The Effectiveness of an Online Case-Based Collaborative Learning (CBCL) Module for a Business English Communication Course

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Abstract

The objectives of this article are to discuss the construction and development of an online case-based collaborative learning (CBCL) theoretical model and to evaluate the quality of the developed module after it was implemented first for one week and then subsequently for onesemester. The participants of the study were 22 students from the Faculty of Business, Rajamangala Institute of Technology Lanna, Lampang Campus,(RMUTLL),Lampang, Thailand. The quality of the developed module was then assessed qualitatively and quantitatively for one semester with the 22 participants. Quantitative data were analyzed via analysis of arithmetic means, t-test dependent sample,the effect size (ES) on students' gained scores,and level of effectiveness index (E1/E2). Qualitative data were investigated using a semi-structured interview.The findings showed that the developed module was effective since the students' listening and reading skills had improved. The findings confirmed the quality of the developed module since the students viewed it as a good language course. The students also had positive attitudes towards the CBL method and the collaborative learning (CL) settings. Discussion and implications of the module are included.

Keywords:case-based learning (CBL) method, collaborative learning (CL) approach, Web-based instruction (WBI), and course evaluation

Abbreviations

CBCL, case-based collaborative learning; **BCGW,** business communication in a global world; **BECA**, business English communicative achievement; **CBL**, case-based learning; **WBI**, Web-based instruction; **CL**, collaborative learning; **RMUTLL**, Rajamangala Institute of Technology Lanna, Lampang Campus; and **ES,** effect size.

Introduction

This study attempts to explore how to develop an online CBCL model and to discussits usefor a business English for communication course–a BCGW course. The model was implemented in a program for RMUTLL students. The developed online CBCL module for the Thai EFL students was mainly developed and designed by synthesizing five important aspects: the approach to business English learning and teaching, the CBL method,the CL approach, WBI, and course evaluation. The first four aspects were used for designing and developing the module. The last aspectwas applied for assessing the quality of the developed module.

Business English for Communication–Medium of Communication and Subject Matter

English serves a very important role in business communication and transactions; increasingly, companies in Thailand require their employees to be able to communicate in English effectively, and people with good business English proficiency are known to have a higher likelihood of obtaining good jobs and professional advancement (Rungnirundorn&Rongsa-ard,2005; Sunthorn,2000; Supatakulrat&Wasanasomsithi,2005; Wiriyachitra,2002; Wongsothorn et al.,2002).

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In Thailand, English is a compulsory second language in schools and in tertiary education, (Wongsothorn, Hiranburana&Chinawongs,2002). However, it is often found that the level of English proficiency of secondary and university students throughout Thailand is below the international standard, especially for higher education and at work (Keyurawong, 2002; Prapphal&Opanon-amata,2002; Wiriyachitra,2002; Wongsothorn, Hiranburana & Chinawongs,2002). Most importantly, there is a mismatch between what students learn from classes and what employers demand from new employees, as the level of English proficiency of Thai graduates remains marginal and thus insufficient to deal with real-world situations.

Case-based learning (CBL) method–authenticity

Mauffette-Leenders, Erskine &Leenders (1997: p.2) definea case as "…a description of an actual situation, commonly involving a decision, a challenge, an opportunity, a problem or an issue faced by a person (persons) in an organization."

That is, the CBL method is an authentic instructional method for learning and teaching a target language (Applefield et al.,2001; Mcdade,1995). The use of case studies is a tool to help students apply both the knowledge and skills acquired in class, and their background knowledge, through simulated and real-life settings (Andrews,1996; Astleitner, 2002; Ertmer & Russell,1995; Henson, Kennett & Kennedy,2003; Jackson,1998, 2004; Jarz,Lainz & Walpoth,1997; Mauffette-Leenders, Erskine &Leenders,2001; McWilliam,1995; Merserth, 1991; Piotrowski,1982; Westerfield,1989). The use of case studies providesactual situations with real-life tasks, for which learners have the opportunity to think, qualify and quantify different points of view, and make decisions using democratic and collaborative processes, for example, engaging students in group discussion (Graf,1999).

Collaborative learning (CL) settings–social interaction

Collaborative learning is a teaching strategy that involves setting up a team to work together to achieve a common goal, usually completion of a task or answering a question (Benson,2001). The CL setting has been found to increase a variety of students' communicative interactions in a more relaxing atmosphere and with greater motivation, inducing more negotiation of meaning, increasing comprehensible inputs, addressing different learning styles among learners, enhancing student responsibility for learning, and promoting a positive attitude toward the subject matter (Brown,2000; Gokhale,1995; Grabinger,1996;Johnson, Johnson &Houlubec,1984; Johnson, Johnson &Smith,1991; Slavin,1995; Yager, Johnston, Johnson & Snider,1985). That is, in pairsor group settings, one student expresses an idea, while the others listen, ask questions, and give comments on that idea and thus their fear might reduce significantly when the students are called on as a group by the teacher.

Web-based instruction –technology implementation

WBI is a medium of instruction to deliver learning content, activities, and communication (Alessi&Trollip,2001;McManus,1996). WBI helps motivate learners by means of infiniteand interactive content (Khan,1997; Reeves & Reeves, 1997; Santi,1997), as well as increasing the chances for learners to communicate with people in different countries by using real-life language in real-life settings (Kearsley,1996; Khan, 1997; Murphy-Judy, 1997). Learning English through WBI helps increase EFL opportunities for students, including Thai EFL students, to study English anytime and anyplace in authentic language communication settings, as opposed to the typically large number of students in each class, which makes it difficult for learners to receive adequate practice and guidance in the classroom (Khan,1997; Relan&Gillani,1995). That is why WBI has now expanded in many educational institutes in Thailand.

Evaluation process (i.e. materials, WBI and course evaluation)–quality control

To justify the quality of the developed course, criteria for assessing software instruction needed to be clearly justified. There are many types of criteria used for assessing the quality of the online program (Alessi&Trollip,2001;American Council on Education,1996;Dick & Carey,1996; Kapoun,1998;Michigan Virtual University, 2002; Na-Songkhla, 2004;Nielsen,1994b;Wilkinson, Bennett & Oliver,1997). In general, there could be two components–(1) multimedia designs; namely, font, text, table, animation, layouts; and (2) instructional design; namely, learning input, process, and outcome.

The evaluation process helps teachers or course developers monitor the effectiveness of instruction as well as demonstrate the development of learners (Dudley-Evans & John,1998; Grave,2000;Tomlinson,1998). Course developers need to remember that the process of curriculum development is never completedsince provisions must always be made for revisions of all the curriculum elements, with a view to improving them. That is, ongoing evaluation is the heart of the systematic approach to a language curriculum design (Brown, 1995).

In conclusion, since the language course developed in this study was designed using authentic or simulated real-life academic and workplace tasks and activities, where hands-on language learning experiences were provided for Thai EFL students in preparing and practicing their language and professional skills for future study and at work through the CBL method, it was hoped that through the developed module, academic and non-academic pursuits could be harnessed and integrated into the process of learning.

Research Objectives

The purposes of this study are to conduct and develop an online CBCL module for a Business English for Communication course, and evaluate the quality and effectiveness of the developed module. This study addresses the following research questions:

1. How is the developed online CBCL module evaluated?
2. What is the effectiveness of the developed online CBCL module?

Limitations of the Study

1. Students that tried out the developedmodule for one week, as well as students that learned with the developed module for one semester, were the same group since they had to be trained to accommodate and assimilate the learning conditions and methods constructed in this study. That is, familiarity with the learning settings was recommended.
2. Since the teacher was not a full-time teacher at RMUTLL, the lack of information about the learning backgrounds(previous English learning experiences) and cultural learning contexts of the learners (motivation factors, learning style, and language ability of students) caused difficulties in gathering information . Due to the limitation of the researcher's authority, and the university resources and technical facilities, the capacity of the server and the Internet could not be controlled.
3. In this study, the sample size of the population of 800 was 260 (Krejcie& Morgan, 1970: p.908). In this study, the sample size was limited to 22 RMUTLL students and the method of selecting the sample was via intact group. Thus, the findings of this study may be generalized only to a population that has a similar background to the one in this study.
4. The effect on the developed module regarding the students' language proficiency, especially speaking and writing,could not be reported for the following reasons. The speaking test consisted of three parts but only one part could be rated by the two raters; students spoke Thai in the other two parts. For writing, the two raters could not rate the students' performance due to the students' misunderstanding of the task. Students were asked to write an essay or a short report, with full layout (introduction, body, and conclusion). Eighteen students wrote about their background such as their name, ages, and educational history rather than the intended essays. Only two students were able to write an essay because they had learned how in high school. The two raters decided not to assign any scores to the students, and therefore not to assess the two skills (writing and speaking) during the pre-test section.Thus, the effectiveness of the developed module on speaking and writing English in terms of a comparison of the pre-and post-test scores by means of t-test dependent sample and the effect size (ES) on students' scores could not be reported.

