

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the details about the procedures and the methodology of the research study.

3.1 Statement of Hypotheses

3.1.1 There are significant relationships between cognitive and metacognitive strategies and student performance on the EIL CBT.

3.1.2 There are significant differences in the use of cognitive and metacognitive strategies across high and low-listening-ability groups.

3.2 Population

The population in the study was 557 fourth-year Chulalongkorn University students from the faculty of Commerce and Accountancy of any majors. The students from this faculty were selected because they were about to graduate, so they should have been aware of the importance of English language proficiency for their career paths. Moreover, the students had been exposed to four business-oriented English courses. They learned English language and vocabulary in various business contexts. There were six English courses offered in the faculty of Commerce and Accountancy: two Foundation English courses, two Business English Writing courses and two Business English Oral Communication courses. Some of the students had been exposed to English through other means outside classes, such as from tutoring schools, media, traveling, studying abroad, etc.

Moreover, students were computer literate or at least possessed basic skills in using the computer, e.g. using the mouse, the keyboard, etc. A computer tutoring guide

was given to them before the examination to ensure their familiarity with the format of the EIL CBT.

3.2.1 Samples

Students selected to participate in this study varied in terms of their majors. There were 34 students taking part in the first stage of instrument validation and the pilot study. The main study involved 186 students, who volunteered to participate as test takers. However, the number of the samples that were chosen, based on the criterion, to represent the students of high-listening and low-listening-ability groups was 66; 30 from the first and 36 from the latter.

3.2.2 Sample selection

The selection of samples from the whole population was done by means of a volunteer basis. After the test was taken, student performance was justified by the scores they obtained from the EIL CBT. In other words, the scores obtained from the test were used as a criterion to determine students' level of proficiency, and to divide them into three groups, namely high, intermediate, and low ability groups. Only the scores of the high and the low-listening-ability groups were used in the study. The score of high-ability students was set at or above 1 S.D. of the mean score. The score of low-ability students was set at or below - 1 S.D. of the mean score. The stated criteria were determined after considering the students' raw scores and their English grade point average.

The mean and the standard deviation of the scores of the high-listening-ability group were 42.200 and 2.310, respectively, whereas the low-listening-ability groups' mean score and the standard deviation of their scores were 20.420 and 2.523, respectively. The unequal number of the participants in each group (30 from the high-listening-ability group and 36 from the low-listening-ability group) was due to the method of sample selection that was based on the standard deviation. All participants whose scores fell at or above 1 S.D. and those whose scores were at or below - S.D. of the mean score were all counted in. Levene's Test for Equality of Variances confirmed equal

variance assumed as presented in Table 3.1. No significant difference between the scores of the high-listening-ability group and the low-listening ability group was found.

Table 3.1
Levene's Test for Equality of Variances of the Two Sample Groups

	F	Sig.	t	df
Equal variances assumed	1.486	.227	-36.280	64

3.3 Research Instruments

There were two types of research instruments used in this study: a standardized English listening test and developed instruments.

3.3.1 Standard Listening Test (SLT)

In this study, the CULI Test of English for Professional and International Communication (CULI Test PIC) was used as a standardized test to validate the EIL CBT.

3.3.1.1 Description of the CULI Test PIC

The CULI Test PIC consists of five parts (fifty items), namely photographs, question-response, news and announcements, short conversations, and short talks.

- **Part I** (photographs): This part tests students' understanding of spoken English. There are ten photographs. The students hear four short statements and choose only one statement that best describes the pictures.

- **Part II** (question-response): The students hear ten questions spoken in English, followed by three responses, which are not printed. They have to choose the best answers to those questions.

- **Part III** (news and announcements): This part contains five pieces of short news or announcements spoken by one person. The students hear the questions concerning those excerpts and have to choose the best answers.
- **Part IV** (short conversations): The students have to listen to short conversations between two people. They then hear the questions, which are not printed, and have to choose the right answers to those questions.
- **Part V** (short talks): The last section consists of three short talks spoken by one person on a general topic. The questions and the four choices are printed in the booklet.

In all parts, the students were allowed to listen only once. The CULI Test PIC was validated against the TOEIC test. The reliability coefficient (KR-20) of three forms of the CULI Test PIC is .893, .93 and .926 respectively. (The values were provided by Chulalongkorn University Language Institute.)

3.3.2 Developed instruments

There are four instruments that are developed by the researcher: the English as an International Language Computer-based Listening Test (EIL CBT), the EIL CBT questionnaire, the cognitive and metacognitive questionnaire and retrospective interviews.

3.3.2.1 The EIL CBT

The EIL CBT was created based on the CULI TEST and the TOEIC Test. However, it also includes the note taking parts that are not integrated in to both tests.

3.3.2.1.1 Descriptions of the EIL CBT

The EIL CBT is composed of four parts (fifty items). The time allowed to take the test is 60 minutes. Students have to manage their own time.

- **Part I**: Listening to questions or statements and choosing appropriate answers
- **Part II**: Listening to short excerpts and answering questions by choosing appropriate answers or putting answers in the correct order
- **Part III**: Listening to short excerpts and completing notes (note taking is allowed)

-**Part IV:** Listening to longer conversations or excerpts and answering questions (note taking is allowed)

It aims at testing language use in everyday life and at work; therefore, it includes most of the topics that concur with those found in the TOEIC test as listed below.

- **Corporate Development:** research, product development
- **Dining out:** business and informal lunches, banquets, receptions, restaurant reservations
- **Entertainment:** cinema, theater, music, art, exhibitions, museums, media
- **Finance and Budgeting:** banking, investments, taxes, accounting, billing
- **General Business:** contracts
- **Health:** medical insurance, visiting doctors, dentists, clinics, hospitals
- **Housing/Corporate Property:** construction, specifications, buying and renting, electric and gas services
- **Manufacturing:** assembly lines, plant management, quality control
- **Offices:** board meetings, committees, letters, memoranda, telephone, fax and e-mail messages, office equipment and furniture, office procedures
- **Personnel:** recruiting, hiring, retiring, salaries, promotions, job applications, job advertisements, pensions, awards
- **Purchasing:** shopping, ordering supplies, shipping, invoices
- **Technical Areas:** electronics, technology, computers, laboratories and related equipment, technical specifications
- **Travel:** trains, airplanes, taxis, buses, ships, ferries, tickets, schedules, stations, airport announcements, car rentals, hotels, reservations, delays and cancellations

In addition, various accents, i.e. British, American, Chinese, Thai, and European were incorporated. The next section indicates the specification of the EIL CBT. It gives details about the test takers. The purpose of the test, the time allotment, the format of the test, the listening constructs to be tested as well as the task types included.

Test Specifications

Test takers: Fourth-year Commerce and Accountancy students, Chulalongkorn University

Purpose of the test: To assess students' listening ability of everyday and business-type English.

Time: 60 minutes

Format: CD (multiple-choice, short answer, put answer in order, note completion); the speakers are both native and non-native speakers of English.

The following table summarizes the specification of the test.

Table 3.2
Listening Constructs and Task Types of the EIL CBT

Listening constructs	EIL CBT task types
<p>1. Direct meaning comprehension</p> <ul style="list-style-type: none"> ● listening for main idea(s) ● listening for specific details ● determining speaker's attitude towards the topic when is obvious from the text <p>2. Inferred meaning comprehension</p> <ul style="list-style-type: none"> ● making inferences from the verbal input when the information is not obvious 	<p>Part I</p> <ul style="list-style-type: none"> ● Listen to questions and choose appropriate answers (15 items) <p>Part II</p> <ul style="list-style-type: none"> ● Listen to short excerpts, e.g. announcements, instructions, advertisements and choose correct answers/ pictures (15 items)

Table 3.2 (continued)

Listening Constructs and Task Types of the EIL CBT

Listening Constructs	EIL CBT Task Types
<p>3. Contributory meaning comprehension (microlinguistic)</p> <ul style="list-style-type: none"> ● knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context ● distinguishing minimal pairs or similar vocabulary in context ● understanding syntactic structure of the sentence and clause, e.g. negation, modification ● understanding grammatical cohesion and references <p>4. Listening and taking notes</p> <ul style="list-style-type: none"> ● Extracting salient points to summarize the whole text, reducing what is heard to an outline of the main points and important details ● extracting relevant key points from a text on a specific idea or topic 	<p>Part III</p> <ul style="list-style-type: none"> ● Listen to short excerpts, e.g. phone calls, announcements, and fill the answers in the blank in the note provided. (10 items) <p>Part IV</p> <ul style="list-style-type: none"> ● Listen to longer excerpts, e.g. conversations and choose correct answers (10 items)

The program also integrated the cognitive and metacognitive questionnaire that was set to appear after each 5 or 6 questions depending on the continuity of questions items. For example, if questions 25 and 26 relied on the same talk, then the questionnaire would appear after question number 26 instead of question number 25. The questionnaire is a checklist from which students were required to select the most

important three strategies that they used when answering each test item. The number of the strategies was based on the average number of the strategies employed to complete each test task by both experts and students during the pilot study. The experts' answers on the questionnaire concerning whether three strategies were sufficient were also taken into consideration, and the majority showed satisfaction. More details will be discussed in the questionnaire part.

