a common feature, namely autonomy.

Up to now, educational circles in the domestic and overseas have not reached an agreement on the definition of autonomous learning. Before giving the general definition, different explanations of autonomous learning given by different scholars and some characteristic technical terms are showed in the following:

In 1981, Holec wrote *Autonomy and Foreign Language Learning* where it is the first time to put forward "autonomy" in

the field of language teaching. He thought autonomous learning is to develop learners' ability to manage their own study, including setting up aims, monitoring and assessing by students themselves [2].

In 1987, Dickinson wrote *Self-instruction in Language Learning*. He thought autonomous learning means that learners are in charge of all the decisions of their own and the implement it, but it is not necessary for them to independently undertake all tasks associated with learning [2].

In 1994, Professor Zimmerman, a famous American expert in autonomous learning study, said that students' learning is autonomous when they are the active participants in met cognition, motivation and behavior of three aspects [3].

In 2001, Wei-guo Pang proposed from the learning dimension and the learning process of two to define the self-study. From the horizontal learning dimension, autonomous learning motivation is self-driven; the content is self-selected; learning strategies are self-regulated; the learning time is self-managed; the students can also create a physical environment and social environment for learning and can learn to make the self-judgment and the evaluation of the learning outcomes by themselves. From the vertical dimension of the whole study process, autonomous learners can customize the learning objectives, make the study plan and prepare for learning; they are capable of learning the progress, learning self-monitoring, self-feedback and self-regulation during the learning process; the study results can be carried out self-examination, self-summary, self-evaluation and self-correction by students themselves [4].

In 2011, Cheng-kun Liu thought that students' autonomous learning refers to those students guided by educators, according to their actual learning and learning characteristics, consciously set learning objectives, develop a learning plan, select learning content, choose learning methods, make self-monitoring, self-feedback and self-regulation of the learning process in order to achieve the subjectivity development [5].

Generally speaking, autonomous learning means student-centered learning. In other word, students autonomously learn and practice in the whole study process whether consciousness and awareness or implementation.

In recent years, researchers and scholars primarily focused on students' learning strategies and the cultivation of students' learning skills [6]. With the development of IT, especial mobile terminal devices and networking technology, a growing number of educators pay close attention to autonomous learning under the network environment. However, there are few literatures studied on classroom environment for learner autonomy [7] [8]. Unfortunately, there is hardly any literature about the introduction of high-quality educational resources to improve students' autonomous learning in Sino-foreign vocational education joint projects.

Therefore, we take Sino-foreign education joint project of our college as an example to explore and practice how the introduction of high-quality educational resources promote autonomous learning in this paper.

IV. THE INTRODUCTION OF HIGH-QUALITY EDUCATIONAL RESOURCES

Nelson Marlborough institute of technology (NMIT) was set up in 1904, and it is one of eight public institutes of technology in New Zealand. NMIT has more than 100 years of school history and its unique characteristics. Through “Specialized Higher Education Joint Project in Information Technology between Zhejiang Water Conservancy and Hydropower College and Nelson Marlborough Institute of Technology, New Zealand”, our college has acquired mainly several aspects of high-quality educational resources as followed.

A. Advanced Educational Ideas

The teaching fully reflects student-oriented educational idea. In the class, the teaching is based on topic discussion instead of traditional lecture-based teaching. Teachers and students discuss interactively and make a decision from the discussion. Teachers design the syllabus and lesson plan, organize the teaching procedure and guide students to study. After class, students should independently complete lots of homework which require access to a large number of relevant information.

In this way, we breaks off the situation that Chinese teachers always tell the whole operating contents and steps to the students in practical teaching. Conversely, teachers from NMIT only tell students the aim and precautions of the practical projects, and students should think methods and concrete steps then finish them by themselves. This teaching method can full mobilize the students’ enthusiasm and train students’ ability of independent thinking and self-learning.