Definition of Terms

To increase the comprehensibility of the study on the development of an online CBCL module, two terms were defined.

The online CBCL module

The online CBCL module was developed for the course, Business Communication in a Global World(BCGW).The developed modulestarted with the process of analyzing the learning contents of commercial textbooks, future employers' needs (Rungnirundorn&Rongsa-ard,2005; Sunthorn,2000; Supatakulrat&Wasanasomsithi,2005; Wiriyachitra,2002; Wongsothorn et al.,2002) and the two language books which the students used in the English foundation course.

The online CBCL theoretical model was then adapted from the two models, that of Graf (1999), and Flexible Education model , University of Tasmania (2005), and the principles of designing constructivist learning environments by Saver& Duffy (1995). In Graf's model, the five stages for teaching the CBL method wasdeveloped with a clear picture and a rich description of the process of analyzing a case. Most importantly, it wasconsidered to be logically and easily observed and students' performance couldbe evaluated step-by-step. The Flexible Education model was selected since it was related to the purposes of the study in terms of making the case study the primary problem-solving activity, allowing individual analysis before group work begins, providing an opportunity for everyone to catch up with thebaselineknowledge before groupwork begins, shaping specific learning objectives and attainment,and helping increase collaborative and discussion skills (Flexible Education, 2005).Since the theoretical concept of this study is the concept of constructivism,two models and one suggestion (Savery& Duffy,1995) were incorporated as an outline of the online CBCL theoretical model, as shown in Figure 1.

The online CBCL modulewas a blended language course. It consisted of two main modules: communication skills for international students in the business module; and the global business case study module. The first module focuses on the four language skills and gears learners to be ready for the second module. It was adapted from the two main commercial books: English for Global Business (Lites & Thorpe,2004) and Communication Skills for International Students in Business (Bretag, Crossman & Bordia,2007). The second module developed by the researcher comprises eight case studies with four different professional business fields: service, media, marketing, and technology. The eight cases were designed and developed in both the international and Thai contexts (Appendix 1). The module wasfocused on writing and reading skills.

Language proficiency

The students' language performance was assessed through the Business English Communicative Achievement(BECA) test,which was used as a pre-test and a post-test to assess the learning outcomes of the students, developed by the researcher (test specifications in Appendix 2).There were three administered periods: before, during, after taking of the course.

Research Methodology

There were two research phases: (1) Research Phase I–Development and trialing of the online CBCL module,and (2) Research Phase II: The online CBCL module in practice–the RMUTLL study.In this study, the classroom research undertaken was R&D (research and development), with a single group pre-test/post-test design.The R&D research involved three activities: basic research, applied research, and experimental development (the Organization for Economic Co-operation and Development–OECE, 2007). In this study, most of the experimental development occurred in Phase I, where, as shown in Figure 2, a significant part of the research involved applied research. As unpredictability, for example, the different ability of students and unknown external factors, is the norm of teaching practice, an ongoing process of reflection allows the possibility of refining and solving the problems in the research, adapting to the changing contexts and developing a deeper understanding and more useful and more powerful theories before making a conclusion. Thus, the four research stages (planning, acting, researching, and reflecting) were integrated within the development of the research framework.

This study employed Alessi &Trollip's model (2001) and the ADDIE model (1974 in Na-Songkla,2004) as a basis for designing and developing theonline CBCL module. The reasons were that the features and procedures of these two models were precisely specified and easy to follow step-by-step with a descriptive explanation. Figure 3 illustrates the research procedure of the development of an online CBCL module.The instrument uses in this study were the BECA test, an evaluation form, and a semi-structured interview.

The BECA test

The quality of the BECA test was measured by usingthe item-objective congruence(I.O.C.) index or content validity, the reliability estimate (KR-20), and item analysis indices: the difficulty index (*p*-value) and discrimination index (*r*-value).

Content validity

The BECA test and the BECA test evaluation form were delivered to three experts that have taught business English in higher education for more than 4 years or have developed a business English test and evaluated its quality.

Items that had an index lower than 0.5 should be improved (Tirakanant, 2003: p.140). The overall content validity index should be ≥ 0.75 (Sukamolson, 1995). The findings showed that the content validity of the listening and reading test was 0.84 and 0.91, respectively. The content validity of writing was separated into three parts: instructions (0.67), test content (0.96), and topic (0.78). The instructions for the writing test section were revised and reassessed by the experts. The content validity of speaking was separated into three parts: interviews (1), presentation (0.93), and discussion (1). The marking criteria for assessing speaking and writing were evaluated by the three experts as well.

The reliability estimates (KR-20) and item analysis indices

The test was then expected to be trialed with 22 RMUTLL students; however, two students did not sit the test since they were university athletes. Only the values of the reliability estimate (KR-20) and the difficulty index (*p*-value) and discrimination index (*r*-value) of listening and reading were reported since these characteristics of the two test sections were itemized. The results showed that the two sections of the BECA test were satisfactory in terms of the value of reliability (listening: KR-20=0.979; reading: KR-20=0.959). The average difficulty index (*p*-value) of the listening and reading test was 0.264 and 0.416, respectively. The average discrimination index (*r*-value) of the listening and reading test was 0.086 and 0.12, respectively. That is, the findings suggested that both the listening and reading test were good in terms of their difficulty but had low discrimination index ability.

After the BECA test was assessed for reliability, the items that had high values on the difficulty index (easy) and had no or low discrimination index (especially the listening test items), and had a discrimination index less than 0.20, had to be eliminated. However, no item needed to be dropped from this study since the small number of students (20 RMUTLL students) was not be representative of the population and such action might have affected the objectives set in this study.

Evaluation form

Evaluation forms were delivered to two parties: experts and students.

Experts' perspectives. The quality of the cases and the entire developed module were assessed by the experts.

Quality of the cases. Three experts(i.e. one business content expert, and two business English experts) that have taught business English or business content in higher education for more for than 4 years evaluated the quality of the cases. The online cases and the case evaluation form were delivered to the experts. The case evaluation form was adapted from the case evaluation rubric by Penn stateSchreyer Institute for Teaching(2004). It was selected since theseven indicatorscover all of the areas needed to evaluate a good case and each rubric is clearly explained in detail. Seven indicators were then applied to two sets of main criteria (i.e. objective criteria and content criteria).

All items for assessing the quality of a case study were graded on a four-point Likert scale.The acceptable quality of the case study measured by the value of the arithmetic mean should be equal to or more than 2.0. The value of 2.0 or above was set by the researcher as acceptable quality as it equals 70 percent (i.e. 'B' grade), which is considered as 'adequate' for academic purposes and is widely accepted.

Quality of the online CBCL module.Six experts (i.e. three experts in WBI design, and three content experts in business English) validated the quality of the program. Experts are defined asexperienced teachers that have had expertise in WBI design and business English for more than 4 years. The evaluation form, which had two criteria, namely, instructional design quality and multimedia instructional quality, was adapted from Alessi&Trollip (2001), American Council on Education (1996),Michigan Virtual University (2002), and Monash Web Style Guide (2006). The first part (i.e. instructional design quality) was used for the language experts, while the second part (i.e. multimedia instructional quality) for the WBI experts.

The quality of the developed module was measured by means of arithmetic mean. All items were graded on a five-point scale each with an open-ended question. The acceptable quality of the developed module should be equal to or more than 3.50. The value of 3.50 was set as acceptable quality because it is equal to 70 percent (i.e. 'B' grade).