3.3.2.1.2 Test validation

The instrument went through the validation processes called priori and posteriori processes.

In the priori stage of the EIL CBT validation, there were three main steps: specification of the constructs, development of the test, and first revision.

- Specifications of the constructs

The listening constructs proposed by Weir (1993) and Aitken (1978) in Buck (2001) were used as criteria to analyze which constructs should be included in the EIL CBT. To support the researchers' frameworks, the constructs of the listening part in various standardized tests, including TOEFL, TOEIC, IELTS, Cambridge Proficiency Test (ALTE/BULATS), CU-TEP and CULI Test PIC, were also explored. Finally, the listening constructs of the EIL CBT were proposed in Table 3.3.

Table 3.3
Listening constructs

Listening constructs
<p>1. Direct meaning comprehension</p> <ul style="list-style-type: none"> ● listening for main idea(s) ● listening for specific details ● determining speakers' attitudes towards the topic when obvious from the text
<p>2. Inferred meaning comprehension</p> <ul style="list-style-type: none"> ● making inferences from the verbal input when the information is not obvious
<p>3. Contributory meaning comprehension (microlinguistic)</p> <ul style="list-style-type: none"> ● knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context ● distinguishing minimal pairs or similar vocabulary in context ● understanding syntactic structure of the sentence and clause, e.g. negation, modification ● understanding grammatical cohesion and references
<p>4. Listening and taking notes</p> <ul style="list-style-type: none"> ● extracting salient points to summarize the whole text, reducing what is heard to an outline of the main points and important detail ● extracting relevant key points from a text on a specific idea or topic to complete the note

The listening constructs that the EIL CBT followed consisted of four major areas: direct meaning comprehension, inferred meaning comprehension, contributory meaning comprehension, and listening and taking notes.

The first construct, 'direct meaning comprehension', included listening for main ideas, listening for specific details and determining speakers' attitudes towards the topics. Listening for main ideas referred to test takers' ability to grasp the main idea or find the main point of an auditory input. Listening for specific details referred to test takers' ability to capture specific details that they were asked on the test. Thirdly, determining speaker's attitudes referred to test takers' ability to make generalization of what speakers' thoughts or opinions were.

The second construct, 'inferred meaning comprehension', dealt with test takers' ability to infer from spoken contexts where information was not directly or explicitly presented.

The third construct, 'contributory meaning comprehension', consisted of four sub-constructs. Firstly, test takers were assessed on their knowledge of vocabulary and their selection of proper vocabulary for particular contexts. Secondly, they were assessed on their ability to distinguish minimal pairs or any similar vocabulary presented in the test. Thirdly, they were tested whether they were able to understand syntactic structure of sentences and the grammatical cohesion and references presented in spoken texts.

The last construct, 'listening and taking notes', included an assessment on their ability to extract main points to summarize texts and their ability to choose relevant key points from the text to complete notes.

- Development of test

After the specification of constructs, a test was developed and experts provided their comments for further revision. There were 5 experts, who validated the test constructs against the test items whether their claims to test certain listening constructs were valid. The table below shows the listening constructs and the test items. In the pilot study, the test contained 70 questions as shown in Table 3.4.

Table 3.4
Listening Constructs and Test Items for the Pilot Study

Listening constructs Aitken (1978), Buck (2001), Weir (1993), etc.	Question No.
<p>1. Direct meaning comprehension</p> <ul style="list-style-type: none"> ● listening for main idea(s) ● listening for specific details ● determining speakers' attitudes/intentions towards the topic when obvious from the text 	<ul style="list-style-type: none"> ● 26, 36, 37, 39 ● 22, 27, 29, 32, 35, 56, 57, 58, 59, 63, 64, 67, 69 ● 8, 10, 12, 14, 19, 40, 68
<p>2. Inferred meaning comprehension</p> <ul style="list-style-type: none"> ● making inferences from the verbal input when the information is not obvious 	<ul style="list-style-type: none"> ● 2, 11, 16, 25, 28, 33, 34, 50, 60, 65, 70
<p>3. Contributory meaning comprehension (microlinguistic)</p> <ul style="list-style-type: none"> ● knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context ● distinguishing minimal pairs or similar vocabulary in context ● understanding syntactic structure of the sentence and clause e.g. negation, modification, question words ● understanding grammatical cohesion and references 	<ul style="list-style-type: none"> ● 6, 9, 24, 61, 62 ● 1, 15, 21, 30 ● 3, 4, 5, 7, 13, 17, 18, 20, ● 23, 31, 38, 66
<p>4. Listening and taking notes</p> <ul style="list-style-type: none"> ● extracting salient points to summarize the whole text, reducing what is heard to an outline of the main points and important details ● choosing relevant key points from the text to complete the note 	<ul style="list-style-type: none"> ● 51, 52, 53, 54, 55 ● 41, 42, 43, 44, 45, 46, 47, 48, 49

Examples of test items relevant to the listening constructs are provided below.

1. Direct meaning comprehension:

- Listening for main idea(s)

Script: Good evening ladies and gentlemen. Welcome to the Bangkok Theatre. In consideration of the cast members and the audience, we would like to ask that you please turn off all electronic devices to avoid any disruption during the performance. At the intermission, you can enjoy coffee and a variety of snacks in the lobby. Thank you again and I hope you enjoy the show.

26. According to the announcement, which sign should be posted at the Bangkok Theatre?

- A. A sign reading 'No drinks allowed'
- B. A sign reading 'No snacks allowed'
- C. A sign reading 'No mobile phones and beepers'
- D. A sign reading 'No smoking'

- Listening for specific details

Script: DJ: It's time for the latest weather forecast.

Announcer: Good morning. It's going to be another nice day for most of us. For people in the southern part of Thailand, today will be a perfect day for outdoor activities. The temperature will reach twenty nine degrees Celsius by mid-afternoon. But for people in Bangkok, don't forget to take your umbrella with you...

32. Which picture matches the weather forecast the best?

(Each answer shows a picture of Thailand with weather symbols.)

- A. Bangkok- rain and the South- rain
- B. Bangkok- rain and the South- sunny
- C. Bangkok- sunny and the South- sunny
- D. Bangkok- sunny and the South- rain

- Determining speakers' attitudes/intentions

Script:

A: Where do you usually take your clients for entertainment?

B: Well, I usually take them to dinner first. The place I choose must be a good restaurant where they serve good food and where we can enjoy good atmosphere.

After that I may take them to a bar or a club to have a few drinks. But this is up to them.

A: Do the business people in the United States enjoy drinking alcohol?

B: Actually, not many people do. Especially, during lunchtime, I always avoid alcoholic drinks. Those drinks make me feel sleepy.

A: Have you ever invited clients to your home?

B: I've done that a lot lately. My wife and I cooked dinner for them. Sometimes we have a small barbecue party. That was really good fun. For those who came from overseas, I sometimes invite them to spend the weekend at my house. And they really enjoy it.

A: Do you think entertaining clients is important?

B: To me, it is extremely important. A warm welcome can make overseas clients feel more relaxed and feel at home. Often people who come from other countries might be confused or experiencing culture shock. They need someone to show them around. In such situations, I have the opportunity to show them that they are very important and we are really thankful to have them as our customers.

68. What is probably the man's attitude towards bringing the clients to his home?

- A. He only feels like taking V.I.P.s to his house.
- B. He thinks bringing them home is very tiring.
- C. He loves holding a party for them at his house.
- D. He believes that his clients are bored with him.

2. Inferred meaning comprehension

- Making inferences from the verbal input

2. Whew! It is very warm in here.

- A. Let's turn on the air condition.
- B. We've had a lot of rain lately.
- C. I'd prefer to have a meeting in this room.
- D. A jacket can keep you warm.

3. Contributory meaning comprehension

- Knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context

6. Could you give me a ride tonight?

- A. I can't lend you my motorbike.
- B. I didn't bring my car either.
- C. I'll come home tonight.
- D. I drive very carefully at night.

- Able to distinguish minimal pairs or similar vocabulary in contexts

1. What do you think about this dessert?

- A. I've been to the Sahara once.
- B. It's too sweet for me.
- C. I'd like to have it right now.
- D. I'll have salad first

- Understanding syntactic structure of the sentence and clause

13. Do you know whether the contract was signed?

- A. Last week, I guess.
- B. I'm sure it was.
- C. It was very warm.
- D. It wasn't fair at all.

- Understanding grammatical cohesion and references

Script: First I have to discuss with the customers what they want to advertise and what their target group of customers is. The types of products and customers must be considered first. Then, I do market research to investigate customers' needs. After that we produce some first drafts of the advertisement. Before we produce the final design, we ask the customers to choose the first drafts they like the most.

31. Put the responsibilities in order by matching the answers with the steps on your left.

1.

* choose the first drafts

2.

* identify the target customers

3.

* produce the final design

4.

* do the market research

4. Listening and taking notes

- Able to extract salient points to summarize the whole text

Script: The student is writing an e-mail to tell his cousin in Australia about his trip.

Choose the appropriate words to summarize the conversation you have just heard.

