Integrating English for specific purposes courseware into task-based learning in a context of preparing for international trade fairs

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This study reports on integrating courseware for participating in international trade fairs into English for specific purposes (ESP) instruction at a technical university in Taiwan. An Information and Communication Technology (ICT) approach combining courseware integration with Task Based Learning (TBL), was adopted. Evaluation of implementing this courseware-integrated ESP instruction was based on pre- and posttests in three tasks and student responses to questionnaires concerning satisfaction and attitude. Interviews were also conducted with recent graduates of this courseware-integrated program now working in business fields. Meanwhile, teacher-centred, face-to-face instruction on the same topic was conducted with a control group. The courseware not only provided authentic materials for learning the target ESP in situational settings, but also offered learning activities with corresponding instant self-evaluation so that students were engaged in cognitive processes based on individual need. Students enrolled in the courseware-integrated instruction made as much, and at times, even better, progress as those electing the teacher-centred instruction while completing the tasks of problem-solving and higher-order thinking. Their self-learning effectiveness in both task performance and linguistic skills was significantly improved and they reported satisfaction with the courseware-integrated instruction. Thus, courseware-integrated TBL instruction may offer a potential solution to problems in the development of ESP courses.

Introduction

International trade fairs are one of the major activities in the MICE (Meetings, Incentive travel, Conferences and Exhibitions) industry that has become one of the fastest growing segments of the service industry within the tourism industry, bringing in millions of dollars in revenue for participating countries. A few years ago, the Ministry of Economic Affairs in Taiwan began a major MICE service industry development project in order to promote hardware and software construction, speed up efforts to train and improve manpower quality, and to provide incentives to attract international MICE events to Taiwan. To meet the global and industrial development within the MICE industry, several related programs, departments and colleges in higher technical education have been established in Taiwan to cultivate high quality MICE manpower by increasing English communication skills and related professional knowledge.

The goals of Taiwan's Ministry of Education for foreign language education in technical and vocational education programs, stress program development. They specifically emphasize foreign language proficiency and advanced professional knowledge necessary for success in the job market. This emphasis has caused English for specific purposes (ESP) instruction to be increasingly emphasized at technical universities in Taiwan in order to reduce the mismatch between skills acquired in higher educational institutions and the skill sets needed in industry. ESP instruction is designed to meet the needs of those wanting to learn English for use in their specific fields, such as business, science, technology, medicine, leisure, and academic studies. However, curriculum development and qualified staffing for the development of ESP courses in Taiwan are lacking, as illustrated in preliminary work by Lai (2005) and echoed in Tsou (2009). When the current research began, there were no practical courses in technical college programs which allowed students to apply integrative English skills, and to transfer them and learn how to participate in, prepare for and budget for activities such as international trade fairs. These are the basic abilities required for secretaries or assistants working in trading companies.

With the rapid development of ICT, computer-assisted language learning (CALL) can provide numerous advantages in the areas of contextual (Shamsudin & Nesi, 2006; Tsai, 2009), self-paced, autonomous and individualized learning (Figura & Jarvis, 2007; Fischer, 2007), motivation (Chang, 2005; Papastergiou, 2009), feedback and evaluation (Dickinson, Eom, Kang, Lee, & Sachs, 2008; Heift
& Rimrott, 2008). Among innovative ICT approaches, the integration of multimedia courseware into instruction is considered an effective tool for learning (Brett, 2000; Roblyer, 2003; Tsai, 2009). Although courseware development and its application in classroom instruction is becoming more greatly emphasized, both its design and use have been more focused on courses related to sciences and technology (Azemi, 1996; Jiménez & Casado, 2004; Li, 2004; Shamsudin & Nesi, 2006). This trend is possibly due to the technology-related abilities of instructors in these fields, who have competent skills and knowledge of multimedia software and programming, and are able to convert lecture notes into interactive multimedia courseware for students. The effectiveness of these instructional tools has not been fully studied with regard to ESP courseware development in Taiwan and elsewhere, an interdisciplinary task that requires coordination and integration of subject knowledge, language learning, and multimedia and information technologies.

The aim of this project was firstly, to integrate ESP courseware (Tsai & Davis, 2008) that simulates real-life situations such as participating in international trade fairs into TBL instruction, in which computers play a central role as the means of information delivery to help students construct and promote content knowledge and problem solving skills while conducting situational tasks. Secondly, the project probed the effectiveness of the courseware integration in enhancing students' content knowledge and linguistic fluency for participating in international trade fairs. In addition, the project investigated student satisfaction with and attitudes toward TBL instruction with courseware integration. During this study a teacher-centred, face-to-face (F2F) style of instruction on the same topic was conducted with a control group for further comparison with the courseware-enhanced TBL format.