Students' perspectives. Thethree methods used for assessing the quality of the developed module were: the level of effectiveness index, the evaluation form, and the questionnaire on the students' perception of the CBL method and CL settings.

Level of effectiveness index (E1/E2).The level of effectiveness index (E1/E2) by Promwong (1978) was selected since it was accepted as a tool for assessing the quality of an instructional program. This index was calculated by comparing students' learning products and process (formula shown in Figure 4). Promwong (1978: p.136) suggests that the acceptable quality of the effectiveness index (E1/E2) should be at 85/85 if the learning content is identified as learning by memorizing. If the learning content is considered to be a process of development or a process of changing learners' behaviors and attitudes, which takes time in developing or changing learners' behavior and attitudes, the acceptable quality of E1/E2 should be set at 75/75 or 70/70. The learning content of the developed module was not considered to be learning by memorizing. Thus, the acceptable quality of E1/E2 should be set at 70/70 because it is equal to 70 percent (i.e. 'B' grade).

Evaluation form. Thestudents were given the evaluation form adapted from distance learning evaluation adapted fromAlessi & Trollip (2001), American Council on Education (1996), Michigan Virtual University (2002). All of the items in the evaluation form were graded on a five-point Likert scale, each with an open-ended question. There were two principal criteria;namely, subject matter quality and multimedia instructional design quality. The total items was 53. The quality of the developed module was measured by means of arithmetic mean. The acceptable quality of the developed module should be equal to or more than 3.50.

Questionnaire on students' perception of the CBL method and the CL settings.Thirty items of the attitude questionnaire (Appendix 3) were graded on a five-point Likert scale (i.e. items 1-21–the students' attitudes towards the CBL method, and items 22-30–students' attitudes towards the CL settings). The attitude questionnaire was delivered to one language expert to check its quality. The acceptable qualityof the students' attitudes toward the CBL method and the CL settings measured by means of arithmetic mean should be equal to or more than 3.50 for the positive aspects. On the other hand, thearithmetic mean should beless than 3.50 for the negative aspects.

Semi-structured interview

The students were interviewed two times: after trialing the course for one week and then again after one semester.Audio recording and note-taking were used as the methods of collecting the information.

Study Results

The quality of the developed module was assessed two times–after one week and after one semester.

Assessing the quality by experts and the one-week trial with 22 RMUTLL students

The quality of the developed module was assessed by two parties: experts and students. The experts assessed the quality of the cases and the whole developed module, whereas 22 RMUTLL students assessed the quality of the whole course.

Experts' perspective–the quality of the cases. Table 1 shows the mean of each criterion-case study. As shown in Table 1, the eight cases all achieved acceptable quality. Case no. 6 achieved the highest mean (2.95), whereas case no. 3 obtained the lowest mean (2.33).The content of the eight cases was revised after the experts made some suggestions (Appendix 4).

Experts' perspective–the quality of the online CBCL module. Table 2 shows the mean of the two indicators. As shown in that table, the grand mean of the developed module was 4.28. The means of the two indicators (i.e. instructional design quality and multimedia instructional quality) were 4.33 and 4.25, respectively. The findingsshow that the experts viewed the developed module as a good course and made some suggestions on using the developed module (Appendix 4).

Several adjustments were then made. The font size was adjusted; more photos were added to the Web page but not the video file due to copyright issues; an answer key was added to each activity; more language resources were added; and a web-guide documenting how to access the developed module was prepared and explained to the students on the orientation day.

Students' perspectives–the quality of the developed module.The interview results showed that the students liked the online learning settings. They loved the visual media because they helped them learn in a fun environment. However, they reported that the learning content was difficult. Ten students commented that the learning content seemed to be constructed for students in Bangkok and for master degree students. They reported that they could not completely understand the cases, that the cases contained difficult and unknown words, and

that the case content was a bit too long. If possible, they would like to make all cases shorter and simpler. They also commented that they would like to have the definition of the unknown words, and they reported that the links did not work properly.

Several adjustments were then made according to the suggestions by the experts and students. These adjustments were grouped in terms of three changes–assigning treatments, changing the learning process, and providing ways to reduce learning difficulty; these included providing a grammatical lesson parallel with the developed module (the additional supporting class), revising the learning content by making it shorter, allowing students to use Thai, and providing a PDF version. These adjustments aimed to engage the students in studying the target language and to reduce the students' frustration.

Assessing the quality of the developed module for one semester

At the beginning of the semester, 22 students registered for the BCGW course. By the end of the course, four students had withdrawn so that there were 18 students. Three areas (i.e. assessing the quality of the online CBCL module, assessing the learning level, and investigating the reactions and attitudes of students) were examined.

Assessing quality of the developed module. Three methods were used for assessing the quality of the developed module: (1) the level of effectiveness index (E1/E2), (2) the students' reflection on the developed module using arithmetic mean, and (3) semi-structured interviews.

Level of effectiveness index. The findings showed that the level of effectiveness index (E1/E2) of the developed module was 77.06/62.22.These findings suggested that the developed module partially reached the criteria set (learning process (E1) =77.06), whereas the value of learning products (E2 = 62.22) was less than that of the standardized set in this study.

Evaluation form. The results showed that the students rated the developed module as a good language course (grand M=3.78). The means of two indicators, namely, subject matter quality and multimedia instructional quality, were 3.88 and 3.80 (Table 3 & 4).However, there was a mismatch between the students' attitudes and their actual use of the developed module. Given the students' expressed positive attitudes, it could be assumed that they accessed the developed module often. But this was not the case as evidenced by the number of times the students accessed the developed module (M=3.22) and the number of times they attended the conventional class (M = 4.83).

Semi-structured interview. The findings showed that most of the students had both positive and negative experiences using the developed module (Appendix 5). In general, they liked the course. All of the students really enjoyed working as a group and thought that the CBL method was interesting. They believed that they gained some knowledge of grammar, vocabulary, and business communication skills. They also felt more confident in writing and speaking English. However, they noted that the course was difficult and complained about much of the learning content.

Assessing learning level. To assess whether the learners actually learned the content of the developed module, a t-test for the dependent sample and effect size with a standardized gain score (ES) were reported. The significance level was set at alpha = 0.05. The acceptable ES valueshould bemore than 0.25 (medium) (Cohen,1988).

Listening skills. There was a significant effect of the developed module on listening skills, t (17) = -1.89, p< .001, with the listening post-test score higher than that of the pre-test.The ES on students' gained scores of listeningwas 1.213 indicating a large effect. The findings indicated that the students' listening skills improved after studying the developed module.

Reading skills. There was a significant effect of the developed module on reading skills, t (17) = -1.343, p< .001, with the reading post-test score higher than that of the pre-test.The ES of the reading was 1.246, indicating a large effect.This means that the developed module had a positive effect on the students' reading skills.

Investigating the reactions and attitudes of students. To find out the students' attitude towards the CBL method and CL settings, the questionnaire and semi-structured interview were used.

Quantitative data.The grand mean of the students' perception of and attitudes toward the CBL method and CL settings were 3.64 and 3.87, respectively (Table 5).

That is, the students reacted positively to the CBL method and CL settings. The highest mean was 4.44, indicating that the students believed that the CBL method was useful for business communication in English. The lowest mean was 2.83, indicating that the members of each group agreed that the CBL was time consuming. The mean of the students' perception of and attitudes toward the CL settings ranged from 2.67 to 3.83 (Table 5). The highest mean was 3.83, suggesting that the students preferred working in a group if they had to do case study again.

Qualitative data. The findings of the interviews suggested that the students found the cases a difficult method and reported that they spent time trying to understand the cases. Some students admitted that they could only partially understand by themselves, but working in groups helped them to comprehend the whole story of the case (Appendix 5).

Discussion

This part is divided into two parts: the possible justification for the developed module (1) in terms of educational multimedia instructional design, and (2) in terms of improvement in language proficiency.

The educational multimedia instructional design

The quality of the module was investigated in three components: (1) the overall picture of the developed module, (2) the teaching method–the CBL method, and (3) teaching strategy–the CL settings.