Dear Joe,

How are you? I came back from the trip to the States last night. I really enjoyed the whole trip, except when I passed through the Customs and Immigration Office. I was repeatedly (51) a. examined b. referred to c. questioned d. complained about the contents of my luggage. And then I was sent to (52) a. another immigration officer b. a policeman c. the second floor d. a guest room. I felt like I was a criminal or a drug dealer. After thoroughly examining my passport, the officer then (53) a. knew I was just a kid b. opened my luggage c. let me through d. called the place I'd stay.

I was so angry because I was treated badly while other European passengers weren't. I think it's because of their (54) a. manner b. security system c. policy d. attitude towards the Asian people. Do you know what these people need? Training. They need some training because this certainly is a (55) a. minor b. cultural c. terrorism d. unsolved issue.

- Able to choose relevant key points from the text to complete the note

Script: Now complete the following form by typing the correct answers.

Date: 26/8/04

To: Mr. Chung

Message:

Mr. Chung, I made an appointment with the staff at the apartment for you. Details are as follows:

Apartment's name: Sukumvit Exclusive Apartment

Location: Soi Sukumvit _____ (41)

Type of room: _____ (42)

Price: _____ (43) per month

Facilities: gym and _____ (44)

Date of appointment: _____/8/04 (45)

Time of appointment: 10:00 am.

In addition to the listening constructs, the topics that set the context of the EIL CBT were analyzed and confirmed by the 5 experts as presented in the following table.

Table 3.5

Topics and Test Items for the Pilot Study

Topics	Question No.
1. Corporate Development: research, product development	31
2. Dining out: business and informal lunches, banquets, receptions, restaurant reservations	1, 12, 66, 67, 68, 69, 70
3. Entertainment: cinema, theater, music, art, exhibitions, museums, media	8, 26,
4. Finance and Budgeting: banking, investments, taxes, accounting, billing	30, 56, 57, 58, 59, 60
5. General Business: contracts, plans	13, 20

Table 3.5 (continued)

Topics and Test Items for the Pilot Study

Topics	Question No.
6. Health: medical insurance, visiting doctors, dentists, clinics, hospitals	7, 16, 38,
7. Housing/Corporate Property: construction, specifications, buying and renting, electric and gas services	15, 19, 27, 28, 41, 42, 43, 44, 45
8. Manufacturing: assembly lines, plant management, quality control	
9. Offices: board meetings, committees, letters, memoranda, telephone, fax and e-mail messages, office equipment and furniture, office procedures	3, 4, 5, 36, 37
10. Personnel: recruiting, hiring, retiring, salaries, promotions, job applications, job advertisements, pensions, awards	14, 29
11. Purchasing: shopping, ordering supplies, shipping, invoices	9, 61, 62, 63, 64, 65
12. Technical Areas: electronics, technology, computers, laboratories and related equipment, technical specifications	10, 23, 33
13. Travel: trains, airplanes, taxis, buses, ships, ferries, tickets, schedules, stations, airport announcements, car rentals, hotels, reservations, delays and cancellations	21, 22, 39, 40, 51, 52, 53, 54, 55
14. General topics: weather, socializing, workshop	2, 6, 11, 17, 18, 24, 25, 32, 34, 35, 46, 47, 48, 49, 50

Examples of test items relevant to the topics are provided as follows:

1. Corporate Development: research, product development

Script: First I have to discuss with the customers what they want to advertise and what their target group of customers is. The types of products and customers must be considered first. Then, I do market research to investigate customers' needs. After that, we produce some first drafts of the advertisement. Before we produce the final design, we ask the customers to choose the first drafts they like the most.

31. Put the responsibilities in order by matching the answers with the steps on your left.

1.

* choose the first drafts

2.

* identify the target customers

3.

* produce the final design

4.

* do the market research

2. Dining out: business and informal lunches, banquets, receptions, restaurant reservations

12. Do you mind if I order another cup of coffee?

- A. Yes. Can you order one for me too?
- B. Certainly. We need not to hurry.
- C. Of course not. We have plenty of time
- D. No thanks. I've had enough today.

3. Entertainment: cinema, theater, music, art, exhibitions, museums, media

8. How about going to the art exhibition at Jamjuree 8 building?

- A. The picture conveys emotions.
- B. That painting can tell stories.
- C. The sculptures are so life-like.
- D. I'd love to, but I have class.

4. Finance and Budgeting: banking, investments, taxes, accounting, billing

Script: Well, let me report the income from our computer sales for this month. The sales have been increasing continuously from sixteen million baht to sixteen point eight million baht. This is due to our new policy which makes the price more competitive in the computer market.

30. What is the computer sales figure for this month?

- A. sixteen million
- B. sixteen point eight million
- C. sixty million
- D. sixty point eight million

5. General Business: contracts

13. Do you know whether the contract was signed?

- A. Last week, I guess.
- B. I'm sure it was.
- C. It was very warm.
- D. It wasn't fair at all.

6. Health: medical insurance, visiting doctors, dentists, clinics, hospitals

7. How long have you had a sore throat?

- A. Twice a week.
- B. Next week.
- C. For a week.
- D. Very far.

7. Housing/corporate property: construction, specifications, buying and renting, etc.

Date: 26/8/04

To: Mr. Chung

Message:

Mr. Chung, I made an appointment with the staff at the apartment for you. Details are as follows:

Apartment's name: Sukumvit Exclusive Apartment

Location: Soi Sukumvit _____ (41)

Type of room: _____ (42)

Price: _____ (43) per month

Facilities: gym and _____ (44)

Date of appointment: _____/8/04 (45)

Time of appointment: 10:00 am.

9. Offices: board meetings, committees, letters, memoranda, telephone, etc.

Script: Good afternoon. Before we begin the meeting, I would like to introduce Mr. Wang, a senior sales representative from our Beijing branch. Mr. Wang will firstly report the sales figures of the previous fiscal year in China and provide us with some training. I am sure we have learned before that the Beijing branch has achieved the highest total sales of all the branches in Asia Pacific. Please welcome Mr. Wang.

37. The topic of the talk can be all of the following, EXCEPT...

- A. How to set up a meeting(This is the answer, right?)
- B. How to reach the sales target
- C. How to provide after-sales service
- D. How to supervise the sales team

10. Personnel: recruiting, hiring, retiring, salaries, promotions, job applications, etc.

Script: Thai Film is looking for an experienced Finance Manager. If you have more than 5 years film finance experience, good communication skills and the ability to work under pressure, you are who we are looking for. The applicants who have related degrees will

be called for an interview first. Call zero two five one four two six seven nine now for further details.

29. Who will probably get the job?

- A.

Name: Sarapee Last name: Sukdee
Education: Bachelor of Arts, English English major
Experience: None
Others: Good command of English
- B.

Name: Sirima Last name: Sitichai
Education: Diploma in Finance and Marketing
Experience: None
Others: Computer - Words, Excel
- C.

Name: Rena Last name: Kampan
Education: Bachelor in Finance
Experience: 4 years
Others: Interested in movies
- D.

Name: Ratana Last name: Sodcheon
Education: Bachelor in Commerce and Accountancy
Experience: 6 years
Others: Good interpersonal skills

11. Purchasing: shopping, ordering supplies, shipping, invoices

Script:

A: It's Paula's birthday next week. Let's go to the music section. I wanna buy her some CDs.

B: It's right over there. The music section is in the middle of the store, next to the escalator.

A: Wait! I forgot I gave her a CD last year. This year I'd better get her something different...er...maybe some perfume because she doesn't really like jewelry.

B: How about some clothes? I think she'd like them. Perhaps a t-shirt, a skirt or a pair of shoes.

A: I don't know her size. It won't be convenient for me or her to come back to exchange them.

B: Okay, so let's go to the perfume counters.

A: They are right there, opposite the jewelry and next to the plant section.

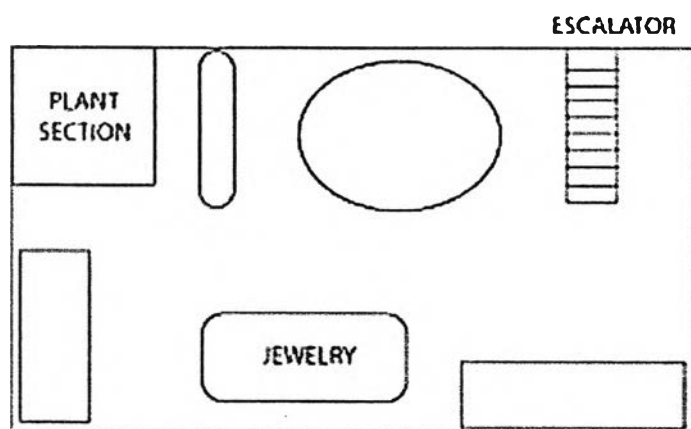
B: Wait! Look! Do you think that vase is pretty? I bet she'd love it.

A: But it's very expensive. Oh, this dish is nice...but I think I like the plate better. It's really hard to decide. Actually, I don't want to spend more than 800 baht.

B: Then, you don't want to buy perfume. It usually costs around 2,000 or even more. Well this set of dishes is 560 baht. The vase is 1,200 baht. That's too much. The plates cost 780 baht.

A: Well, the plates are beautiful, but they aren't worth that much. I think I'll take the dishes. I'm sure she'll love them.