B. Scientific Curriculum System

Through sufficient communication and consultation, our education joint project in information technology imported sixteen core courses from New Zealand. Choosing those courses, NIMIT paid special attention to set up professional basic courses, emphasized the broadness of basis, and focused on the support of professional skill courses.

When we selected the teaching materials, we used western classic textbooks or text books written by teachers with rich corporate experiences. The course contents reflect both comprehensiveness and practicality. There are 16 core courses of IT specialty and one basic course. 7 courses are foreign teacher’s courses and 9 courses are bilingual courses. 88.2% courses are imported teaching materials (as shown in Table I).

What’s more, NMIT put all the courses on the Internet so that authorized teachers and students can log in the website at any time to learn constantly updated course contents. It fully embodies the frontiers and openness of the course characteristics. These courses are flexible, practical and open, which students can learn any time and any place with the Internet.

C. Interactive Teaching Method

In the teaching process, we follow the “students-centered and teacher-guided” principle (also known as “students as the main body and teacher as the guide”). The teaching methods are not formalized, greatly mobilize students to participate in the courses and arouse students’ learning initiative.

TABLE I. TABLE OF CORE COURSES OF JOINT PROJECT IN IT

Type	Courses					
	Chinese course(s)		Imported course(s)		Total	
	Amou- -nt	Proport- -ion	Amou- -nt	Proport- -ion	Amou- -nt	Proport- -ion
Basic courses	5	83.3%	1	16.7%	6	100%
Professional courses	2	11.8%	15	88.2%	17	100%

In the class, teachers and students interact constantly, that means teachers momentarily answer students’ questions and also continually ask questions to the students. Therefore, the classroom atmosphere is very active. On the one hand, it arouses the students’ interest in learning. On the other hand, students are willing to keep pace with the course schedule. As a result, teaching effect and learning effects are quite good.

D. Process Assessment

Different from the conventional evaluation methods, the new evaluation method adopts process assessment. Students’ final result usually consists of attendance rate, class participation, periodic tests and final exams. Some courses’ assessment only includes several essays and assignments. Whereas others courses assess several practical project results.

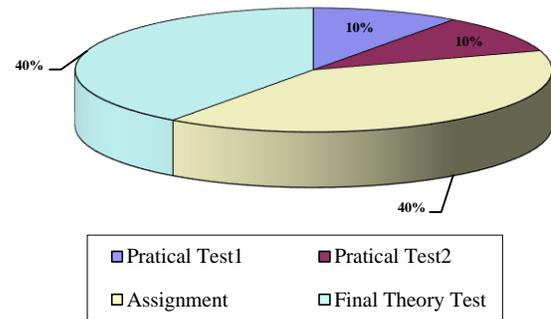


FIGURE I. THE ASSESSMENT OF COMPUTER ARCHITECTURE SYSTEM

Breaking the original evaluation mode that the final exam determines the final result of the assessment, each course adopts progress assessment. For example, the final exam of one course account for only 30% and other parts account for 70% (such as the middle test and the assignment). Fig. 1 is the four assessments of Computer Architecture System. In this course, students should install a desktop and achieve the configurations of it in the first practical test. And they should master the skills of install operating system such as Windows 7 in the second practical test. Before they finish the last theory test, they also should finish the report of an assignment which is the modern office supplies configuration, including several types of computers, for a small local company. Through these assessments, students can not only learn the knowledge of computer systems, but also master the practical skills. Moreover, students think that the evaluation procedure can

assess their learning process and the evaluation method can check their ability of learning the course.

In this assessment mode, students, who don't work hard usually but cram up before the final exam, cannot pass the course. Hence, the students can get rid of bad learning habits and return back to the right attitude and correct learning method. It makes students self-regulated and self-study.

E. International Faculty Team

In basic courses, there 10% teachers are foreign teachers, while there 38% foreign teachers in professional courses(shown as Fig. 2 and Fig. 3). These foreign teachers coming from different countries, such as New Zealand and Australia, not only teach students knowledge, but also bring different countries' culture and customs to students. Students can learn professional knowledge and skills and have a good experience in cross-cultural communication at the same time. As a consequence, students really benefit from education internationalization.

