E-Learning via T5 Model in an International Economics Course

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ABSTRACT

This research studies the results of learning through an electronic system in the International Economics course by using the T5 model. The research population comprises students who registered for the course in the first semester of 2007. The tools used are texts, activities, evaluation forms, questionnaires, students' behaviour observation forms and pre-test and post-test. The T5 model is composed of "Task" for learning activities and various resources, "Tutorial" for giving feedback and suggestions, "Topic" for students to study and complete their tasks, "Teamwork" for students to interact and work together in small groups and "Tools" whereby students use ATutor LMS to work regularly on learning schedules. Results from this research indicate that most of the students appreciated the T5 e-learning model including the structure of the courses, design and video media. They found it helpful in achieving their goals and understanding the courses. The students also found the T5 model helpful in terms of encouraging self-study skills which helped them to improve their performance and results in their final examinations.

Keywords: e-learning, T5 model, International Economics via e-learning

INTRODUCTION

Due to globalization and rapid change in information and communication technology (ICT), ***Sukhothai Thammathirat Open University (***STOU) has developed an electronic learning (e-learning) system to catch up with the expansion of telecommunications and development of e-learning systems.

STOU's philosophy is to use ICT in distance education via e-learning to enhance the regular learning system which relies on textbooks and publications. The T5 model was chosen because of its learner-centred approach to course delivery, emphasis on designing tasks that promote student engagement with the content and prompt feedback as well as flexibility which allows the re-use of learning objects that have been developed and can be incorporated into the model. The T5 model, which has been used

in many educational institutes such as the University of Waterloo (Canada) and Ubon Rajathanee University (Thailand), was introduced in the International Economic course at the master's degree level. The course content consisted of technical terms, hypotheses, mathematical graphs and statistics.

OBJECTIVES

The objectives of this research were to develop an e-learning system by using the T5 model for the International Economics course and to study the results of using the system.

METHODOLOGY

A process was attempted to test a learning system in the T5 model with 14 master's degree students in the Faculty of Economics at STOU who registered for the International Economics course in the first semester of 2007. The research tools consisted of lessons, activities and evaluations based on the T5 model which were divided into 15 units. The contents were created and tested by the course production committee. The T5 model evaluation form was created by the person in charge of each learning unit. The system designer evaluated the quality of the activity assessment form based on: 1) consistency between the assessment form and the course objectives; 2) the survey on the effectiveness of using the T5 model; and 3) the observation form of student behaviour using electronic media in the final exam. STOU adopted the T5 model from the University of Waterloo to develop the learning system in the International Economics course. The T5 model consisted of the following:

TASK

The students participated in the activity in each unit. These included studying the content on cassette tape, listening to or watching the media broadcast by the university (cassette tape and video) and studying the additional resources recommended by the instructors. The scores for the activity in the 15 units were 30 points. The observation form on the behaviour of students participating in each activity unit was divided into five areas: punctuality, activity completion, supplementary knowledge search, systematic report presentation, and cooperation and interaction. This observation was evaluated by the instructors of each unit. The student behaviour score was part of the activity score.

Tutoring (suggestion and feedback)
The students who participated in the first seminar would receive feedback from instructors and officers monitoring the university's e-learning system.

Topic
The instructors who created the lesson plans designed the activities in parallel with behaviour objectives and provided additional resources for students. The activity in each unit consisted of two to four open-ended questions with answers. Students could check the answers after finishing all the activities in each unit.

Teamwork
Students were divided into three groups comprising four to five students each for group projects. The students also conducted evaluation after the activities.

Tools
The ATutor Learning management system was used to create an academic calendar in the 1/2007 semester, which was from 1 July 2007 to 27 October 2007 (the total duration was 19 weeks). The research team planned activities for the entire semester, including 15 units of content study (each unit took a week and the total time taken was 15 weeks), two seminar tutorial sessions, pre-test, post-test and final exam. The academic calendar was designed in the form of a table with: 1) time; 2) list of activities for the entire semester; 3) weekly activities; 4) deadline of activities in each unit; and 5) supplementary seminar and final exam date. The calendar was intended to help students plan their study effectively.

RESULTS

The findings revealed the level of student satisfaction in learning through the electronic system. The students experienced a high level of satisfaction with the lessons. Specifically, e-learning helped the students to: 1) reach the learning objectives; 2) understand lessons; and 3) acquire more self-study skills.

The learning suggestions, feedback and information announcements were useful for the study. The learning assessment and assignment in each unit were important for the study. There was medium-level satisfaction for the interaction between students and instructors.

With regard to lesson structure, the students had a high level of satisfaction. The activities were appropriate for the lesson and the form of activities drew students' attention. There was medium-level of satisfaction with the occasion of interaction among students, the clear meaning of pictures and messages and the linking of contents with other sources.

For lesson design, the students' satisfaction was also at a high level. It was easy to understand and access the information through the main menu. The screen was attractive and appropriate, specifically the size, quality and colour of fonts. The interaction was easy and convenient to use. The students were moderately satisfied with the "HELP" option.

In media, the highest level of satisfaction with the video was the Exchange Rate Theories. Students were highly satisfied with the Monetary Theory, the New International Trade Theories, the Controlled Exchange Rate and Foreign Currency Market, the International Economics Part 1 and 2. However, satisfaction was low for the audio cassette tapes.