61. Click on the map where the music section is.



12. Technical Areas: electronics, technology, computers, laboratories, etc.

Script: Philips Electronics said it was preparing to launch a slim, book-sized foldable screen. This screen can be rolled up into a pen-size holder. Customers can download newspapers, magazines, web pages, books or e-mail, then roll it up and put it away.

33. What can be inferred about the new computer screen?

- A. It is not portable but small.
- B. It must be kept in a special case.
- C. It must be soft and flexible.
- D. It has very limited functions.

13. Travel: trains, airplanes, taxis, buses, ships, etc.

Script: Today I read news about a forty-five-year-old Argentinean man whose name is Daniel Nunez. He has just developed a very amazing invention that is "a talking bus stop." His talking bus stop is an electric signpost that receives radio signals from buses when they approach. If a passenger waiting for a bus wants to know which bus is coming and whether it is the bus she is waiting for, she will push the button and the signpost will announce the bus route of the bus that is approaching. This is really a cool idea because we do not have to memorize the number of the bus and its routes. Most importantly, we will never get on the wrong bus.

39. What is the main job of the talking bus stop?

- A. To send radio signals to the buses
- B. To entertain the waiting passengers
- C. To give information about the coming buses
- D. To warn passengers not to get on a wrong bus

14. General topics: weather, socializing, workshop

17. Would you rather spend your New Year break abroad or in Thailand?

- A. Either would be fine.
- B. I would love to.
- C. Thailand is beautiful.
- D. The trip is expensive.

Apart from validating of the listening constructs and the topics that the test measured, the experts also provided additional comments for further revision. Some are listed as follows: Foreign accents must be selected with caution. The quality of voice for some question items should be improved. In addition, more variety of situations must be added into the test. Also, the length of the talks must be considered because the memory load could affect test takers' performance.

Since the EIL CBT is a computer-based test, consultation with experts in CALL was crucial. The 3 experts were asked to comment on various aspects such as interface

design, user friendliness, quality, etc. Overall, the experts thought that the EIL CBT possessed relatively good quality and was a creative use of computer. However, some suggestions were given. For example, there should be a button to direct the students back to the previous page in the introduction part. Also, consistency of where students could click when they chose an answer must be made; for example, clicking the pictures or clicking the boxes in front of the pictures. Moreover, some pictures were not clear so changes needed to be made.

- First revision

Taking the comments from two groups of experts into consideration, a first revision was made. After that, a trial on a group of students who were considered comparable to the target population of the study was conducted during the pilot study to ensure the quality of the test. The reliability coefficient (KR-20) gained from the Classical Test Item Analysis Program (CTIA) during the pilot study was .856.

Since the test also contained 14 items that were not multiple choice, the difficulty index (p), the discrimination index (d) and the Point-biserial correlation coefficient (RPB) were calculated by hand based on the following formulas:

$$\text{Item Difficulty Index (IDiff)} = \frac{N_{\text{correct}}}{N_{\text{total}}}$$

N_{correct} = number of students answering correctly

N_{total} = number of students taking the test

$$\text{Item discrimination Index (IDisc)} = IF_{\text{upper}} - IF_{\text{lower}}$$

IF_{upper} = item difficulty for the upper group on the whole test

IF_{lower} = item difficulty for the lower group on the whole test

$$\text{Point-biserial (RPB)} = \frac{\bar{x}_p - \bar{x}_q}{S_t} \sqrt{pq}$$

\bar{x}_p = mean on the whole test for those students who answered correctly

\bar{x}_q = mean on the whole test for those students who answered incorrectly

S_t = standard deviation for whole test

P = proportion of students who answered correctly on the whole test

q = proportion of students who answered incorrectly on the whole test

The item analysis indicated that some items needed to be improved, whereas some needed to be removed. The improvement was concerned with two main areas: the difficulty of the items and the discrimination of the items. The criteria suggested by Brown (1996) and Suphat Sukamolson (1999) were used. Regarding the difficulty of the items, the items that were too easy ($p > .90$) were item numbers 2, 40, 56 and 57. Those that were too difficult ($p < .20$) were item numbers 4, 13, 20 and 51. Furthermore, the Biserial value of less than .20 indicated that items 3, 10, 20, 22, 24, 25, 29, 40, 43, 47, 51, 53, 57, 60, 64 and 68 had to be revised since these items could not discriminate the students well. Moreover, there were also some items, i.e. 9, 13, 33, 41 and 56 that had negative Biserial values and question number 2 did not have discrimination power (See Appendix G).

After the item analysis, the following items were removed: 2, 3, 9, 13, 20, 24, 25, 33, 38, 40, 41, 43, 46, 51, 53, 56, 57, 60, 64, and 68 while others listed earlier were revised.

During the posteriori stage or the data analysis stage, the test was analyzed and improved. The steps included:

- Trial on samples

During the validation stage, the test was administered to 34 students, who represented the fourth-year students from the Faculty of Commerce and Accountancy.

- Estimates of reliability

To measure the concurrent validity of the EIL CBT, the students also had to take the CULI Test PIC (only the listening part). The reliability coefficient (Pearson) of the two tests was .796, which was significant at the level of .01. The value, which is less than .80, may be attributed to the number of the test takers, which was only 34.

- Consultation with experts

After finishing the tests, the students were required to complete the questionnaire concerning their personal data and their thoughts about the EIL CBT. If any threats to the reliability and the validity of the test were discovered, the experts were consulted to find appropriate solutions to those problems.

- Final Revision

Final revisions were made after the results of the statistical analyses of the test, and the comments of the experts were thoroughly considered.

After the test item analysis, 20 items were discarded and some items were revised. The CTIA program was used to explore the difficulty index (p), the discrimination index (d), the Biserial value (R_{bis}), and the reliability coefficient of the remaining items. The reliability coefficient (KR-20) of the EIL CBT after revision is .836. A slight decrease of the reliability coefficient value could be due to the reduction of the test items. The same criteria suggested by Brown (1996) and Suphat Sukamolson (1999) were used to evaluate the quality of each test item. The item analysis showed all items were subjected to the criteria set for the difficulty index. However, there were three items that are question numbers 16, 34 and 40 whose Biserial values were less than .20. This was a normal phenomenon since many evaluations and adaptations were needed to create a perfect test. In actual fact, the EIL CBT, after the first revision, showed a dramatic improvement (See Appendix H).

For the items that were not multiple choices (9 items), the following formulas were used to investigate the difficulty index (p), the discrimination index (d) and the Point-biserial correlation coefficient (RPB).

$$\text{Item Difficulty Index (IDiff)} = \frac{N_{\text{correct}}}{N_{\text{total}}}$$

N_{correct} = number of students answering correctly

N_{total} = number of students taking the test

$$\text{Item discrimination Index (IDisc)} = IF_{\text{upper}} - IF_{\text{lower}}$$

IF_{upper} = item difficulty for the upper group on the whole test

IF_{lower} = item difficulty for the lower group on the whole test

$$\text{Point-biserial (RPB)} = \frac{\bar{x}_p - \bar{x}_q}{S_t} \sqrt{pq}$$

\bar{x}_p = mean on the whole test for those students who answered correctly

\bar{x}_q = mean on the whole test for those students who answered incorrectly

S_t = standard deviation for whole test

P = proportion of students who answered correctly on the whole test

q = proportion of students who answered incorrectly on the whole test

Table 3.6 shows the final 50 items of the EIL CBT, and the constructs that the test items measure.

Table 3.6
Constructs and Test Items (final revision)

Listening constructs Aitken (1978), Buck (2001), Wier (1993), etc.	Question No.
<p>1. Direct meaning comprehension</p> <ul style="list-style-type: none"> ● listening for main idea(s) ● listening for specific details ● determining speakers' attitudes/intentions towards the topic where obvious from the text 	<ul style="list-style-type: none"> ● 19, 28, 29, 30 ● 16, 17, 20, 22, 25, 27, 41, 42, 45, 48, 49 ● 6, 7, 9, 10, 15
<p>2. Inferred meaning comprehension</p> <ul style="list-style-type: none"> ● making inferences from the verbal input where the information is not obvious 	<ul style="list-style-type: none"> ● 8, 21, 26, 37, 46, 50
<p>3. Contributory meaning comprehension (microlinguistic)</p> <ul style="list-style-type: none"> ● knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context ● distinguishing minimal pairs or similar vocabulary in context ● understanding syntactic structure of the sentence and clause, e.g. negation, modification, question words ● understanding grammatical cohesion and references 	<ul style="list-style-type: none"> ● 4, 43, 44 ● 1, 11, 23 ● 2, 3, 5, 13, 14 ● 12, 18, 24, 47
<p>4. Listening and taking notes</p> <ul style="list-style-type: none"> ● extracting salient points to summarize the whole text, reducing what is heard to an outline of the main points and important details ● choosing relevant key points from the text to complete the note 	<ul style="list-style-type: none"> ● 38, 39, 40 ● 31, 32, 33, 34, 35, 36,

Examples of test items relevant to the listening constructs presented in Table 3.5 are provided as follows:

1. Direct meaning comprehension

- Listening for main idea(s)

Script: Good evening ladies and gentlemen. Welcome to the Bangkok Theatre. In consideration of the cast members and the audience, we would like to ask that you please turn off all electronic devices to avoid any disruption during the performance. At the intermission, you can enjoy coffee and a variety of snacks in the lobby. Thank you again and I hope you enjoy the show.