In this mode, students' independent learning is combined with teamwork. Task settings are combined with data acquisition. And classroom learning is combined with social investigation report.

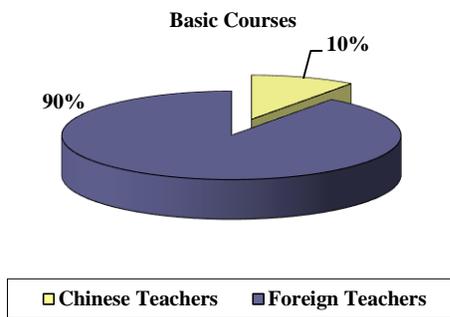


FIGURE II. TEACHERS OF BASIC COURSES

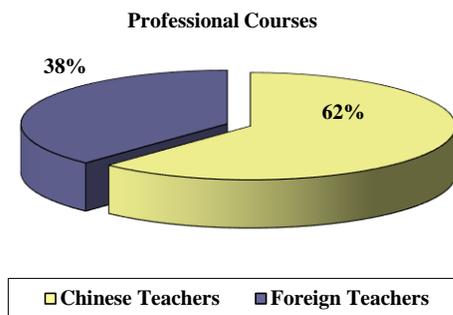


FIGURE III. TEACHERS OF PROFESSIONAL COURSES

V. CONCLUSION

After six years practice and exploration, we have made a number of high-quality education resources mentioned above. High quality faculty is particularly important factors that affect the success or failure of the joint projects and excellent teachers can specially promote students learn by themselves.

In this way, students can not only learn domestic and foreign advanced professional knowledge, skills and professional quality, but also master the methods and skills of communication with foreigners in the international teaching atmosphere. Thus they can be more in line with the requirements of high-skilled applied talents. Naturally, there are still many shortcomings, such as foreign teachers instability is a problem. In the future, we will look for high-quality and stability of the teaching staff. So we still have a long way to improve the teaching quality of cooperative education.

ACKNOWLEDGMENT

This paper is the derivative of work report of "Specialized Higher Education Joint Project in Information Technology Between Zhejiang Water Conservancy & Hydropower College and Nelson Marlborough Institute of Technology, New Zealand" which is rates as one of Zhejiang Sino-foreign education joint demonstration project in 2013. I thank leaders of International Institute of Education for giving me the opportunity of participating in the project management. And I also thank all members of IT joint project for our joint efforts.

REFERENCES

- [1] Feng Pan, "Study on English teaching and autonomous learning ability of students in Sino-foreign cooperative education project," *Journal of Yangtze University(Social Sciences Edition)*, vol. 35, pp. 106–107, 2012.
- [2] Jing-an Tang, and Ling-ying Wu, "Research on the definition and the theory of autonomous learning ", *ShaanxiJiaoyu (Gaojiao)* , No. 12, pp.61–62,99, 2007.
- [3] Jin-fen Xu, and Qian Zhu, "A Review of the research on autonomous language learning abroad", *Computer-Assisted Foreign Language Education*, No. 1, pp.15–20, 2013.
- [4] Wei-guo Pang, "On students' self-study", *Journal of East China Normal University (Educational Sciences)*, vol. 20, pp.78–83, 2001.
- [5] Cheng-kun Liu, "The teaching mode study on promoting college students' autonomous learning", *China Higher Education*, No. 17, pp.58–59, 2011.
- [6] De-song Chen, "A comprehensive study of independent study", *Journal of Zhejiang Education Institute*, No. 2, pp.21–25, 2005.
- [7] Si-hai Yu, "Learning-as-principal instructional design researchbased on information technology", *Heilongjiang Researches on Higher Education*, No. 9, pp.142–144, 2010.
- [8] Yan Yang, "A Review of the research on college Englishautonomous language learning under the domestic multimedia and network environment", *China Electric Power Education*, No. 13, pp.183–185, 2011.