Overall picture of the developed module. With regard to the quality of the course, the value of the effectiveness index (E1/E2) suggests that the developed module should be revised. However, the students believed that the course was a good one, with some revisions needed. Two possible reasons are as follows.

Authenticity. The first reason could be the fact that the developed module provided the students with hands-on learning experience through the CBL method. The findings of this study agree with those of many studies, for example,Bean,1996;Demarco,Hayward &Lynch,2002;Grabinger, 1996; Grosse, 1988; Merseth,1991;Mcdade, 1995; Stepich, Ertmer& Lane,2001). The students believed that they had experienced some business-orientated situations which they could face in their future work, for example, discussion, problem solving, and presentations. The students had positive attitudes towards the authentic tasks and activities designed in the module.

Tools used for delivery of the learning content. Most of the students liked the online learning settings but preferred the blended learning settings. They reported that they preferred an explanation by the teacher when they did not understand the learning content. In this regard, this study corroboratesmany other studies,for example, Jariangprasert, 2003; Prapphal&Opanon-amata,2002; Siritongthaworn&Krairit, 2006; Theeraroungchaisri,2007. They all suggest that the blended learning environment is a suitable learning setting for the Thai learning culture. A language teacher should bear in mind that technology cannot substitute for him or her but it can supplement and facilitate his or her teaching (Prapphal&Opanon-amata,2002).

Teaching method. With regard to the learners' attitudes and perception,all of the students acted positively towards the CBL method (Daly,2002;Grosse,1988). What is more interesting is that the findings of this study certainly revealed the difficulty of implementing the CBL method as well. There are several possible explanations for this.

First, the heart of implementing the CBL method is a high level of linguistic knowledge as language learners have to read extensively (Estenan&Canado,2004). The CBL method utilizes the content-based instructional approachas a device to teach knowledge and skills. If the students with a low level of English proficiency have to learn with this method, it is undeniable that noticeable difficulties in implementation could occur.

If we look only the language ability of the students in the study, it possibly suggests that the students might not be ready to study English using this method since they need to read numerous articles in order to find information to support the topic of the assignments, and most importantly, they need to logically present this in English.

However, the main strength may be that the students kept trying to perform the taskseven though it was difficult, as it totally differed from what they were familiar with. Thai EFL learners might be familiar with grammar-based learning, especially RMUTLL students, and the translation method, with full support from the teachers (Daroon, 2003). The findings suggested that the students were'good' students who had the potential to be successful language learners but they needed an opportunity to develop themselves linguistically and professionally.

Moreover, Thais like to be 'calm' since it might not be proper to express anger, dislike or argument in public (Tetiwat & Huff,2002) and to express one's ideas or any arguments within class or outside class seems to be inappropriate behavior (Jarvis &Atsilarat,2004). The findings confirmed that some culturalfactors can obstruct the process of transferring knowledge. The students possibly were nervous and uncomfortable when they communicated with the teacher in the classroom but they talked a lot using Skype and face-to-face outside the classroom. In class, students feel that they should be 'neat and silent' since this is acceptable behavior in Thai society. They possibly believe that keeping quiet seems to be the best way to protect themselves from losing face in front of the class.

Teaching strategy. What we found in this study is that the CL environment helped learners and encouraged them to interact and give each other support for their learning (Vygotsky, 1978). Similar results were reported in previous studies (Johnson, Johnson & Smith,1991; Panitz,1997; Peterson & Swing,1985; Schneider,1998). The reason supporting the effectiveness of the CL settings might be a free selection of group members with mixed ability.

In this study, the students chose close friends with whom they were happy to work throughout the CBL method for the whole semester. They had different levels of language ability and helped each other to overcome problems and reached the course objectives by using their strengths. It seemed that the students were likely to develop responsibility for each other to complete their assignment; that means that each student was seen as an important member of his/her group.

Improvement in Language Proficiency

Three reasons for the effectiveness of the developed module regarding the students' language proficiency are the importance of scaffolding, making ongoingchanges or adjustments, and the use of L1.

Scaffolding. It was possible that the underlying success of the developed module was the concept of scaffolding since the students in this study were provided with some support that helped them close the gap between their current and desired performance and reduce their frustration. What we found in this study is that this study supports those of Chang,Chen & Sung (2002); Cook (2001); Hayashi (2005); Tang (2002 cited in Morahan, n.d.); and Wells (1999).

In fact, the aims of the course were not just to know 'what and how much' the students learned but to know 'how' they achieved or reached the target objectives of the course. After analyzing the RMUTLL situation, it appeared that the most important knowledge that the students certainly needed to have was basic grammatical structure for writing a sentence and a paragraph. Importantly, to be an effective writer, the writer should be an effective reader as well. That is, at the centre of the writing process is 'reading'–the ideas to write came directly from the reading material. That is one possible reason that the students' reading skills significantlyimproved, as evidenced by the value of effect size (ES =1.246),since the students were assigned to intensively read English language sources.

Ongoing changes or adjustments. As it was difficult to find ideal learners that perfectly matched the course requirements,ongoing changes or adjustments were required. Not only are the issues 'Appropriate for whom?' and 'Appropriate in which context?' demanding in web-based pedagogy (Kilker,2000), they are also essential for the CBL method and CL settings.

Teachers realize that 'no one course fits all' or 'no one method fits all.' Thus, the ongoing revision process is recommended as suggested by Senior (2006). Senior (2006:p.75) suggests that "A key feature of language teachers who are committed to ongoing development and changes is that they are prepared to monitor the success or otherwise of their teaching practices on a regular basis.".The changes or adjustments do not indicate a failure of the developed course but rather they help to achieve the success of the course.

The use of L1. Not only adjustments but also the use of L1 is possible as another factor in the success of the developed module. One question remained the researcher's mind while conducting the study:Is it possible to use only the target language in this language class if the students' English proficiency level is too low?

In this study, a combination of L1 and L2 suggested by Canagarajah (1999) and Phillipson (1992) helped the students to be able to study the target language in a less stressful learning environment. It was confirmed by the findings of the study that the students were able to answer the questions by finding related information to support their answers; however, their low English ability obstructed their performance.

The findings of this study are shared by the studies of Cook (2001); Jackson (2004); Tang (2002 cited in Morahan, n.d.);and Wells (1999). It is not reasonable to conclude that the students were not able to think, understand or learn the new learning content under the new learning settings. What we can conclude is that each of the students was an intellectual person and that he or she was able to develop his or her ability when the teacher provided a 'safe and relaxed' environment for him or her to learn effectively.

Conclusion and Implications

This paper has discussed the development of an online CBCL module for a business English communication course as well as evaluated its effectiveness. It was concluded that the developed module achieved its goals in using both quantitative and qualitative methods from students and experts.Although this study was considered to be an initial, 'trial and error' step in the development of an online CBCL module, it is really necessary to move on to the second step of 'systematic retrial' and to find alternative solutions. It is hoped that the conceptual framework, sample activities and tasks, and the findings and implications of the present study will provide useful information to further develop the online CBCL module to be more effective.

Most importantly, this study will help educators to see ways to design, develop, and assess the tasks and activities which stimulate language skills with learners that do not have a high level of English proficiency, as well as identify ways to help learners to overcome difficult situations.Furthermore, this study offers language teaching guidelines for enhancing the students' English language skills. It was not an ideal language course due to the difficulties of implementation. However, it was, at least, a first step in promoting the use of the CBL method in the EFL context, both in academic and in-service contexts, in the future.

Further Study

It appears from this study that teachers should remind themselves that learning is a developmental process which can be shaped by the learners in the teaching and learning contexts (Richards,2001). As a result, to improve the performance of students as well as the quality of language courses in the future, teachers should conduct research on the students' needs and difficulties and also be willing to change some of the teaching and learning contexts in line with the students' ability and regarding different contexts, such as academic and in-house service.The online CBCL theoretical model developed in this study could be used as a tentative paradigm for a language course based on the constructivist and real-life approaches. Since the proposed model has worked effectively, evidenced by the findings of the present study, it could be used as a guideline for other EFL courses that utilize the CBL method in more or less similar learning and teaching environments.

