

CHAPTER I

INTRODUCTION



Background of the Study

A key issue in teaching English for specific purposes (ESP) is to provide activities that have an authentic purpose relating to students' target needs. Thus, task-based instruction (TBI) became the methodology used in language for specific purposes (LSP)/ ESP programs. Additionally, TBI is supported by second language acquisition (SLA) research in that it provides input to learners and opportunities for meaningful language use, both of which are generally considered valuable in promoting language acquisition. It is assumed that tasks will likely create a rich linguistic environment capable of activating the learners' intuitive heuristics which are natural cognitive processes used both consciously and unconsciously for developing the somewhat separate rules systems that underlie language comprehension and production (Kumaravadivelu, cited in Richard and Renandya, 2002: 97). The key characteristic of TBI is to provide an opportunity for learners to use language in real-world situations. TBI attempts to link classroom language learning with language activation outside the classroom (Nunan, 1989: 279). This causes a problem when teaching English in Thailand where English is a foreign language. Accordingly, the number of students graduating from university with adequate language performance to communicate in real-life situations is still small. One likely reason is that students lack opportunity to use the target language in real-life situations. The other reason is probably that tasks and activities designed for classroom learning do not enhance second language development.

There are solid grounds for believing that tasks that afford opportunities for collaborative learning will contribute to language acquisition. According to the interaction hypothesis, interaction, particularly when it involves negotiation for meaning and feedback, highly facilitates SLA. The factors beneficial for L2 learners arising from interaction are said to include receiving comprehensible input and interactional feedback (Gass, 1997, Long, 1996, Pica 1994). This viewpoint provides an impetus for SLA researchers and language teachers to examine how different types of tasks might be associated with language performance (Robinson, 1998). Tasks are designed to have goals and they are carried out through participant engagement in

goal-oriented behavior. Task type variables classified by their goals have been investigated with respect to language learning effectiveness. McCafferty, Roebuck and Wayland (2001: 2-480) concluded from their study that the concept of 'task-essentialness' may serve to promote increased mental effort and the productive use of new words which the students perceive to be central to the successful completion of the task in which they engaged. Several studies have been done on different types of tasks including Long's study (1985) on one-way and two way tasks in negotiation of meaning. He found that two-ways tasks created more negotiation of meaning. This study is inconsistent with Jauregi (1990 cited in Ellis, 2003) who found that a one-way task produced more negotiation of meaning. In terms of task outcomes, the 'open' and 'close' distinction is of concern. 'Close' tasks are tasks that require students to reach one correct solution (i.e. information-gap). 'Open' tasks are tasks that allow learners to have more freedom in choosing the topics or to discuss more openly. These types of tasks are called 'convergent' or 'divergent' respectively in Duff's study. Duff (1986) investigated the outcomes of convergent tasks using problem-solving and of divergent tasks using debating. Duff concluded that convergent tasks led to more negotiation of meaning whereas divergent tasks led to more language complexity. The result of this study is consistent with Tong-Fredericks's study (1984) on the effect of open and closed tasks by comparing three tasks: one was a problem-solving task (closed/convergent), and the other two were a role play task and an 'authentic' interaction task (open/divergent). It was found that convergent tasks were type of tasks that provided more language production. This finding was supported by Berwick (1990) who investigated a number of different types of tasks performed by Japanese college students. The tasks were free discussion (open/divergent) and two reconstruction tasks involving 'Lego' (closed/ convergent task). He found that closed tasks led to more self-clarification requests, more comprehension checks, more confirmation checks, more self-explanations and more self- repetition than the open discussion tasks (divergent). Skehan (1998: 118) concludes that different goals may be appropriate for different aspects of competence since convergent tasks produce more outcomes but shorter turns which might be appropriate some of the time, but there must also be opportunity for learners to produce more complex discourse involving

longer turns which require divergent ability. The distinction between convergent and divergent tasks is seen as reflecting the psycholinguistic view of task. There is also evidence to suggest that performing these types of tasks which demand different cognitive strategy, the outcomes of learners working towards them are doubtful.