19. According to the announcement, which sign should be posted at the Bangkok Theatre?

- A. A sign reading 'No drinks allowed'
- B. A sign reading 'No talks allowed'
- C. A sign reading 'No mobile phones and beepers'
- D. A sign reading 'No smoking'

- Listening for specific details

Script: Attention passengers. Attention passengers.

This is a final call for Thai Airways Flight 610 to Tokyo, boarding now at Gate 13. A final call for flight 610, boarding now at Gate 13.

16. At which gate will the passengers traveling to Tokyo wait for their departure?

- A. A picture of gate four
- B. A picture of gate thirteen
- C. A picture of gate fourteen
- D. A picture of gate thirty

- Determining speakers' attitudes/intentions towards the topic

7. I need somebody to find out whether it's malfunctioned again.

- A. The copy machine is multi-functioned.
- B. Nobody has used the machine lately.



- C. I'll contact the repairman immediately.
- D. Thank you very much for your advice.

2. Inferred meaning comprehension

- Making inferences from the verbal input

Script: Ok, take a look at this apartment. You can't deny that this apartment has it all: great views of the beach, perfect location and a complete interior makeover. But, the garden is obviously NON-existent. I think the garden which works best for this place is window dressing. Can you imagine...plants hanging down from windows? It'd be an even more perfect place to live!

21. Which magazine would probably match the content of the talk the best?
- A. A picture of a magazine entitled 'House and Garden'
 - B. A picture of a magazine entitled 'City Life'
 - C. A picture of a magazine entitled 'Traveling in Thailand'
 - D. A picture of a magazine entitled 'Furniture Design'

3. Contributory meaning comprehension

- Knowing the meaning of vocabulary and properly selecting vocabulary that fits particular context

4. Could you give me a ride tonight?

- A. I can't lend you my motorbike.
- B. I didn't bring my car either.
- C. I'll come home tonight.
- D. I drive very carefully at night.

- Able to distinguish minimal pairs or similar vocabulary in context

Script: Well, let me report the income from our computer sales for this month. The sales have been increasing continuously from sixteen million baht to sixteen point eight million baht. This is due to our new policy which makes the price more competitive in the computer market.

23. What is the computer sales figure for this month?

- A. sixteen million
- B. sixteen point eight million
- C. sixty million
- D. sixty point eight million

- Understanding syntactic structure of the sentence and clause

13. Would you rather spend your New Year break abroad or in Thailand?

- A. Either would be fine.
- B. I would love to.
- C. Thailand is beautiful.
- D. A long break is better.

- Understanding grammatical cohesion and references

12. After I had seen the doctor, I stopped coughing.

- A. It might be because of the medicine he gave you.
- B. So, the cough started after you saw the doctor.
- C. You shouldn't stop seeing the doctor.
- D. The doctor didn't examine your throat well.

4. Listening and taking notes

- Able to extract salient points to summarize the whole text

Dear Joe,

How are you? I came back from the trip to the States last night. I really enjoyed the whole trip, except when I passed through the Customs and Immigration Office. I was repeatedly questioned about the contents of my luggage. And then I was sent to (38) a. another immigration officer b. a policeman c. the second floor d. an investigation room. I felt like I was a criminal. After thoroughly examining my passport, the officer then let me through.

I was so angry because I was treated badly while other European passengers weren't. I think it's because of their (39) a. manner b. security system c. rules d. attitude towards the Asian people. Do you know what these people need? Training. They need some training because this certainly is a (40) a. major b. cultural c. terrorism d. unsolved issue.

- Able to choose relevant key points from the text to complete the note

Date: 26/8/04

To: Mr. Chung

Message:

Mr. Chung, I made an appointment with the staff at the apartment for you. Details are as follows:

Apartment's name: Sukumvit Exclusive Apartment

Location: Soi Sukumvit 53

Type of room: _____ (31)

Price: 25,000 baht per month

Facilities: gym and _____ (32)

Date of appointment: _____/8/04 (33) (TYPE NUMBER ONLY)

Time of appointment: 10 a.m.

As for the topics of the test items, the details are listed in the following table.

Table 3.7
Topics and Test Items (final revision)

Topics	Question No.
1. Corporate Development: research, product development	24
2. Dining out: business and informal lunches, banquets, receptions, restaurant reservations	1, 9, 47, 48, 49, 50
3. Entertainment: cinema, theater, music, art, exhibitions, museums, media	6, 19
4. Finance and Budgeting: banking, investments, taxes, accounting, billing	23, 41, 42
5. General Business: contracts	-
6. Health: medical insurance, visiting doctors, dentists, clinics, hospitals	5, 12
7. Housing/Corporate Property: construction, specifications, buying and renting, electric and gas services	15, 20, 21, 31, 32, 33
8. Manufacturing: assembly lines, plant management, quality control	-
9. Offices: board meetings, committees, letters, memoranda, telephone, fax and e-mail messages, office equipment and furniture, office procedures	2, 3, 28, 29
10. Personnel: recruiting, hiring, retiring, salaries, promotions, job applications, job advertisements, pensions, awards	10, 22
11. Purchasing: shopping, ordering supplies, shipping, invoices	43, 44, 45, 46
12. Technical Areas: electronics, technology, computers, laboratories and related equipment, technical specifications	7, 18
13. Travel: trains, airplanes, taxis, buses, ships, ferries, tickets, schedules, stations and airport announcement, car rentals, hotels, reservations, delays and cancellations	13, 16, 17, 30, 38, 39, 40
14. General topics: weather, socializing, workshop	4, 8, 11, 14, 25, 26, 27, 34, 35, 36, 37

Examples of the question items relevant to the topics presented in Table 3.6 are as follows:

1. Corporate Development: research, product development

Script: First I have to discuss with the customers what they want to advertise and what their target group of customers is. The types of products and customers must be considered first. Then, I do market research to investigate customers' needs. After that we produce some first drafts of the advertisement. Before we produce the final design, we ask the customers to choose the first drafts they like the most.

24. Put the responsibilities in order by matching the answers with the steps on your left.

1.

* choose the first drafts

2.

* identify the target customers

3.

* produce the final design

4.

* do the market research

2. Dining out: business and informal lunches, banquets, receptions, restaurant reservations

1. What do you think about this dessert?

A. I've been to the Sahara once.

B. It's too sweet for me.

C. I'd like to have it right now.

D. I'll have salad first

3. Entertainment: cinema, theater, music, art, exhibitions, museums, media

Script: Good evening ladies and gentlemen. Welcome to the Bangkok Theatre. In consideration of the cast members and the audience, we would like to ask that you

please turn off all electronic devices to avoid any disruption during the performance. At the intermission, you can enjoy coffee and a variety of snacks in the lobby. Thank you again and I hope you enjoy the show.

19. According to the announcement, which sign should be posted at the Bangkok Theatre?
- A. A sign reading 'No drinks allowed'
 - B. A sign reading 'No talks allowed'
 - C. A sign reading 'No mobile phones and beepers'
 - D. A sign reading 'No smoking'

4. Finance and Budgeting: banking, investments, taxes, accounting, billing

Script: Well, let me report the income from our computer sales for this month. The sales have been increasing continuously from sixteen million baht to sixteen point eight million baht. This is due to our new policy which makes the price more competitive in the computer market.

23. What is the computer sales figure for this month?
- A. sixteen million
 - B. sixteen point eight million
 - C. sixty million
 - D. sixty point eight million

6. Health: medical insurance, visiting doctors, dentists, clinics, hospitals

12. After I had seen the doctor, I stopped coughing.
- A. It might be because of the medicine he gave you.
 - B. So, the cough started after you saw the doctor.
 - C. You shouldn't stop seeing the doctor.
 - D. The doctor didn't examine your throat well.

7. Housing/corporate property: construction, specifications, buying and renting, etc.

15. The rent for this apartment is reasonable enough.

A. Good. When are you moving in?

B. If you don't like it, don't rent it.

C. I know that it's pretty expensive.

D. A small room is suitable for one person.

9. Offices: board meetings, committees, letters, memoranda, telephone, etc.

3. I found the revised report too lengthy.

A. It's in the faculty library.

B. You can ask for a copy from the teacher.

C. I turned the report in already.

D. Those details are too important to be excluded.

10. Personnel: recruiting, hiring, retiring, salaries, promotions, job applications, etc.

10. Well, why don't we change the pension plan?

A. Because we should change plan.

B. We started working on a new plan.

C. The old plan didn't work well.

D. That seems to be a good solution.

11. Purchasing: shopping, ordering supplies, shipping, invoices

Script:

A: It's Paula's birthday next week. Let's go to the music section. I wanna buy her some CDs.

B: It's right over there. The music section is in the middle of the store, next to the escalator.

A: Wait! I forgot I gave her a CD last year. This year I'd better get her something different...er...maybe some perfume because she doesn't really like jewelry.

B: How about some clothes? I think she'd like them. Perhaps a t-shirt, a skirt or a pair of shoes?

A: I don't know her size. It won't be convenient for me or her to come back to exchange them.

B: Okay, so let's go to the perfume counter.

A: It's right there, next to the jewelry counter and opposite the escalator.