This study might be used by teachers or researchers as a ground for future research in assessing both the learning process and product approach–which includes both what students learn and what they can do with what they have learned. Also, it might be valuable for other researchers to conduct research on the time used to complete the tasks through online learning by comparing collaborative learning (learning in groups) and individual learning, or research on learning style preferences that influence the CBL method in online and CL settings, or research on the effects of authenticity on learners in different course disciplines.

Note: Appendices 1-5are available fromhttp://www.mediafire.com/download/kj94rbgr20wkb97/supplementary_file_1-6-13.pdf

References

Alessi,S.M. &Trollip,S.R. (2001). *Multimedia for learning: Methods and development* (3rded). New Jersey, NJ: Allyn and Bacon.

American Council on Education. (1996). *Ivy Tech State College:Distance Learning Evaluation*. Retrieved from http://www.itcnetwork.org/ACECheck1128.pdf.

Andrews,L. (1996). The case method and teacher education: rationale and strategy. In Hans Klein (Ed.).*Interactive teaching and emerging technologies.*(pp.11-20). Madison,*Wisconsin,*WI: Omni Press.

Applefield,J. M., Huber H., &Moallem,M. (2001). Constructivism in theory and practice: Toward a better understanding. *The High School Journal*, *84*(2), 35-53.

Astleitner,H. (2002). Teaching critical thinking online.*Journal of Instructional Psychology*.*29*(2), 53-76.

Bean,J.C. (1996*). Engaging ideas.* San Francisco,SF: Jossey-Bass.

Benson,P. 2001). *Teaching and researching autonomy in language learning.* London: Longman

Bretag,T., Crossman,J. &Bordia,S. (2007). *Communication skills for international students in business*. New South Wale: McGraw-Hill Irwin

Brown,H.D. (2000). *Principles of language learning and teaching*. (2nded). New Jersey,NJ: Prentice Hall Regents.

Canagarajah,S. (2000). *Resisting linguistic imperialism in English teaching.* Oxford: Oxford University Press.

Chang,K., Chen,I., &Sung,Y. (2002). The effect of concept mapping to enhance text comprehension and summarization. *The Journal of Experimental Education,71*(1),5-23.

Cohen,J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, New Jersey,NJ: Lawrence Earlbaum Associates.

Cook,V.J. (2001). Using the first language in the classroom.*Canadian Modern Language Review*. 57(3),402-423.

Daly,P. (2002). Methodology for using case studies in the business English language classroom. *The Internet TESL Journal,8*(11). Retrieved from http://iteslj.org/Techniques/Daly-CaseStudies/

Daroon,Y. (2003). *Researching innovation in task-based teaching in an English as a foreign language context: Authentic use of English for professionally oriented students in adult learning in Thailand*. (Unpublished doctoral dissertation). University of South Australia,Australia.

Demarco,R., Hayward,L., &Lynch,M. (2002). Nursing students' experiences with and strategic approaches to case-based instruction: A replication and comparison study between two disciplines. *Journal of Nurse Education*. *41*(4),165-174.

Dick,W. &Carey,L. (1996). *The systematic design of instruction* (4thed.) New York: Harper Collins College Publishers.

Dudley-Evans,T. & St John,M. (1998). *Developments in ESP: a multi-disciplinary approach.* Cambridge: Cambridge University Press.

Ertmer,P. A. &Russell,J. D. (1995). Using case studies to enhance instructional design education.*Educational Technology,35*(4), 23-31.

Esteban,A.A. &Canado,M.L.P. (2004). Making the case method work in teaching business English: A case study.*English for Specific Purposes*.*23*,137-161.

Flexible Education,University of Tasmania (2005).*Case-based learning model: FEU & Faculty of Health Science.* Retrieved from http://www.healthsci.utas.edu.au/faculty/cases/case_workbook/casewritingworkbook/casehbk_appc05.pdf

Gokhale,A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education, 7*(1). Retrieved from http://scholar.lib.vt.edu/ejournals/JTE/jte-v7n1/gokhale.jte-v7n1.html

Grabinger,R.S. (1996). Rich environments for active learning. In Jonassen D.H. (Ed.), *Handbook of research for educational communications and technology: a project of the Association for Educational Communications and Technology* (p.665-692). New York: Macmillan Library References USA.

Graf,D.(1999). A model for instructional design case materials.*Educational Technology Research and Development*, *39*(2),81-88.

Graves,K. (2000). *Designing language courses: A guide for teachers.* Massachusetts, MA: Heinle.

Grosse,C.U. (1988). The case study approach to teaching business English.*English for Specific Purposes*, *7*(2),131-136.

Hayashi,C. (2005). Proceeding of the 4th Annual JALT Pan-SIG Conference: *Scaffolding the academic writing process: a focus on developing ideasLifelong learning*. Tokyo, Japan: Tokyo Keizai University.

Henson,S.W., Kennett,P.A., &Kennedy,K.N. (2003).Web-based cases in strategic marketing. *Journal of Marketing Education*, *25*(3),250-259.

http://www.edb.utexas.edu/coe/depts/ci/it/projects/wbi/wbi.html

Jackson,J. (1998).Reality-based decision cases in ESP teacher education: Windows on practice. *English for Specific Purposes,17*(2),151-167.

Jackson,J. (2004). Case-based teaching in a bilingual context: Perception of business faculty in Hong Kong. *English for Specific Purposes,23*(3),213-232.

Jariangprasert, N. (2003). The opinion of faculty of business administration lecturers and students, Chiang Mai University about the use of E-Learning.*Songklanakarin Journal of Social Sciences and Humanities,9*(2).

Jarvis,H. &Atsilarat,S. (2004). Shifting paradigms: From a communicative to a context-based approach. *Asian EFL Journal*, *6*(4),1-23. Retrieved from http://www.asian-efl-journal.com/Dec_04_HJ&SA.pdf

Jarz,E.M., Lainz,G.A., &Walpoth,G. (1997). Multimedia-based case studies in education: design, development, and evaluation of multimedia-based case studies. *Journal of Educational Multimedia and Hypermedia,16*(1),23-46.

Johnson,D.W., Johnson,R.T., &Smith,K. (1991). *Active learning: Cooperation in the college classroom*. Minnesota, MN: Interaction Book Company.

Johnson, D.W., R.T. Johnson, R., & E. Houlubec.(1984). *Cooperation in the classroom*. Minnesota, MN: Interaction Book Company.

Kapoun,J. (1998). Teaching undergrads WEB evaluation: A guide for library instruction. *C&RL News*,522-523.

Kearsley,G. (1996). The World Wide Web: Global access to education. *Educational Technology Review, 5*(5),26-30.

Keyuravong,S. (2002). English language instruction in universities is about to get an overhaul. *Thai TESOL Focus,15*(1), 10.

Khan,B.H. (1997).*Web-Based Instruction.* (Ed.) Englewood Cliffs,New Jersey, NJ: Educational Technology Publications.

Kilker, J. (2000). When and where appropriate lesson from 'foreign' contexts for the pedagogical use of web-based technologies in the United States. In Cole, R.A. (Ed.) *Issues in web-based pedagogy: A critical primer* (p.65-79). London: Greenwood Press.

Krejcie,R.V. &Morgan,D.W. (1970). Determining sample size for research activities.*Educational and Psychological Measurement, 30*,607-610.

Lites,E. &Thorpe,K.(2004).*English for global business*. Michigan, MI: The University of Michigan Press.

Mauffette-Leenders,L.A., Erskine,J.A., &Leenders,M.R. (1997). *Learning with Cases.*London,ON,Canada: The Richard Ivey School of Business

Mauffette-Leenders,L.A., Erskine,J.A., &Leenders,M.R.(2001). *Writing cases.* (4th ed). London, ON, Canada: The Richard Ivey School of Business.

McDade,S.A. (1995).Case study pedagogy to advance critical thinking. *Teaching of Psychology, 22*(1),9-10.

McManus,T.F. (1996). *Delivering instruction on the World Wide Web*. Retrieved fromhttp://www.edu.nu.ac.th/wbi/oldwbi/wbi.html

McWilliam,P.J. (1995). Teaching family centred skills through the case method of instruction. *Zero to Three,15*(3),30-34.