Methodology

A courseware-integrated ICT approach combined with a TBL approach (Ellis, 2006; Nunan, 2006; Skehan, 1998) was adopted. In general, TBL includes three principal phases: Pretask, During-task, Posttask (Ellis, 2006). The pretests conducted in the Pre-task phase not only allowed students to preview the task objective, but to think ahead about how to perform the task and plan the language and content knowledge they would need. In addition, based on the feedback of these pretests, students understood better what would be expected of them while performing the tasks. In the During-task phase, the students had direct and autonomous interaction with the ESP courseware according to the schedule arranged by the teacher, as researcher. The teacher mainly played the role of an observer or counsellor in order to understand the student's ability to handle autonomous learning and to complete the posttests. During the Post-task phase, the teacher provided written and oral feedback about language forms that students were using, problems with language and organization, and progress made.

At the end of the instruction phase, two questionnaires were administered. One focused on satisfaction with this courseware-integrated TBL instruction, and the second on comparing attitudes toward courseware-integrated and F2F instructions. Finally, interviews were conducted with recent graduates of the courseware-integrated ESP course who had gone on to work in business fields, to understand the practical application and usefulness provided by the courseware-integrated instruction. The methodology of this study was divided into two phases, Design and development of the ESP courseware, and Courseware integration into instruction, and is discussed in that order.

Design and development of the ESP courseware

The integrated ESP courseware was developed in a previous study (Tsai & Davis, 2008), mainly based on Mayer's multimedia learning cognitive theory (Mayer, 2005). It includes subject texts with English as L1 audio and Chinese translation support, narration, language skills practice, online tests with instant self-checking, and a virtual trade fair website. According to the presentation sequence, the courseware consists of six sections: Requirements for participating in a trade fair; Virtual website of a trade fair; Conversation practice; Letter writing; Hyperlinking; and Terminology. These are hyperlinked on the main page of the courseware, as shown in Fig. 1. A "Text Print" on the bottom right of the screen allows teachers or students to print all courseware text to facilitate teaching or learning. The structure is explained as follows:

1. Requirements for participating in a trade fair: The tasks and responsibilities required before and during a trade fair are explained. A listing of six tasks for pre-fair activity is provided: registration; booth rental including selection, design and decoration of the booth and related facilities; preparation of
products for display; flight and accommodation reservations for staff; and promotion. During the trade fair, a set of three responsibilities stresses the importance of maintaining discussion and interaction, including the examination of daily results; collection of market intelligence and information; and evaluation of staff performance.

2. Virtual website of a trade fair: The virtual website includes all the important information usually provided on official trade fair websites such as registration, information for visitors, application, change of venue/date, booth rental, facilities rental, setup/dismantling, security/liability, operation, breach of contract, accommodation. This design brings students into a simulated situation so that their learning can be tied to authentic activity and context, and cross-cultural issues of dealing with persons from other countries as naturally as possible. In addition, an online task-based evaluation system provides three real-life and problem-solving activities: (a) to learn how to research and present important information or facts for participating in a trade fair; (b) to learn how to prepare for a trade fair; (c) to learn how to budget for attending a trade fair.

3. Conversation practice: The conversation topics most frequently encountered by exhibitors and visitors to trade fairs were chosen for students to practice.

4. Letter writing: There are eight types of business letters that are often used for the preparation of international trade fairs, including letters of registration, flight and hotel accommodation, and invitation.

5. Hyperlinking: Several official trade fairs websites, including Photonics, Computers, Telecommunication, Electronics, Toys, Machines, and Gifts, are hyperlinked. The links to the Internet can offer another channel for learners to explore authentic materials from the Internet in real-life contexts.

6. Terminology: Since increasing vocabulary comprehension is seen as the most effective reading strategy, especially in ESP courses, relevant terminology is given in both English and Chinese, and is listed alphabetically in English.

Figure 1. Bilingual button design for selecting sections with their learning topics and units, shown on the main page of the courseware.

The operational mode of the courseware means that when any section button is clicked, the buttons for the topics in the selected section will appear on the left side. When any topic button is clicked, its content will be shown in the centre on a screen with a grey frame. This is the learning window where all the activities will be conducted. When any paragraph of the English text in the learning window is clicked on, the colour of the paragraph becomes blue, shown in Figure 1. The paragraph is then spoken in English with L1 audio as learners click on the left button of the mouse. This allows the practice of English reading skills and helps to improve the learners’ pronunciation and listening ability. Subtitled-multimedia courseware with L1 audio is similar to subtitled video, which positively enhances performance in listening and speaking and promotes more efficient comprehension for second language (L2) learners.
This multimedia message providing written words along with spoken language helps to construct verbal and visual cognitive representations and integrate them, which corresponds to Mayer's modality and multimedia principles (Mayer, 2001; 2005). After clicking the right button of the mouse, the Chinese translation and grammar explanation of the paragraph will be simultaneously given in a pop-up window shown near the paragraph. This design corresponds to Mayer's temporal and spatial contiguity principles by means of which better transfer occurs. The bilingual support will allow learners to improve comprehension, as well as practice English translation and writing skills.