According to the concepts of experiential learning, learning is a holistic process of adaptation to the world. To learn is not the special province of specialized realm of human functioning such as cognition or perception. It involves the integrated functioning of the total organism-thinking, feeling, perceiving, and behaving. Kolb (1984: 36-98) stated that to understand learning, we must understand the nature and forms of human knowledge and the process whereby this knowledge is created. Through life experience, we develop certain styles of learning. It is these learning differences that Kolb classified into four separate cognitive styles. In these cognitive styles, knowledge is organized through different conceptualizations: 1) the convergent learning style relies primarily on the domain learning abilities of abstract conceptualization and active experimentation, 2) the divergent learning style has the opposite learning strengths from convergence, emphasizing concrete experience reflective observation, the primary adaptive ability of divergence is to view concrete situations from many perspectives for generation of alternative ideas and implications, such as brain storming, 3) the assimilation learning style relies on the dominant learning abilities of abstract conceptualization and reflective observation, and 4) the accommodative learning style has the opposite strengths from assimilation, emphasizing concrete experience and active experimentation. Widdowson (1981) examined the different cognitive styles of the serialist and the holistic, the convergent thinker and the divergent thinker, and considered the possibility that these styles matched different subject specializations. Getzels and Jackson (1962) found that divergent abilities did seem to relate to ordinary achievement in school. They found a difference of over 20 IQ points between their high divergent and high convergent groups. Other studies by Torrance (1960), and Hasan and Butcher (1966, cited in Biggs & Telfer 1987) using subjects from primary school to university, reported that divergent ability contributed to academic attainment over and above the contribution from convergent ability, but more in verbal than in numeral subjects. Moreover, Biggs (1970, cited in Biggs & Telfer, 1987) reported that the high divergers used

strategies that were more appropriate to arts, and the high convergers used strategies that were more appropriate for science.

Interestingly, convergent and divergent tasks take on various aspects in relation to knowledge construction, cognitive styles, and learning abilities in the classroom. Relating to individual differences, a task can result in different kinds of activity when performed by different learners and it can result in different activities when performed by the same learner at different time. That is when individuals perform a task they 'construct' the activity in terms of their motives and goals, which can vary. The development process focuses on the transaction between internal characteristics and external circumstances between personal knowledge and social knowledge (Kolb, 1984: 138). Thus, if a student with a particular cognitive learning style perform a task the structure of which is one that prizes and nurtures his or her styles of learning, then the development of learning is likely to occur. It is also noted that when cognitive styles match the demand of a given task, higher performance results. Cognitive styles have either positive or negative relationships with motivation and academic achievement depending on the nature of the learning tasks. Teachers and course designers should be aware of their influences that can have on the effectiveness of delivery of teaching and pedagogical materials for an individual in Web-based environments. This leads to the question about which type of tasks between convergent and divergent tasks can enhance learning achievement in a Web-based English language class. To find the answer requires an investigation of the effects of these two task types on language learning achievement.

Many researchers believe that theoretically learners best acquire the target language by engaging in activities resembling those they will encounter outside the classroom. In a traditional classroom, there is less chance for learners to use the target language in real-life situations but the World Wide Web, Internet and other educational technologies enable countless interactions between far-flung people, peers and teachers. By using computers and the Internet, both course materials and whole courses can be delivered at a distance. The advantage of these tools is that they can support tasks and subtasks in the context of either collaborative or individual work. According to Li and Hart (cited in Richards and Renandya, 2002:362), the Web is found to provide a number of features which are particularly suited for second

language learners' growing proficiency in the language. These include the following: 1) a rich database of authentic materials, 2) an excellent tool for interactive learning, 3) an excellent context for collaborative materials development, 4) multimedia capabilities, which combine graphics, sounds, and movies, are particularly conducive to language learning, and 5) materials stored in the Web which can reach a wide audience at a relatively low cost. Additionally, the Web is designed using graphics and hyperlinks which are easy to use. Moreover, the advances in information technology and tele-communication can minimize the problem of students feeling that they are not really part of a class. Technology such as audio, video, and high-speed Internet connections can replicate the features of face-to-face interaction. With the use of these tools, Web-based courses can facilitate social interaction in both synchronous and asynchronous communication.