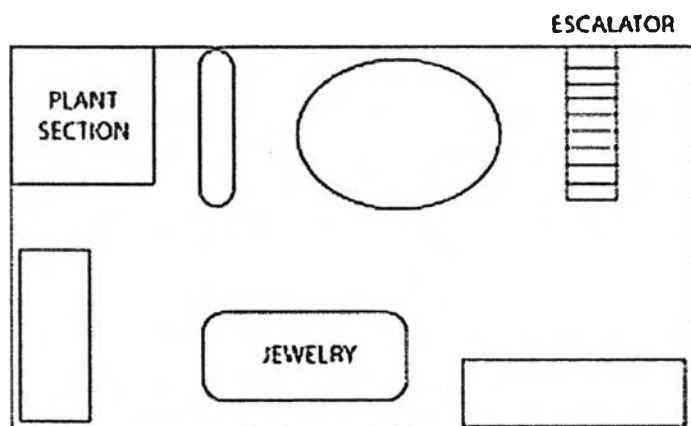
B: Wait! Look! Do you think that vase is pretty? I bet she'd love it.

A: But it's very expensive. Oh, this dish is nice...but I think I like the plate better. It's really hard to decide. Actually, I don't want to spend more than 800 baht.

B: Then, you don't want to buy perfume. It usually costs around 2,000 or even more. Well this set of dishes is 560 baht. The vase is 1,200 baht. That's too much. The plates cost 780 baht.

A: Well, the plates are beautiful, but they aren't worth that much. They are too expensive. I think I'll take the dishes. I'm sure she'll love them.

43. Click on the map where the music section is.



12. Technical Areas: electronics, technology, computers, laboratories, etc.

7. I need somebody to find out whether it's malfunctioned again.

A. The copy machine is multi-functioned.

B. Nobody has used the machine lately.

C. I'll contact the repairman immediately.

D. Thank you very much for your advice.

13. Travel: trains, airplanes, taxis, buses, ships, etc.

Script: Attention passengers. Attention passengers.

This is a final call for Thai Airways Flight 610 to Tokyo, boarding now at Gate 13. A final call for flight 610, boarding now at Gate 13.

17. What is TRUE about Flight 610?

- A. It's delayed due to heavy rain.
- B. It's the final flight for today.
- C. It's going to take off soon.
- D. It's a non-smoking flight.

14. General topics: weather, socializing, workshop

14. Do you still miss the weather in your country?

- A. No one.
- B. Not really.
- C. Nothing.
- D. None.

3.3.2.2 The EIL CBT Questionnaire

The following part discusses the details about the EIL CBT questionnaire.

3.3.2.2.1 Descriptions of the EIL CBT Questionnaire

It was a Likert scale questionnaire designed to collect students' background and their opinions towards the EIL CBT. The content and the construct of the questionnaire were primarily based on the questionnaires used to assess learners' attitudes towards the computer-based TOEFL test. However, adaptations were made to suit the context of the study.

The questionnaire was divided into three parts. The first and the last parts were open-ended questions. The second part was a Likert scale questionnaire consisting of 20 items.

1. personal information e.g. name, faculty, age, contact information
2. information about the test/tasks such as content, format and other elements
3. students' comments on the test or test tasks

The questionnaire was validated by the 5 experts. The Cronbach Alpha value of the questionnaire was .654. The relatively weak value might be attributed to the number of items.

3.3.2.3 The cognitive and metacognitive questionnaire

3.3.2.3.1 Descriptions of the cognitive questionnaire

The outline of cognitive strategies proposed in this study was derived from the synthesis of the frameworks of Derry and Murphy (1979), Oxford (1990), Thompson and Rubin (1996), Duzer (1997), and Purpura (1999). There are three processes of the cognitive strategies:

1. Analyzing and reasoning processes – students try to decode listening input through various ways of input analyzing
 - Analyzing contrastively: students use this strategy to distinguish what is similar or different between or among language elements. It can be related to a comparison of elements in the target language with the elements of their L1 or a language that they are familiar with
 - Inferencing: students infer from the context where the information is not obvious.
 - Making generalization: students make generalization or form hypotheses from the input they have heard
 - Translating from one language to another: students use the translation technique to tackle the comprehension problems

2. Knowledge associating processes – students try to draw the knowledge they store in their memory that is expected to be related to the new information

- Recombining meaningful phrases, patterns and small chunks of what they know: students try to understand by grouping the input into meaningful categories and making certain semantic connections between or among elements
- Linking with prior knowledge: students draw on their background knowledge and experience about something they are familiar with that will help enhance their comprehension. The prior knowledge can refer to their real world experience of a particular event, the knowledge of tone, voice, intonation, etc.
- Applying the rules: students try to understand the input by applying the rules they have learned or mastered

3. Information retrieving processes – students produce some output, which will help retain their memory of the information they have just listened to

- Repeating or imitating: students try to remember and understand the information they hear by repeating or imitating it
- Summarizing: students try to understand the input through written, oral or even mental summarizing techniques
- Taking notes: students take notes while listening so that they will be able to store the information they hear and retrieve it from their notes

3.3.2.3.2 Descriptions of the metacognitive questionnaire

Like the cognitive questionnaire, the metacognitive questionnaire is based on the views of various researchers towards what the metacognitive strategies consist of. The framework used in the research study was obtained from the synthesis of the framework proposed by O'Malley and Chamot (1990), Oxford (1990), Wenden (1991), Purpura (1999), Brown (2002) and NCLRC (2004). There are three processes activated during different stages of listening activities as shown below.

1. Planning processes

- Setting goals: Students choose and identify their goals before doing activities such as the purposes or the functions of listening

- Planning: Students decide which source of knowledge is needed to accomplish the listening tasks they are going to deal with

2. Monitoring processes

- Assessing situation: Students determine which approach to be used: the bottom-up or the top-down approach (in other words, they have to choose either to rely on the linguistic components of the input or the whole context of the input)
- Monitoring their performances: Students focus on their performance while taking the test; if they make guesses or predictions, they try to make sure that they are correct

3. Evaluating processes

- Evaluating: Students evaluate the effectiveness of their own performance during the activity; they determine if they use appropriate strategies or not; they also learn to evaluate the conditions assisting them to complete a language task
- Modifying: Students modify the strategies they use in order to improve their comprehension the next time

3.3.2.3.3 Questionnaire validation

To validate the cognitive and metacognitive questionnaire, the processes included priori validation and posteriori validation as proposed in the work of Weir, Huizhong, and Yan (2000). These processes were followed in order to ensure the reliability and the validity of the questionnaires.

The priori validation stage involved the researcher's preparation to write and develop a questionnaire. First of all, the population had to be clearly defined so that the components of a questionnaire, e.g. types of questions, layout appearance, etc. could be tailored to suit the respondents.

In the priori validation processes, there were two main steps, namely, specification of the constructs and development of the questionnaire.

- Specification of the constructs

Fraenkel and Wallen (1993) suggested that the variables, which were the focus of a study should be clearly defined.

Firstly, past literature concerning cognitive and metacognitive strategies was reviewed in order to create the learner strategy questionnaires. Also, issues reported in the past literature concerning other aspects related to the EIL CBT such as English as an international language and computer-based listening tests were compiled. The literature provided and specified the content needed to be included in the questionnaires. The framework of cognitive and metacognitive strategies is presented in Tables 3.8 and 3.9.

Table 3.8

Framework of Cognitive Strategies Concluded from Derry and Murphy (1979), Oxford (1990), Purpura (1999), Thompson and Rubin (1996) and Wenden (1991)

Cognitive Strategies
1. Analyzing and reasoning processes
1.1. analyzing contrastively : distinguishing what is similar or different between or among language elements; it can be comparing between the language elements in L1 and L2
1.2 inferencing : concluding from the context, where the information is not obvious
1.3 making generalizations : concluding from the context, where the information is obvious; this includes generalization and hypothesis formation by using the context, e.g. organization, tones, etc.
1.4 translating : translating what they hear in L2 to their L1
1.5 previewing : using pictures or questions to predict answers
2. Knowledge associating processes
2.1 recombining : recombining meaningful phrases, patterns or small chunks of L2 that they know and making certain semantic connections between or among elements
2.2 linking with prior knowledge : linking to their past experience or their background knowledge concerning the topic they hear
2.3 applying the rules : using the rules that they have learned or mastered
3. Information retrieving processes
3.1 repeating : repeating or imitating the input they hear so that they can remember what is said
3.2 summarizing : summarizing the input through written, oral or even mental
3.3 taking notes : taking notes so that the information is noted down and can be retrieved

In Table 3.9, the framework of metacognitive strategies was concluded after the analysis was conducted.

Table 3.9
Framework of Metacognitive Strategies Concluded from Brown (2002),
Purpura (1999) and NCLRC (2004)

Metacognitive Strategies
1. Planning processes
1.1 setting goals: determining their goals before listening to the input, e.g. identifying the purposes of listening
1.2 planning: specifying what to listen to
2. Monitoring processes
2.1 assessing situation: determining which approach is appropriate (bottom-up or top-down)
2. Monitoring processes
2.1 assessing situation: determining which approach is appropriate to be used (bottom-up or top-down)
2.2 monitoring: monitoring their comprehension
3. Evaluating processes
3.1 evaluating: evaluating their own performance
3.2 modifying: modifying their strategies so that they can do better the next time

- Development of the questionnaires

The development stage was associated with the format and the questions. This was linked to the face validity concept. Instruments must appear valid for their own objectives. According to Ary, Jacobs and Rzavieh (2002), it is necessary to keep in mind that respondents tend to respond to questions they feel relevant to the topic, rather than to those they do not understand. Also, they tend to reply to questions they consider appropriate.