Merserth, K.K. (1991b). The early history of case-based instruction: Insights for teacher education today. *Journal of Teacher Education,42*(4),243-249.

Michigan Virtual University.(2002). *Standards for quality online courses*.Retrieved from http://standards.mivu.org/index.tml.

Monash University Web Style Guide.(2006). *Monash web style guide.*Retrieved from http://www.monash.edu.au/staff/web/glossary.html.

Morahan,M.(n.d.). *The use of students' first language (L1) in the second language (L2) classroom*. Retrieved from http://www.teflbootcamp.com/MorahanL2inL1class.pdf

Murphy-Judy,K.A. (1997). Literacy for foreign language learners in the information age. NEXUS: The convergence of language teaching and research using technology. *CALICO Monograph Series,4*.

Na-Songkla, J. (2004).*Web-based instruction.* Bangkok: Chulalongkorn University.

Nielsen, J. (1994). Heuristic evaluation. In Nielsen,J. &Mack,R.L. (Eds.). *Usability Inspection Methods.* New York: John Wiley & Sons.

OECE Factbook: Organization for Economic Cooperation and Development. (2005). *Economic, environmental and social statistics.* Retrieved from http://www.oecd-ilibrary.org/sites/factbook-2011-en/08/01/01/index.html?contentType=&itemId=/content/chapter/factbook-2011-68-en&containerItemId=/content/serial/18147364&accessItemIds=&mimeType=text/h

Panitz (1997).*Collaborative versus cooperative learning :A comparison of the two concepts which will help us the underlying nature of interactive learning.* Retrieved from http://home.capecod.net/~tpanitz/tedsarticles/coopdefinition.htm

Pennstate: Schreyer Institute for Innovation in Learning. (2004). *Case Evaluation Form*. Retrieved from http://www.schreyerinstitute.psu.edu/pdf/CaseEvalRubric.pdf

Peterson,P.L., &Swing,S.R. (1985). Students cognitions as mediators of the effectiveness of small-group learning. *Journal of Educational Psychology, 77*(3),299-312.

Phillipson,R. (2003). *Linguistic Imperialism.* Oxford: Oxford University Press.
Piotroski,M. U. (1982). Business as usual: Using the case method to teach ESL executives. *TESOL Quarterly,16*(2),229-238.
Prapphal,K. &Opanon-amata,P.(2002). An investigation of English proficiency of Thai graduates. *Chulavijai,21*(3),12-16.
Promwong,C. (1978). Introduction to social research: Quantitative and qualitative approaches.*Psychology,18*,79-92.
Reeves,T. &Reeves,P. (1997). Effective dimensions of interactive learning on the World Wide Web. In B.H. Khan (Ed.),*Web-based instruction* (p. 59-66),Englewood Cliffs, New Jersey,NJ: Educational Technology Publications.
Relan,A. &Gillani,B.B.(1995). Web-based information and the traditional classroom: Similarities and differences. In B.H.Khan (Ed.),*Web-based instruction* (p.43), Englewood Cliffs, New Jersey,NJ: Educational Technology Publications.
Richards,J.C. (2001). *Curriculum development in language teaching*. Cambridge: Cambridge University Press.
Rungnirundorn,A. &Rongsa-ard,A.(2005). From needs analysis to course design of English business communication for learners with job experience.*Working Paper in English as an International Language,1*,1-20.
Santi,P. (1997). Interactive World Wide Web-based courseware: Similarities and differences In B.H.Khan (Ed.),*Web-based instruction*(p.407),Englewood Cliffs, New Jersey,NJ: Educational Technology Publications.
Savery,J.R. &Duffy,T.M. (1995).Problem based learning: An instructional model and its constructivist framework. *Educational Technology,35*(5),31-38.
Schneider,A. (1998). Sociology: The Internet as an extended classroom. *Social Science Computer Review,16*(1),53-57.
Senior,R. M. (2006). *The experience of language teaching*. Cambridge: Cambridge University Press.
Siritongthaworn,S. &Krairit,D. (2006). Satisfaction in e-learning: The context of supplementary instruction. *International Journal of the Computer, the Internet and Management,12* (2),162-170.
Slavin,R. E. (1995).*Cooperative learning: Theory,research and practice.*Boston,Massachusetts,MA: Allyn& Bacon**.**
Stepich D.,Ertmer,P. &Lane,M. (2001). Problem-solving in a case-based course: Strategies for facilitating coached expertise. *Educational Technology Research and Development,49*(3),53-69.
Sukamolson,S. (1995). *Modern analysis of test items by computer [in Thai]*. Bangkok: Vittayaphat.
Sunthorn,W. (2000). *The development of curriculum on English writing for business communication based on outcome-based education principles for business English majored students in business administration at Rajamangala Institute of Technology*. (Unpublished doctoral dissertation).Faculty of Education, Chulalongkorn University, Thailand.
Supatakulrat,L. &Wasanasomsithi,P. (2005). From needs analysis to course design of English for engineers on Saraburiprovince.*Working Paper in English as an International Language,1*,21-38.
Tetiwat,O. &Huff,S. L. (2003). Factors influencing the acceptance of web-based online education for Thai educators: Impact of Thai culture and values. In T. Thanasankit.*E-commerce and cultural values* (p.220-230),Hershey,PA: Idea Group.
Theeraroungchaisri,A. Sthapornnanon,N., Sakulbumrungsil,R., &Watcharadamrongkunm,S. (2009). Social constructivist learning environment in an online professional practice course.*American Journal of Pharmaceutical Education,73*(1)Article 10.
Tirakanant,S. (2003). *Statistics for social science research [in Thai]*. Bangkok: Chulalongkorn University Press.
Tomlinson,B. (1998). *Materials development in language teaching*. United Kingdom: *Cambridge University Press*.
Vygotsky,L.S. (1978).*Mind in society: the development of higher psychological processes.*Cambridge,*Massachusetts,* MA: Harvard University Press.
Wells,G. (1999). Using L1 to master L2: A response to Anton and DiCamilla's socio-cognitive functions of L1 collaborative interaction in the L2 classroom.*The Modern Language Journal,83*(2),248-254.
Westerfield, K. (1989). Improved linguistic fluency with case studies and a video method.*English for Specific Purposes,8*,75-83.

Wilkinson,G. L., Bennett,L. T., &Oliver,K. M. (1997). Evaluation criteria and indicators of quality for internet resources.*Educational Technology*,37(3),52-58.

Wiriyachitra,A. (2002). English language teaching and learning in Thailand in this decade. *Thai TESOL Focus*,*15*(1),4-9.

Wongsothorn,A., Hiranburana,K. &Chinnawongs,S. (2002). English language teaching in Thailand today.*Asia Pacific Journal of Education*,*22* (2),107-116. Retrieved from http://www.informaworld.com/smpp/content~content=a746305524~db=all~order=page

Yager,S., Johnston,R., Johnson,D.W., &Snider,B. (1985). The effect of cooperative and individualistic learning experiences on positive and negative cross-handicap relations. *Contemporary Educational Psychology*,*10*,127-138.

Figure 1The outline of the online CBCL theoretical model adapted from Graf (1999), and Flexible Education model, University of Tasmania (2005), and the principles of designing constructivist learning environments by Saver& Duffy (1995).