It is believed that successful Web-based instruction (WBI) depends on the presence of self-directed learning (Estmond, 1995). Learners should be given the opportunity to interact, to reflect, and to apply their learning experientially leading to their individually internalized development. Therefore, a Web-based course should be designed to provide interaction and collaboration among learners and instructors either in a lab setting on a local area network (LAN) or on the Internet. In interactive exchanges, students can participate in discussions and debates by reading messages and posting replies to newsgroups, discussion forums, bulletin boards, and Web-based conferencing either synchronous or asynchronous exchanges. As computer capabilities vary greatly, the design attempts to offer easy access, a built-in set of tools, and communication capabilities by using electronic mail, a Webboard, and a ChatRoom.

Since there is no one 'best' technology as stated by Chute, Thompson, and Hancock (1999: 25), each technology has different characteristics, strengths and limitations that make it more or less appropriate for different situations. Therefore, the effectiveness of the WBI course particularly in relation to individual students is sometimes questioned. Whereby the critical dimensions in synchronous (SL) and asynchronous (ASL) WBI are time and place, real-time (SL) provides the opportunity for students to ask questions and to share opinions with their friends and teachers. This creates the concept of 'presence' or a sense of belonging to a group. Delayed

time (ASL) provides opportunity to learn anywhere, anytime, which is the environment believed to achieve its maximum contribution to Web-based learning (Aggarwal and Bento, 2000: 4). Relating to the nature of students, it is likely that the differences in SL and ASL can affect student performance independently.

The characteristics of synchronous communication can facilitate successful networking projects in that students can work collaboratively in pairs or in groups. This advantage provides opportunity for students to discuss with their peers or teachers including getting immediate responses. This same factor can also generate communication disadvantages. The communication made at the same time may cause difficulty in accessing the networks and that real time communication does not provide much time for students to prepare and correct their mistakes. On the other hand, asynchronous communication is reported from research that it can provide these advantages. First, students have time to prepare material and deliver it after correction or withdrawing it before others have read it. Second, students can choose when to respond to other comments. This offers benefit of allowing one to think out more structured, more complex responses, and the benefit of being able to participate at times that are personally convenient. On contrary, the disadvantages of ASL can be caused from the multi-speed in presenting the contents. Students may not be able to follow and cause the decrease in motivation. Moreover, ASL lacks the immediate feedback (Turbee, 1999: 346-387). The distinctive characteristics of these two Web-based environments may cause effects on learning achievement in a WBI course. This leads to the second question about which of the two Web-based environments between SL and ASL can enhance learning achievement in a Web-based English language class. To find the answer requires an investigation of the effects of WBI environments on language learning achievement. Finally, the concerns about the interaction effects between the two WBI environments and types of tasks lead to the last question. The answer can reveal the effects of WBI environments and types of tasks that have on English language learning achievement.

The increasing number of students in all campuses each year causes inadequate supply in terms of teachers and learning facilities at Kasetsart University. To solve the problem of inadequate resources, new dimension in delivering teaching materials has been searched. The conclusion is to exploit the benefits of education technology.

Hence, several types of technology have been implemented with an attempt to link classroom learning resembling to traditional face-to-face environment. Teaching and learning via video-conferencing has been implemented to deliver instruction to students at other up-country campuses of Kasetsart University since the year 1998. Due to the limitations and weaknesses of this type of technology, English language was not successfully implemented (Sukchuen, 2003). Because students are required to take at least 9 credits in English to fulfill their undergraduate program, this issue needs an immediate concern. An alternative way is to find a more efficient technology which assists English language teaching and learning. In general this issue concerns three major components: instructional objectives, delivery system, and learning outcomes. Thus, Web-based instruction (WBI) has been investigated on its advantages to English language learning.