The online evaluation system, including the five language tests of various degrees of difficulty, is provided for students to practice applying integrative English skills: listening; speaking; reading; writing; and translation, as shown on the left of the learning window in Figure 1. When any test is selected, the practice questions are chosen randomly by the program. In addition, all these learning activities are combined with an instant self-checking system so that students can monitor their progress and evaluate themselves immediately. If they do not know how to answer a question, the L1 audio of the reference answer can be played by clicking the button with a bell shown at the end of the question, which allows them to find the right answer. This learner-centred cue design should reduce cognitive load and learning difficulty and help learners find the answer by themselves, which meets various student learning needs when conducting assessment and evaluation activities. An example of the sentence re-structuring test is shown in Figure 2.

Students access the bilingual website for a simulated trade fair shown in Figure 3, called "21st century World Opto-Exposition", by clicking the button, "Virtual Website". Buttons on the left of the web page are related to different information or activities to be completed before the fair and during it. When any button is clicked, its corresponding learning content combined with L1 audio, translation and explanations are presented, as shown in Figure 3.

![Figure 2. Self-checking system for the sentence re-structuring test.](image)
Courseware integration into TBL instruction

The courseware-integrated TBL instruction was based on the cognitive apprenticeship model which suggests that skills be acquired and constructed through authentic contexts, activities, and culture (Brown, Collins, & Duguid, 1989; Oliver, 1999). Cognitive apprenticeship is a model of learning based on situated cognition theory. It provides practical steps and learning supports to enable students to acquire, develop and use cognitive tools in an authentic domain (Hung & Der-Thanh, 2001).

The courseware was integrated as a module incorporated in the first seven weeks of an elective course, "Practice for preparing for trade fairs", for junior English as a Foreign Language (EFL) students, offered at a technical university in Southern Taiwan, for two hours per week, and conducted in the multimedia laboratory. All students were individually assigned to computers in order to access and study subject content and language practices through the Intranet of the laboratory, according to the curriculum schedule controlled by the teacher. A teacher-centred F2F instruction course was conducted the following academic year for a further comparison with the courseware-integrated instruction using ESP courseware in this study. The curriculum design of the course included:

1. Target Audience: Thirty-four (34) junior EFL students took the course which included the integration of the ESP courseware (ICT group). They had studied English for eight years at least: six years in junior and senior high school, and two years in college. Since the number of students was limited and "Practice for preparing for trade fairs" was an annual course, a teacher-centred F2F instruction course was implemented as a control group (F2F group) the following academic year. Fifty-three (53) junior EFL students took the control course. They completed the same Test of English for International Communication (TOEIC)-like test, and the same pre- and posttests in the different task phases for a reliable comparison with the performance of students enrolled in the courseware-integrated ICT instruction. Since not all the students in either group attended every class during the seven-week period, the number of students who completed the pre- and posttests for each task varied.

2. Learning content set-up: The ESP courseware developed in the first phase was installed in the server of the laboratory so that students were able to easily access its content through their computers.

3. Instruction: In the During-task phase, the ESP courseware, as a silent partner, not only played the role of a medium and facilitator for delivering and transferring knowledge, but also as an language teacher or a peer through which students actively explored and interacted with content knowledge and practiced relevant linguistic fluency. Since the aim of this work was to study student self-learning effectiveness in the situation integrating the courseware, the teacher played the role of supervising and observing students' behaviours and learning, controlling the schedule.
effectiveness in problem-solving and language was significantly improved. Moreover, students receiving the courseware-integrated instruction made as much, and at times, even better progress than those receiving the F2F instruction. This suggests that the well structured courseware was able to play the role of an adjunct teacher, peer and facilitator with which students had direct interaction enabling them to learn subject content, practice any language skills, understand the questions, and think of the answers.

4. According to students’ responses to the questionnaire survey, they were satisfied with their self-study under the courseware-integrated instruction, which could be an effective tool to meet the target need of Taiwanese students taking ESP courses.

5. In comparison with traditional F2F instruction, students receiving courseware-integrated TBL instruction had a positive attitude toward the easy, effective, flexible and autonomous learning environment provided by the courseware, and would be willing to take other courses with courseware integration in the future.

Teaching/learning using courseware should be much more frequently applied within ESP classes. In order to further determine and understand the impact of such courseware integration into instruction, more classroom-oriented research is required to analyse and discuss learning effectiveness, attitudes and strategies for learners with different English proficiency, learning achievement, educational and working backgrounds while completing tasks of different natures, subject-based or linguistic. In addition, through collaboration between different academic departments and industries, the development of ESP courseware can be expanded to more professional subjects in order to enhance the professional and English skills of learners in different fields.

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