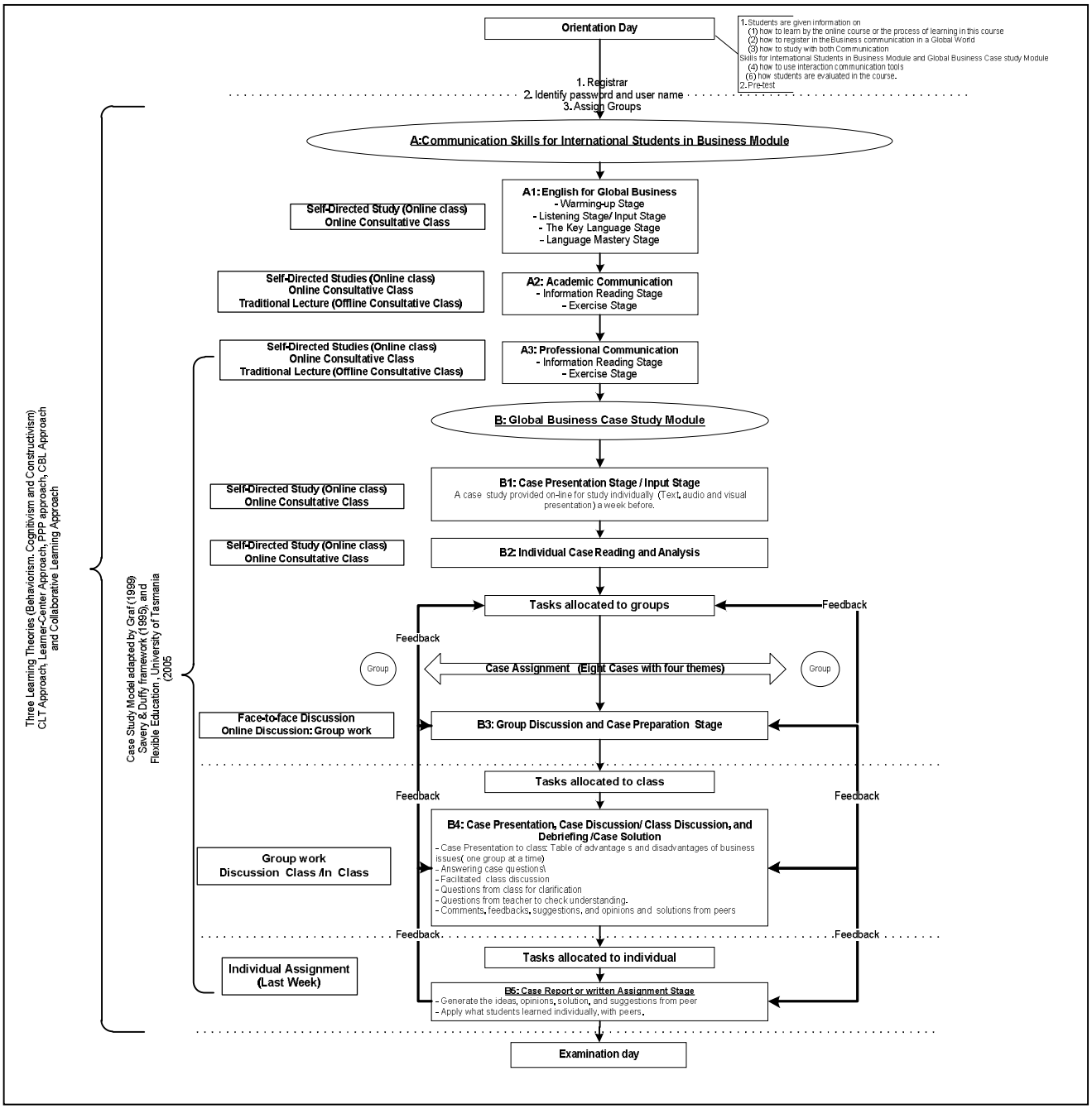

Figure 2 Overarching research approach of the online CBCL module

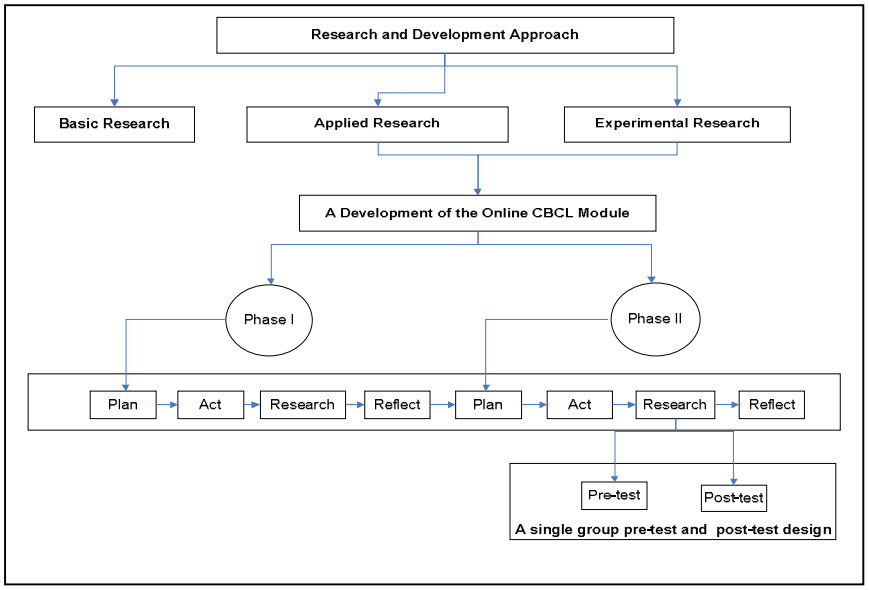

Figure 3The research procedure of the development of an online CBCL module for business English communication course

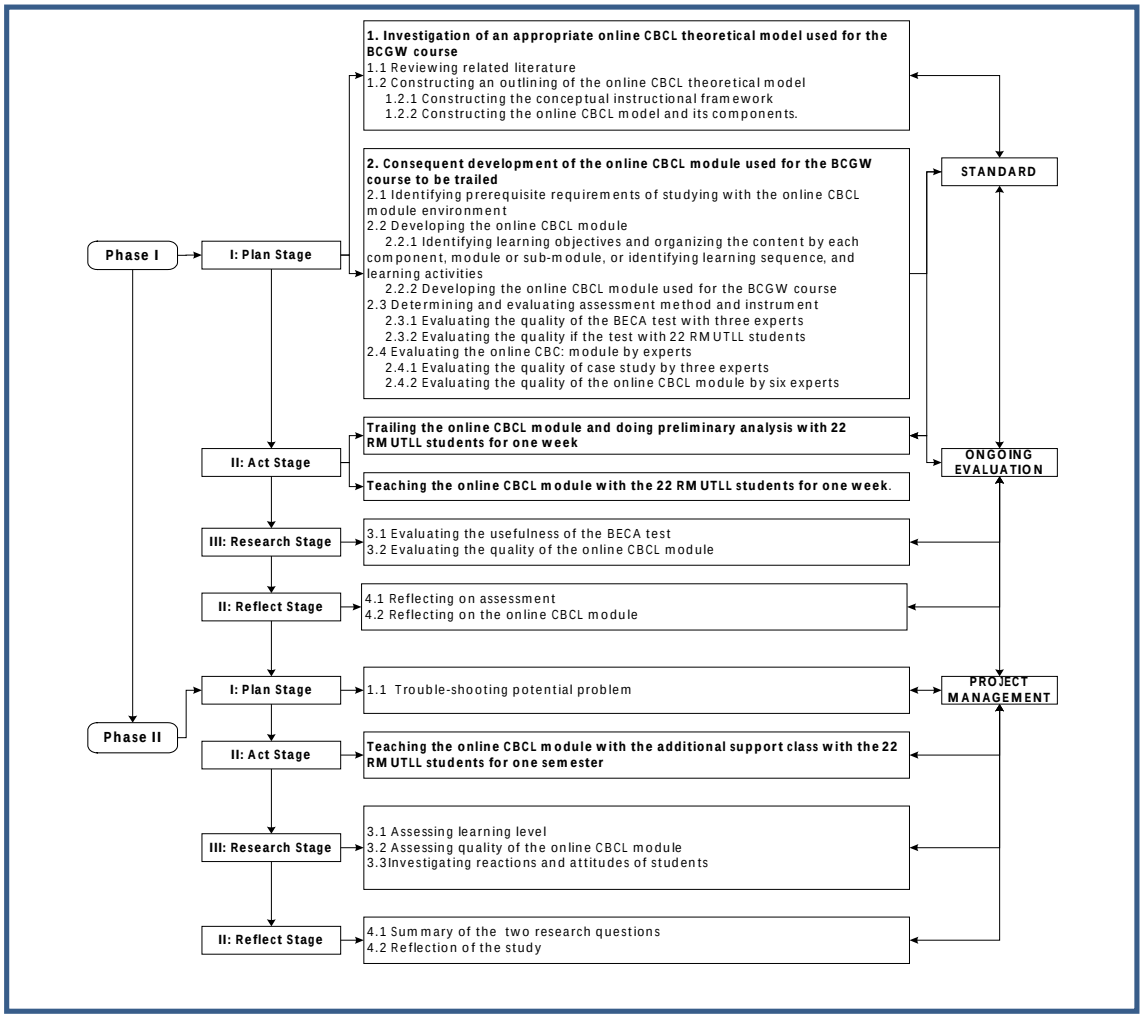

Figure 4 The level of effectiveness index (E1/E2) by Promwong (1978)

$$\mathbf{E1} = \left(\frac{\Sigma x}{\frac{N}{A}} \right) X\ 100$$

$$\mathbf{E2} = \left(\frac{\Sigma f}{\frac{N}{B}} \right) X\ 100$$

E1= Effectiveness of progress test
Σ*x* = Sum of the RMUTLL students' progress test scores
A = Total scores of progress test
E2 = Effectiveness of achievement test
Σ*f* = Sum of all RMUTLL students' achievement test scores
B = Total scores of achievement test
N= Number of students who took the BCGW course