Research Questions

This research will endeavor to answer the following research questions:

1. Is there a difference between the English language learning achievement of students performing convergent and divergent tasks? If there is, how large is it?
2. Is there a difference between the English language learning achievement of students learning in synchronous and asynchronous Web-based learning environments? If there is, how large is it?
3. Is there an interactive effect among convergent and divergent tasks and synchronous and asynchronous Web-based learning environments on English language learning achievement? If there is, how large is it?

Objectives of the Study

This study aims to find out whether Web-based learning environments (synchronous and asynchronous) would have any effects on the learners' English language learning achievement in task-based learning. Furthermore, it is interesting to find out the effects of types of tasks (convergent and divergent) which might affect the learners' learning achievement. Therefore, the purposes of this study are as follows:

1. To investigate the effect of convergent and divergent tasks on English language learning achievement.

2. To investigate the effect of synchronous and asynchronous Web-based learning environment on English language learning achievement.

3. To investigate the interaction effect among convergent and divergent tasks and synchronous and asynchronous Web-based learning environments on English language learning achievement.

Statements of Hypotheses

From research question number one, the effect of convergent and divergent tasks on language learning achievement constitutes the first hypothesis. The first hypothesis is set from the concept that different types of task can result in different outcomes. According to the literature, convergent and divergent tasks are found to result in different outcomes. This can be supported by a study done by Duff (1986) who indicated that convergent tasks resulted in more comprehensible input than the divergent tasks, but divergent tasks led to more outputs. Generally, it was believed to have significant differences in terms of learning achievement between these two types of tasks since the literature indicated that divergence seemed to relate to higher achievement in school according to the studies of Getzels and Jackson (1962), Torrance (1960), Hasan and Butcher (1966, cited in Biggs & Telfer, 1987), and Coskun (2005). In terms of cognitive learning styles, convergent style learners prefer dealing with a single best answer or solution while the divergent style learners have the opposite learning strengths—they can view concrete situations from many perspectives (Kolb, 1984). This kind of learning strategy may lead the divergent style learners to better learning achievement. Consistent with Kerr and Murphy (2005), they found that the effect of WBI was significantly better on divergent task but no difference was found on convergent tasks.

According to the differences between convergent and divergent tasks in various aspects, the first hypothesis is stated as follows:

Hypothesis 1

The English language learning achievement of students learning through divergent tasks is significantly higher than that of students learning through convergent tasks.

From research question number two, the effect of Web-based learning environments on language learning constitutes the second hypothesis. The argument is which type of Web-based learning environments between synchronous learning (SL) and asynchronous learning (ASL) can most enhance English language learning achievement. According to Aggarwal and Bento (2000), learning on Web-based courses can take place in a variety of environments within two critical dimensions: time and place. The differences between time and place in communication technology are classified by synchronous (real-time) and asynchronous (anytime/ anyplace) environments. Learning via the Web, students should be able to access the course materials anytime/ anyplace and can take tutorials at their own pace. It is stated that the Web environment allows students to benefit from the anytime/ anyplace (ASL), and this flexibility is where Web-based teaching achieves its maximum contribution (Aggarwal & Bento, 2000). Conversely, synchronicity is reported to have some limitations since it gives little time for the communicating parties to think and reflect, to formulate thoughtful questions and answers; and it also demands that the parties should be available at the same time (Spector & Anderson, eds., 2000). Though synchronous Web-based learning can provide interaction and collaboration among learners and teachers in real-time, which can form the intuitive feelings resembling face-to-face interaction, it is likely that asynchronous Web-based learning can most enhance learning since the technology provides students with more opportunities in learning anytime/anyplace (Aggarwal and Bento, 2000). Accordingly, it probably enables more learning achievement.

According to the differences in the capabilities of the synchronous and asynchronous Web-based learning environment, the second hypothesis is stated as follows:

Hypothesis 2

The English language learning achievement of students learning through asynchronous Web-based learning (ASL) is significantly higher than that of students learning through synchronous Web-based learning (SL).