For student behaviour in learning through an electronic system, the highest satisfaction was with the global view of International Economics. The high level was divided into five areas:

- Punctuality: Nine students obtained the highest behaviour scores and five students obtained high behaviour scores.

- Activity completion: 10 students obtained the highest behaviour scores and four students obtained high behaviour scores.
- Supplementary knowledge search: Nine students obtained the highest behaviour scores, four students obtained high behaviour scores and one student obtained medium behaviour scores.
- Systematical presentation: Seven students obtained the highest behaviour scores, six students obtained high behaviour scores and one student obtained medium behaviour scores.
- Cooperation and group project: 10 students obtained the highest behaviour scores and four students obtained high behaviour scores.

Eleven out of 14 students passed the pre-test and post-test. The findings showed that the success rate was higher after using the e-learning system. Before using this system, the mean was 20.27 and the standard deviation was 3.10. The mean and standard deviation increased to 25.77 and 5.98 respectively after using the e-learning system. For the final exam scores, seven students achieved “A,” four students achieved “B+”, two students achieved “B” and one student achieved “D.”

The following are the problems and suggestions for the learning system through electronic media:

- The students had trouble with electronic media usage. Some students lacked computer skills. For example, they could not paste a picture or graph or print materials from computers.
- The students commented that the university should have announced and provided instruction on the e-learning system before registration. In addition, the activities in the 15 units should have been provided all at once.

DISCUSSIONS

The development of a learning system in the International Economics course by using the T5 model is not completely e-learning for distance education. It is only supplementary media in the course. The main media comprise textbooks and workbooks. The important supplementary media are the supplementary seminar. Success in this course is the result of the overall elements (not only learning through the e-learning system). Therefore, this project is not completely student-centred learning, which is the principle of an e-learning management system.

The pilot project in the International Economics course through an e-learning system in the 1/2007 semester is similar to the pilot project at Macquarie University (Australia) studied by Wasina Chansiri and Poonsuk Hingkanon. Macquarie University started the pilot project with a course that was difficult to understand, needed group discussion and proceeded with the willingness of instructors. The instructors played an important role in content, interaction with students and assessment, while it was the staff who developed the system design media and teaching methods. However, the difference was the lack of student information survey before deciding to start the teaching.

The development of a learning system in the International Economics course through an e-learning distance education system in the 1/2007 semester succeeded and continued the T5 model principle, as with the University of Waterloo (Canada).

Nevertheless, there are still shortcomings in this project. The instructor who taught and evaluated the distance education system was not the same person as in the classroom. The instructors' feedback to the students was delayed. Interaction among the students was limited because of programme difficulties with interaction.

The activities were in the form of individual rather than group project.

The assessment was process-oriented for improving the study rather than product-oriented for deciding "pass" or "fail."

From the observation of assessment in the pre-study, post-study and final exam compared with student behaviour, students who were interested in the e-learning system paid more attention to work deadlines, willingness in activities, supplementary knowledge research, systematic report presentation and group cooperation. These students performed better in assessment and obtained good scores in the final exam.

RECOMMENDATIONS

Recommendations for improving the learning system in the university are as follows:

Technology

Some students have little access to technology. In the research, only seven out of 14 students had their own computers. Out of the remaining seven students, five used the computers at their office and two used the computers at Internet cafes. It is easy for students who live in Bangkok to find Internet access. For those in other provinces, it is more difficult. The findings show that students who used computers in Internet cafés were usually not from Bangkok. Students who used computers in their office found it inconvenient because they could only do so during office hours. So, the university should provide student loans to buy computers.

The university should provide practical training in the e-learning programme for instructors and students who register before the semester starts. It should include people who are interested in the programme.

The university should develop and improve the programme used in the e-learning system, so that it works with any computer system, face-to-face interaction and is connected to Internet networks and other institutions' websites. There should be attractive fonts, pictures, colours and sounds in order to draw the attention of students to register in the e-learning system. Moreover, the programme should be regularly updated and tested for improvement.

The university should test the T5 model learning system with other courses in order to correct errors and improve the system.

Students

The university should be more inspirational. Instructors should have more interaction with students and motivate them by giving some extra scores.

The university should support e-learning to become supplementary media to replace supplementary teaching in bachelor degree programmes and to use as a requirement in all courses in master's degree programmes in order to reduce the budget of tutorial sessions and to be completely student-centred learning of the distance education system.

Instructors

The university should support instructors who do not use the e-learning system to use this system in order to reduce tutorial teaching and seminars. The university should facilitate personnel training and technology preparation as well as provide proper compensation.

Instructors should have sufficient computer skills and interact more with students.

Technicians

The university does not have sufficient Information Technology (IT) specialists. At present, an IT specialist must be in charge of many courses and as a result he/she has limited time to monitor each course. The university should recruit more IT specialists and encourage IT staff to go for training or conduct study visits in order to improve their skills and knowledge.

Assessment

A committee should be established to consistently evaluate the e-learning system to improve the system and meet the university standards.

SUGGESTIONS FOR FUTURE RESEARCH

Future studies could compare the results of studying through and without e-learning. There should be extensive research on the e-learning system in the T5 model.

Note:
In this research, the term "T5 model" was used interchangeably such as e-learning system by using T5 model, e-learning via T5 model or e-learning system.

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