The systematic questionnaire development stage can be found in many books concerning research development (Bell, 1993 and Dörnyei, 2003). Based on their work, including that of Weir, Huizhong and Yan (2000), the following steps of questionnaire development were taken.

1. Designing the format or the layout appearance: This also includes the length of the questionnaire.

- *length*: The maximum length of time that the completion of the questionnaire could take must be specified. According to Dörnyei (2003), there is agreement among researchers that anything that is more than 4-6 pages long and requires more than an hour to complete may be regarded as too much of a burden on the respondents. The questionnaire given in class must ensure that the time allowed and the length appropriately match. The slowest reader in class was taken into consideration.

- *general format characteristics*: The format is very crucial since it can positively or negatively affect the respondents. The significant role of the layout is to motivate the respondents to answer the questions. Dörnyei (2003) suggested five elements which were adopted to improve the questionnaires in this study. These elements are claimed to make a questionnaire more attractive and professional. The five elements are using the booklet format (compact or *look short*), appropriate density, orderly layout, paper quality (good quality paper and colorful paper), and sequence marking.

2. Considering elements concerning questions:

- *question types*: The types of questions, either open or closed questions, were determined. They both have advantages and disadvantages. In this research study, for the EIL CBT questionnaire, both types of questions were used. The closed questions were used because they are quick to administer and easier to code and analyze. At the same time, they are good for those who are less able to express themselves, which is the typical characteristic of Thai students. However, to make some room for the students who wanted to express more, open-ended questions were also given at the end so that they could give more opinion about the test via the questionnaire if they wanted to.

Concerning cognitive and metacognitive strategies, the closed questions were chosen because of the same reasons. Although the disadvantages of closed questions can be harmful (i.e. misleading conclusions due to limited range of options and respondents unable to express personal opinion resulting in their choosing the nearest answer), the cognitive and metacognitive questionnaire should not be so negatively

affected that the validity of the questionnaires was severely destroyed. This is because the content of the questions were based on firm theories of learner strategies, which were believed to cover most of the strategies learners take. Moreover, participants would be able to express their personal opinions during the interview, which would be conducted after they completed the questionnaire.

- *question wording*: Such words as a great deal, average, etc. refer to different perceptions for each individual (Bell, 1993). Therefore, wording was thoroughly checked. This was done by piloting the questionnaire before revision was made.

- *problem questions*: The problem questions included double questions (e.g. Do you attend English and Math classes regularly?), leading questions (e.g. Would you say that animal welfare charities are a good thing?), presuming questions (e.g. Does the university make adequate provision for counseling?), hypothetical questions (e.g. If you won the lottery, what would you do?, If you didn't have family responsibilities and a lot of money, what would you do with your life?), long questions and offensive questions. These types of problematic questions were avoided.

- Trial on small samples

Weir, Huizhong and Yan (2000) recommended a tryout on a small number of samples before piloting the questionnaires on a larger number of students. This was to certify the first drafts of the instruments, and let researchers see existing or potential problems so that corrections and adjustments could be made in advance. After accomplishing the stages above, the first trial with a small group of students with the same characteristics or qualities as those to be recruited in the main study was conducted. This was to see whether any changes should be made.

Regarding the posteriori validation processes, Weir, Huizhong and Yan (2000) suggested focusing on the stage of data analysis. It engages the analysis of the fact obtained from administering an instrument to determine whether the instrument is really valid and reliable. The steps included in this stage are as follows.

- Analysis of data

1. Trial on reasonable sample: Piloting the instruments is essential. The appropriate time for a formal trial run is when the item pool has been finished and when a complete, almost final version of the questionnaire has been prepared (Dörnyei, 2003).

Isaac and Michael (1989) emphasized the importance of pretesting a questionnaire. During the pretest, they advised the following steps be taken.

- The sample group must be representative of the population towards which the questionnaire is intended.
- Some space must be provided on the trial questionnaire for the respondents to make reactions and suggested changes.
- The conditions must be comparable to those expected in the main study.

Bell (1993: p.85) added some questions that needed to be asked during piloting a questionnaire:

- * How long did it take you to complete?
- * Were the instructions clear?
- * Were any of the questions unclear or ambiguous? If so, will you say which and why?
- * Did you object to answering any of the questions?
- * In your opinion, has any major topic been omitted?
- * Was the layout of the questionnaire clear/ attractive?
- * Any comments?

2. Estimates of reliability: Reliability considers how consistent decisions are made by different persons and across time. Factors affecting reliability are such as length of time, etc. (Hatch and Farhady, 1982). It must be ensured that the questionnaires are distributed under the same conditions to all participants. Moreover, the data yielded from piloting the instruments is used to compare to that from the main study to see if they are parallel.

In the study, the groups who took part in the pilot study and the main study were comparable. The first questionnaire, which was the EIL CBT questionnaire, had a reliability value of .654. The second was the cognitive and metacognitive questionnaire.

Since this questionnaire was based on the framework proposed by scholars and was not on a Likert scale basis, consultation with experts and a trial on a comparable group of students were relied on instead of the statistics.

3. Consultation with experts and test takers: This approach helped confirm the reliability of the instruments. The experts and a group of students who participated in the pilot study took the EIL CBT and answered the questionnaire concerning the strategies that they used to complete each question. The experts provided their comments after they had finished the test and their answers on the strategies were set as a criterion to mark test takers' reports on their use of the strategies in the main study.

4. Revision: Considering the data gained from the experts and the test takers, changes were made to improve the quality of the questionnaires. There were two main changes made to the questionnaire. Firstly, the framework of the strategies that was used in the pilot study was revised. The strategies that the experts and the test takers did not select were discarded as shown in Tables 3.10 and 3.11. The main reason was they overlapped. Secondly, the wording of the questionnaire was made more personalized and easier to understand as suggested by the experts (Table 3.12).

Table 3.10

Framework of Cognitive Strategies Concluded from Derry and Murphy (1979),
Oxford (1990), Purpura (1999), Thompson and Rubin (1996) and Wenden (1991)
(Final Revision)

<p>1 . Analyzing and reasoning processes</p> <p>1.1. inferencing: concluding from the context, where the information is not obvious</p> <p>1.2 making generalization (concluding): concluding from the context, where the information is obvious; this includes generalization and hypothesis formation by using the context e.g. organization, tones, etc.</p> <p>1.3 translating: translating what they hear in L2 to their L1</p> <p>1.4 previewing: using pictures or questions to predict the answers</p> <p>2. Knowledge associating processes</p> <p>2.1 recombining: recombining meaningful phrases, patterns or small chunks of L2 that they know and making certain semantic connections between or among elements</p> <p>2.2 linking with prior knowledge: linking to their past experience or their background knowledge concerning the topic they hear</p> <p>2.3 applying the rules: using the rules that they have learned or mastered</p> <p>3. Information retrieving processes</p> <p>3.1 repeating: repeating or imitating the input they hear so that they can remember what is said</p> <p>3.2 taking notes: taking notes so that the information is noted down and can be retrieved</p>

Table 3.11 shows the framework of metacognitive strategies after the revision was made.

Table 3.11

Framework of Metacognitive Strategies Concluded from Brown (2002),
Purpura (1999) and NCLRC (2004) (Final Revision)

<p>1. Planning processes</p> <p>1.1 planning: specifying what to be listened to</p> <p>2. Monitoring processes</p> <p>2.1 assessing situation: determining which approach is appropriate (bottom-up or top-down)</p> <p>3. Evaluating processes</p> <p>3.1 evaluating: evaluating their own performance</p>

Table 3.12 illustrates the Thai version of the cognitive and metacognitive questionnaire integrated into the program for the participants to complete. Although the wording had already been simplified before the main study, a thorough explanation concerning each strategy was still given to the test takers prior to the test.