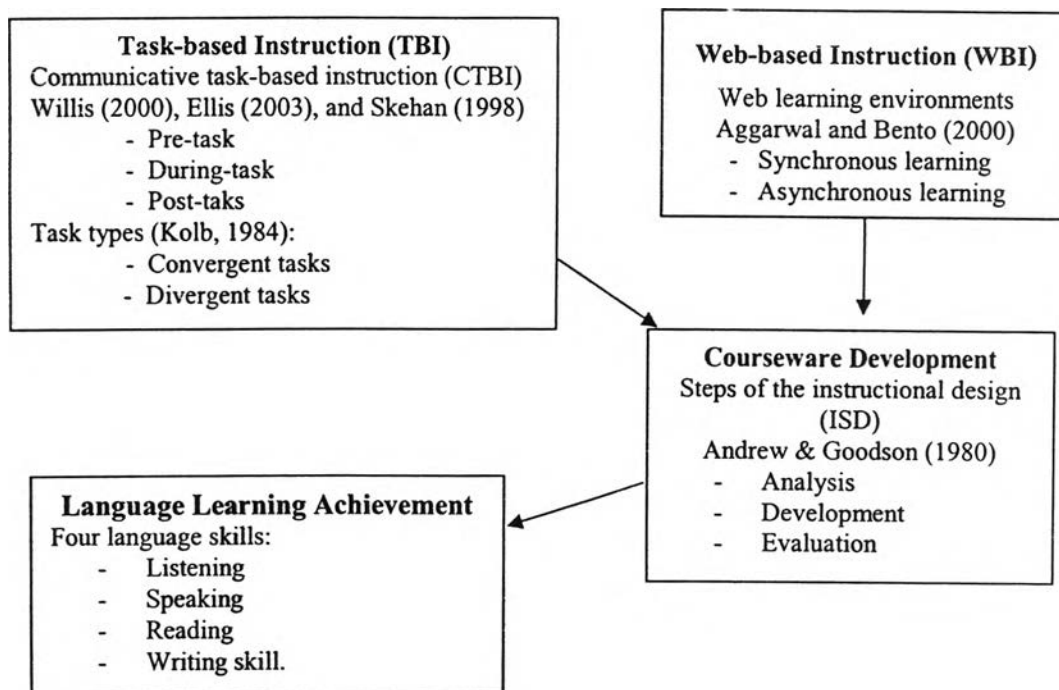
From research question number three, the concept that the effect of Web-based learning environments (SL and ASL) can cause effect on task-based learning achievement constitutes the third hypothesis.

Web-based learning environments are reported to cause higher language learning achievement by several studies such as the studies of Thirunarayanan and Perez-Prado (2002), Fu (2002), and Rama (1998). Some studies also reported that synchronous and asynchronous communication technologies had effects on task-based language learning in a positive way, such as Nakamishi's study (2003) on a divergent problem-solving task in a Web-based environment. Smith (2001) studied the effects of task-based synchronous learning. The results of both studies indicated that students showed a positive attitude towards learning. Though the findings of these studies did not indicate a better learning achievement, there were some studies indicating that positive attitude/motivation could lead to better learning achievement (Naccarato 1988, Guthrie 1997, and Rezabek 1995). Consistent with Kerr and Murphy (2005), they found that there was an interaction effect between WBI and TBI. Thus, the third hypothesis is stated as follows:

Hypothesis 3

There is an interaction effect among convergent and divergent tasks and synchronous and asynchronous Web-based learning environments on English language learning achievement.

Research Framework



The design of this Web-based course is within the following framework:

1. Task-based Instruction

The framework to implement communicative task-based instruction (CTBI) in this study followed the proposal of Willis (2000), Ellis (2003), and Skehan (1998). They all referred to task-based teaching as an approach based on the use of tasks as the core unit of planning an instruction in language learning. According to Richards and Rodgers (2001), communicative task-based instruction was regarded as a recent version of a communicative methodology that sought to reconcile methodology with current theories of second language acquisition. This framework consisted of three stages namely: (1) pre-task, (2) during-task, and (3) post task.