Table 1:*Mean of each criterion– case study*

No	The objective criteria					The content criteria	
	Effectiveness of the case	Authenticity of the circumstance	Unity of Organization	Coherence of organization	Clarity of presentation	Appropriateness of the content	Attentive focus of the content
1	2.67	2.67	2.67	2.33	2.67	2.67	2.67
2	2.67	2.67	2.33	2.00	2.67	2.67	2.67
3	2.67	2.33	2.00	2.33	2.33	2.33	2.33
4	3.00	3.00	2.67	2.33	2.67	2.33	2.33
5	2.67	2.67	2.67	2.33	2.67	2.67	2.67
6	3.00	3.00	3.00	2.67	3.00	3.00	3.00
7	3.00	3.00	3.00	2.67	3.00	2.67	2.67
8	3.00	2.67	3.00	2.33	3.00	2.67	2.67

Table 2: ***Mean of two indicators for assessing the quality of the online CBCL module***

	Item	No. of item	Arithmetic mean	Grand mean
Indicators: Instructional design quality	**1-39**	**39**		
1. Learning design	1-12	12	**4.11**	**4.33**
2. Learning objectives and outcomes	13-20	8	**4.42**	
3. Learning content	21-30	10	**4.70**	
4. Learning assessment	31-34	4	**4.33**	
5. Learning engagement	35-39	5	**4.00**	
Indicators: Multimedia instructional quality	**1-53**	**53**		**4.25**
1. Usability	**1-37**	**37**	**4.20**	
1.1 Font consistency	1-6	6	4.00	
1.2 Text quality	7-10	4	4.17	
1.3 Navigation	11-17	7	4.52	
1.4 Tables and frames	18-20	3	4.56	
1.5 Screen design	21-25	5	4.20	
1.6 Media	26-33	7	4.04	
1.7 Communication	34-37	4	4.00	
2. Accessibility	**37-53**	**16**	**4.29**	
2.1 Content presentation	38-42	5	4.20	
2.2 Instructional design	43-53	11	4.45	
Grand mean of all elements = 4.28				

Table 3:*Highest and lowest mean of subject matter quality indicator*

Indicators	Highest mean	Lowest mean
1.Course organization and planning	**Item 5:**Teacher summarizes important points in both online and offline classes. (**M = 4.50)**	**Item 3:**Command of the subject matter is clear. (**M = 3.50**)
2. Communication	**Item 10:** Teacher uses challenging questions/problems. (**M = 4.50)**	**Item 9:** Teacher uses examples to clarify materials. (**M = 3.33)**
3.Student support	**Item 13:** Written information is supplied to the student about the program. (**M = 4.33)**	**Item 12:** Technical assistance is available to all students throughout the duration of the course/program. (**M = 4.28**)
4.Teacher/student interaction	**Item 15**: Teacher demonstrates concern for students' progress.**(M = 4.44)** **Item 16:**Examples are available. (**M = 4.44)**	**Item 20:** Each module requires students to engage themselves in analysis, synthesis, and evaluation as part of their course assignments. **(M = 3.56)**
5.Assignment, exams, and grading	**Item 23:** Exams cover all important course aspects. (**M = 4.33)**	**Item 22:** Exam questions are clearly clarified. **(M = 3.72)**
6.Course outcomes	**Item 28:** Students gain their progress or achievement through course objectives. (**Mean = 3.72)**	**Item 29:** Students increase their motivation and interest in the subject. (**M = 3.28)**
7.Student effort and involvement	**Item 33:** The course is challenging. (**M = 4.17**)	**Item 32:** Students study or prepare all activity requirements before attending class. (**M = 2.72**)
Overall quality	**M = 3.83**	

Table 4:*Highest and lowest mean of multimedia instructional quality*

Indicators	Highest mean	Lowest mean
1.Online organization and design	**Item 37:**The aesthetic design effectively presents and communicates information necessary to the course. (**M = 4.33**)	**Item 36:**Syllabus is identified and clearly delineates the role the online environment will play in the total course.**(M = 3.22**)
2.Instructional design and delivery	**Item 42:** Strategies for meeting diverse learning styles and promoting critical thinking skills are clearly implemented.**(M = 3.67)**	**Item 40:** Course offers multiple opportunities for interaction and communication among students, between students and instructor, and between students and content.**(M = 3.44**)
3.Assessment and evaluation of student learning	**Item 44:** Multimedia elements and/or learning objects are relevant and optimized for student engagement. (**M = 3.94)**	**Item 45:** Students have ample opportunity for self-assessment prior to and during course components. (**M = 3.22)**
4.Appropriate & effective use of technology	**Item 48**: Multimedia elements and/or learning objects are relevant and optimized for student. Internet users and effectively engage students in the learning process. (**M = 4.56)**	**Item 49:** Ongoing student feedback is used to continually improve delivery of course content. (**M = 3.89**)
5. Learner support and resources	**Item 51:** Course information is linked to the Welcome Page and provides a variety of course-specific resources to enhance online student learning. (**M = 3.94)**	**Item 52:** Course offers access to a range of media resources appropriate to course, such as CD-ROM based tutorials and necessary applications.**(M= 3.67)**
Overall quality	**M = 3.83**	

Table 5:*Frequency, means and standard deviations of the students towards the CBL method and the CL settings*

Likert Scale	1	2	3	4	5	Summary			Grand Mean
Item	No. of students					Sum	Mean	SD	
1	0	0	0	15	3	75	4.17	2.03	
2	0	0	1	12	5	76	4.22	2.12	
3	0	0	5	11	2	69	3.83	1.94	
4	0	0	12	6	0	60	3.33	1.80	
5	0	0	5	7	6	73	4.06	2.28	
6	0	0	6	10	2	68	3.78	1.90	
7	0	0	12	6	0	60	3.33	1.80	
8	0	0	2	14	2	72	4.00	1.97	
9	0	0	4	10	4	72	4.00	2.06	
10	0	0	0	14	4	76	4.22	2.03	
11	0	0	14	4	0	58	3.22	1.72	**3.64**
12	0	0	0	10	8	80	4.44	2.20	
13	0	0	2	13	3	73	4.06	2.12	
14	0	0	9	9	0	63	3.50	1.87	
15	0	0	8	10	0	64	3.56	1.80	
16	0	3	13	2	0	53	2.94	1.55	
17	0	5	8	5	0	54	3.00	1.76	
18	0	6	9	3	0	51	2.83	1.59	
19	0	7	6	5	0	52	2.89	1.63	
20	0	0	11	7	0	61	3.39	1.64	
21	0	0	6	12	0	66	3.67	1.80	
22	0	7	11	0	0	47	2.67	1.32	
23	0	0	5	13	0	67	3.72	1.87	
24	0	6	12	0	0	48	2.89	1.46	
25	0	0	3	15	0	69	3.83	1.87	
26	0	0	5	13	0	67	3.72	1.87	**3.87**
27	0	2	13	1	2	57	3.17	1.46	
28	0	0	5	13	0	67	3.72	1.80	
29	0	0	8	10	0	64	3.56	1.87	
30	0	0	6	12	0	66	3.67	1.87	