Table 3.12

Cognitive and Metacognitive Questionnaire (The Thai Version) Concluded and Translated from Derry and Murphy (1979), Oxford (1990), Wenden (1991), Thompson and Rubin (1996), Purpura (1999), Brown (2002), and NCLRC (2004)

<p>1. การวิเคราะห์และหาเหตุผล</p> <p>1.1 นิสิตตีความหรืออนุมานจากข้อมูลที่ได้ยิน (Inferencing)</p> <p>1.2 นิสิตสรุปความโดยรวมจากข้อมูลที่ได้ยิน (Concluding)</p> <p>1.3 นิสิตแปลจากภาษาอังกฤษเป็นภาษาไทย (Translating)</p> <p>1.4 นิสิตนำภาพหรือคำตอบบนหน้าจามาใช้ในการเดาคำตอบที่ถูกต้อง (Previewing)</p> <p>2. การเชื่อมโยงความรู้</p> <p>2.1 นิสิตนำคำที่ได้ยินมาประกอบกันให้ได้ใจความ (Recombining)</p> <p>2.2 นิสิตนำประสบการณ์หรือพื้นความรู้เดิมมาใช้ตอบคำถาม (Linking to Prior Knowledge)</p> <p>2.3 นิสิตนำความรู้เรื่องกฎไวยากรณ์มาใช้ตอบคำถาม (Applying Rules)</p> <p>3. การเรียกข้อมูลที่ได้ฟัง</p> <p>3.1 นิสิตทวนประโยคที่ได้ฟังเพื่อให้จำข้อมูลได้ (Repeating)</p> <p>3.2 นิสิตจดบันทึกสิ่งที่ได้ฟังและนำมาใช้ตอบคำถาม (Note Taking)</p> <p>4. การวางแผน</p> <p>4.1 นิสิตวางแผนว่าจะฟังข้อมูลใด (Planning)</p> <p>5. การสังเกตการณ์และควบคุมการฟัง</p> <p>5.1 นิสิตประเมินข้อมูลที่ได้ฟังและเลือกใช้กลวิธีการฟังที่เหมาะสม (Assessing Situation)</p> <p>6. การประเมินผล</p> <p>6.1 นิสิตประเมินความสามารถในการทำข้อสอบของตน (Evaluating)</p>
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After the tryout and the consultation with the experts, cognitive and metacognitive strategies that were focused on in this study are shown in Table 3.12. There are six major processes, including three cognitive and three metacognitive strategies.

Three cognitive strategies are analyzing and reasoning processes, knowledge associating processes and information retrieving processes. The analyzing and reasoning processes consist of four sub-strategies. The inferencing strategy is used when test takers deal with an auditory input that contains information not directly conveyed. Therefore, they have to make inferences from the available information. The concluding strategy is used when test takers make generalizations or conclude the input that they hear. In other words, they attempt to draw the main gist of the input. The translating strategy is test takers' use of a translating approach to arrive at the meaning of an input. Finally, the previewing strategy refers to the strategy used when test takers predict answers from previewing pictures and looking at answer choices.

The knowledge associating processes refer to recombining strategy, linking to prior knowledge strategy and applying rules strategy. The first sub-strategy, recombining, refers to test takers' attempts to enhance their comprehension by recombining words they hear. This means they recombine chunks of words that they can capture, rather than the whole input. Linking to prior knowledge is the strategy that is used when test takers rely on their background knowledge or the knowledge concerning related subject matter that they have been exposed to before taking the test. Lastly, the applying rules strategy refers to test takers' dependence on grammatical rules to help them find correct answers.

The information retrieving processes include two sub-strategies: repeating and note taking. The repeating strategy refers to test takers' trying to retrieve the information that they hear by repeating what they hear through either mumbling or repeating in the head. The note taking strategy refers to the strategy used when test takers rely on their notes to find correct answers.

The metacognitive strategies in this study involve planning processes, monitoring processes and evaluating processes. Each, after the revision, contains only one sub-strategy. The planning processes involves test takers' attempts to concentrate on an auditory input by planning what they will pay attention to in particular. The

monitoring processes refer to test takers' assessment of the situation or the context they are dealing with and their determination of which approach, either the top-down or the bottom-up approaches, to be used. The last metacognitive processes involve the evaluating processes which refer to test takers' evaluation of their own performance during their taking of the test or after they have finished an item or a section of the test.

3.3.2.4 Retrospective interviews

Eleven randomly selected participants from the high-listening-ability group and another ten from the low-listening-ability group were asked to participate in retrospective interviews for more in-depth analysis on the strategies and for confirmation of the strategies they used to complete the EIL CBT.

The semi-structured interviews were conducted within one week after the examination. The interviews followed the cognitive and metacognitive questionnaire. Basically, interviewees' answers given during their taking of the test were shown to them, and the researcher asked them to give more details on how they employed the chosen strategies. Towards the end of the interviews, the researcher was able to conclude when and how the interviewees used certain strategies. Also, this was to confirm if their report on the use of the strategies was complete. For example, the students may think that they relied on concluding what they have heard; however, based on the interview, it could be that the strategy involved also included recombining words because they concluded from chunks of words they heard. The answers were tape-recorded.

Table 3.13 summarizes the instruments used in the study.

Table 3.13: Research Instruments

Instruments	Objectives	Types of Instruments	Time of Distribution	Statistics
1. CULI Test PIC	- to serve as a criterion to prove the concurrent and the construct validity of the EIL CBT	- a standardized test	- during the pilot study (before students take the EIL CBT)	KR-20 = .893
2. EIL CBT	- to assess students' listening ability - to divide students into high-listening ability and low-listening ability groups - to elicit students' use of cognitive and metacognitive strategies	- a computer-based listening proficiency test	- during the pilot study (after students take the CULI Test PIC) - during the main study	KR -20 = . 836 Pearson Correlation Coefficient (with CULI Test PIC) = . 796, p < .01
3. EIL CBT Questionnaire	- to collect students' personal and background information - to elicit students' views towards the EIL CBT	- a Likert scale questionnaire	- during the pilot study and the main study after students have completed the EIL CBT	Cronbach Alpha = . 654
4. Cognitive and Metacognitive questionnaire	- to collect students' self-reported use of cognitive and metacognitive strategies	- a check list questionnaire integrated into the EIL CBT program	- during the pilot study and the main study after each set of questions are answered, the questionnaire appears on the computer screen	<i>qualitative methods</i> as part of priori and posteriori validation processes
5. Retrospective Interviews	- to collect students' in-depth views towards their use of cognitive and metacognitive strategies	- semi-structured interviews	- during the main study after students have taken the EIL CBT (with 11 high-listening-ability and 10 low-listening-ability students)	

3.4 Data Collection

The data collected from the main study primarily involved the students' choice of strategies, their opinions about the EIL CBT and their use of the strategies.

3.4.1 Data collection for the main study

The same procedure for the pilot study was employed for the main study. That is, the data was collected from the participants' answers on the cognitive and metacognitive questionnaire integrated in to the EIL CBT program. There were also other sources of data collected from the EIL CBT questionnaire concerning their attitudes towards the test and that obtained from retrospective interviews.

There were 186 students participating in the main study. The subjects in the pilot study were not included in the main study. They volunteered to take the EIL CBT and answer the questionnaires. However, based on the objectives of the study that focused only on the high and the low-listening-ability group, the answers from only 66, who represented those groups, were taken into account. The steps are as follows.

3.4.1.1 Recruiting participants

The students were recruited through contact with the lecturers at the Faculty of Commerce and Accountancy. The researcher introduced the test and her research project briefly to the students in their classes, and interested students signed up for the test. Their names were gathered and the date and time of the test were arranged. The students were contacted by phone to be informed of the test date and time. Due to the limited capacity of the available computer labs, it was not possible to administer the EIL CBT to 186 students on the same day. The test was, then, held during November 14-17, 2005.

3.4.1.2 Recording test takers' answers

After the students finished the computer-based exam, their answers on both the test and the cognitive and metacognitive questionnaire were recorded into the program.

They were able to know their scores right after they finished the test. At the same time, their scores were also printed on paper and were sent to them. Their scores on the test were graded by the computer program. Regarding the multiple choice parts, the answers were graded against the answer keys inserted into the program. The gap filling items were also graded based on the answer keys covering all possible answers that were gathered from the tryout stage. These excluded misspellings. As for putting answers in order part, the answers had to be exactly in the correct order, and one point was given to an answer with a correct order. Their answers on the questionnaire were recorded and reported by the computer in item numbers following the numbers listed in Table 3.12. For example, if in question number 1, a test taker chose inferencing and translating, the numbers appeared in the participant's file would be 1.1 and 1.3. These answers were, then, graded against the keys taken from seven experts. Only the answers of the majority were taken into consideration. If test takers' answers concurred with the experts', they would gain one point for each correct strategy used, and their answers would be coded as 1. If not, they would not obtain any points and their answers were coded as 0 (See Appendix I).

3.4.1.3 Retrospective interviews

To confirm the students' report on their use of strategies, retrospective interviews were given within one week after the students took the test. The interview took approximately 45 minutes for each student. There were 21 students taking part: 11 from the high-listening-ability group and another 10 from the low-listening-ability group. They were randomly selected from the sample groups.

3.5 Data Analysis

During the main study, the students' attitudes towards the EIL CBT were evaluated. Moreover, the data concerning their use of cognitive and metacognitive strategies gained from the questionnaire and the retrospective interviews was analyzed statistically.

3.5.1 Analysis of the students' attitudes towards the EIL CBT

- Descriptive statistics, i.e. frequency and percentage were used to calculate their answers on the Likert scale questionnaire.
- Qualitative analysis was conducted for their comments provided in the open-ended sections as well as their personal data.

3.5.2. Analysis based on the two hypotheses

To answer the first research question, "There are significant relationships between cognitive and metacognitive strategies and student performance on the EIL CBT," The Pearson correlation was used.

Regarding the second hypothesis, "There are significant differences in the use of cognitive and metacognitive strategies across the high and the low-listening-ability groups," an independent samples t-test was used.

The answers gained from the retrospective interviews given to 21 representatives of the whole population (11 from the high-listening-ability group and 10 from the low-listening-ability group) were analyzed qualitatively. The findings of the study and the discussions of the results are presented in Chapter 4.