The pre-task stage covered teaching, conscious raising and planning to develop and receive the concerned language repertoire leading learners to the target language outcome.

The during-task stage provided opportunity for all learners to use whatever language they could master, to work simultaneously, in pairs or small groups, to achieve the goals of the task.

The post-task stage provided feedback and comments to drive student's language development forward and gave them new insights into language use.

The specific types of tasks selected in this study were convergent and divergent tasks. The general goal aimed at developing learners' language proficiency through communication by using tasks as a work plan.

Following Kolb (1984), the terms convergence and divergence were defined as the knowledge in experiential learning theory and developed into learning and cognitive styles (Kolb,1984: 61-90). Convergent task refers to tasks which all participants have the same goal as a regarded outcome. Divergent task refers to tasks which goals are different.

2. Web-based Instruction (WBI)

Web-based instruction was classified as one type of distance education. According to Abbey (Abbey, 2000: 44-45), Web-based instruction was the teaching and learning in electronic environments that used Web sites as purely delivery of information. It was a hypermedia-based instruction program which utilized the attributes and resources of the World Wide Web to create a meaningful learning environment where learning was fostered and supported. The method of manipulation

was scrolling and clicking with a mouse rather than turning pages by hand and the ability to pursue information was supposedly non-linear. The goal was for providing lifelong quality learning to as many students as possible without limitation of time, place, language, and individual economic status.

This study focused on two types of Web-based learning environments: synchronous and asynchronous. Following the classification of Aggarwal and Bento (2000:4), synchronous learning environments were enriched with live Internet connections, the Web was used to support or simulate lectures, case discussions and classroom interactions such as serving as platform for simultaneously delivering presentations (text, audio and video) to students in a class enabling real-time discussions through text-based technologies such as ChatRooms and Webboards. Asynchronous learning environments allowed students to benefit from anytime/anyplace flexibility of correspondence courses associated with asynchronous modes of instruction. Students learnt from home, office, or wherever they were, by accessing Web-based lectures, tutorials, materials, and books, completing and submitting Web-based assignments, exercises and interacting in Web-based forums. They interacted asynchronously outside of class with their classmates, teams and instructors through Webboard or using other WBI components stated by Khan (1997) such as e-mail.

Implementing task-based learning within the WBI was by utilizing technology to link classroom learning with language use outside the classroom to accomplish real-world goals of students. Technologies provided collaborative learning environments and interactive skill-based programs. The instructional design model used for this Web-based courseware followed Andrew and Goodson's General Instructional Design Model (1980). It consisted of analysis, development, and evaluation.

3. English Language Learning Achievement

The meaning of 'achievement' as defined by Brindley (1991: 153-66) referred to the achievement of particular communicative objectives as part of a given course or unit of instruction. The focus was on language functional proficiency. The criteria which formed the basis of the assessment related to the ability to perform specific communicative tasks following the concepts of Bachman (1990), Bachman & Palmer (1996), Alderson and others (1995) that foreign/ second language test contained skills and component framework proposed by Canale, Swain, Savignon (Canale & Swain,

1980, Canale 1983, Savignon 1972, 1983 cited in Bachman, 1990). The component framework included communicative language ability and communicative language use. The language ability included the characteristics of language performance in non-test situations.

The objectives of the course aimed to provide English in all four language skills. The construct of a listening skill sub-test was an objective test following Hughes (1989) to measure macro-skill listener functions. The construct of a reading skill sub-test was an objective test following taxonomies for assessing reading comprehension skill proposed by Alderson & Lukmani (1989). The construct of a speaking skill sub-test followed Cohen's (1994) socio-cultural ability. The speaking test consisted of direct and indirect testing. Cohen and Olshtain's scales were used for scoring the direct speaking ability. The writing skill sub-test was a subjective test following Cohen and Olshtain's communicative ability (Cohen, 1994). The test used Cohen's a holistic assessment scales as assessment criteria for scoring.

Scope of the Study

1. The population of this study was undergraduate students at Kasetsart University.
2. The implementation of tasks in this study was designed under the framework of communicative task-based instruction (CTBI) with the focus on performing convergent and divergent tasks as the task outcomes.
3. The network for the Web-based learning was Nontri Network, and the HTTP servers used in this study were Maxlearn and e-course servers.
4. The independent variables in this study are task-based instruction (convergent and divergent tasks) and Web-based instruction (synchronous and asynchronous learning environment) whereas the dependent variables are scores from English language learning achievement.

Limitations of the Study

Only two campuses of Kasetsart University were selected for this study. They were Bangkok and Kamphaeng Saen Campus. Since other campuses did not have the infrastructure ready for Web-based instruction.

Assumption of the Study

1. The subjects of this study had experience using computer since they were in their secondary school and they took a training course using the network when they were in their first year at KU. Thus, it was presumed that the subjects had adequate computer competency to engage in a Web-based learning.

2. Learning materials provided for the four Web-learning modules do not trigger higher scores in the achievement tests either in SL or ASL.

Definitions of Terms

1. Web-based instruction (WBI)

According to Abbey (2000), Web-based instruction is the teaching and learning in electronic environments that use Web sites for delivery of information. This is a hypermedia-based instruction which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported. The distinctive dimensions of synchronous (real time) and asynchronous (delayed time) Web-based learning are time and place.

2. Synchronous learning (SL)

Synchronous learning is the teaching and learning environment that occurs at the real time of communication. The synchronous or complex approach involves the use of two-way telecommunication technologies to provide 'face-to-face' interaction. The synchronous learning in this study used ChatRoom and a live Webboard as communication tools under Kasetsart University network. Students have to use their accounts provided by university to access the learning materials.

3. Asynchronous learning (ASL)

Asynchronous learning is a learning environment of which the communication is time-dependent (deferred time). It is more self-paced. Students have 24-hour-a-day access to stored data or information. Technologies used do not require participants to be present simultaneously such as e-mail and a Webboard. The asynchronous learning in this study used Webboard and e-mail as communication tools under Kasetsart University network. Similar to synchronous learning, students have to use their accounts provided by university to access the learning materials. The university central repository stores course information and student profiles which help teacher check student attendance.

4. Task-based instruction (TBI)

Task-based instruction is an approach based on the use of tasks as the core unit of planning an instruction in language learning. TBI in this study is communicative task-based instruction (CTBI). According to Ellis (2003), CTBI is a version of task-based instruction (TBI). It is regarded as a recent version of a communicative methodology that seeks to reconcile methodology with current theories of second language acquisition (Richards and Rodgers. eds., 2001).

5. Convergent tasks

Convergent tasks refer to tasks in which all participants have the same goal as a regarded outcome. They allow for collaboration in meaning negotiation; thus, collaborative work is required. In terms of questioning, convergent questions require only one correct answer or short answers which are not highly cognitively demanding, there is no reference making in convergent questions.

6. Divergent tasks

Divergent tasks are the tasks that require new significant knowledge and various outcome options. Thus, there can be more than one goal. These types of tasks allow independent work in which individuals can perform the tasks differently according to their cognitive styles which might lead to different outcomes. Questioning in divergent tasks will encourage students to generate the questions for which there is more than one correct answer. The questions are cognitively demanding such as in making inferences.

7. English language learning achievement

English language learning achievement is perceived by the scores from the achievement test constructed by the researcher. Part One and Part Two of the test are given at the end of each treatment respectively.

Significance of Study

1. To be the theoretical contribution for designing Web-based courses in English at Kasetsart University and other institutions where English is taught via the Web.
2. To increase awareness of selecting types of task when designing a task-based course.
3. To exploit the information and communication technology (ICT) in language teaching and learning.