

## CHAPTER IV

### RESULTS AND DISCUSSION

This chapter is divided into two main parts, which are the presentations of the results based on the two hypotheses and the discussion of the results. The first part involves the analyses of the data by means of both quantitative and qualitative approaches. The SPSS (Statistical Package for Social Science) program is used to analyze the data. The second part discusses important issues found in the study in relation to theories and relevant background literature.

#### 4.1 Results of the Study

##### 4.1.1 Data from the cognitive and metacognitive questionnaire

Hypothesis 1: There are significant relationships between cognitive and metacognitive strategies and student performance on the EIL CBT.

To test the hypothesis, the scores of the high-ability group on the EIL CBT and the scores gained from their use of cognitive and metacognitive strategies are analyzed to find a correlation between the two variables. Similarly, the scores of the low-ability group on the EIL CBT and the scores of cognitive and metacognitive strategies are calculated. The results are presented in the following table.

Table 4.1

## Correlation between Students' Use of Strategies and their Proficiency

	Advanced Students'	Non-advanced Students'
	Total scores	Total scores
Cognitive Strategies	.290	-.114
Metacognitive Strategies	-.437*	-.116
Cognitive and Metacognitive Strategies	.228	-.124

P\* < .05

The table shows no significant relationship between the total scores of the advanced students and cognitive strategies, the Pearson correlation coefficient is .290. However, the data illustrates a weak negative relationship between the use of metacognitive strategies and the scores of the advanced group that is -.437. It is significant at the level of .05.

Regarding the non-advanced students, the data also shows no significant relationship between their scores and their use of both cognitive and metacognitive strategies. The Pearson correlation coefficient is -.114 and -.116 respectively.

Furthermore, if both strategies are taken into consideration at the same time, the data reveals no significant relationship between the use of both strategies and the scores of the students from both groups. The Pearson correlation coefficient of the advanced students' total scores and their use of the two strategies is .228 whereas that of the non-advanced group equals -.124.

Since the EIL CBT consists of 4 parts and each part varies in terms of task types, the correlation coefficient of the strategies and the proficiency scores of every part are analyzed to find if there are any relationships between them.

Table 4.2

Correlation between Students' Use of Both Strategies and  
Advanced Students' Scores in Part 1

	Strategy scores of Part 1	Proficiency scores of Part 1	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 1	-	.224	.368*	5.506	13.566
Proficiency scores of Part 1	-	-	.716**	1.322	12.100
Total proficiency scores of the test	-	-	-	2.310	42.200

P\* < .05, P\*\* < .01

According to the table, the correlation values, the S.D. and the mean scores of each variable earned by the proficient students are provided. The Pearson correlation coefficient shows no significant relationship between the use of strategies in part 1 and the scores of the advanced students in the same part ( $r = .224$ ). However, the students' use of strategies in Part 1 and their total scores are significantly correlated. The correlation coefficient is .368, which is significant at the level of .05. The table also reveals that there is a strong significant relationship between the scores in Part 1 and the total scores. The Pearson correlation coefficient is .716, which is significant at the level of .01. The S.D. of the strategy scores of Part 1, the proficiency scores of Part 1 and the total proficiency scores are 5.506, 1.322 and 2.310, respectively. The mean score of the strategy scores of part 1 is 13.566. The mean score of the proficiency scores of Part 1 is 12.100, and that of the total proficiency scores is 42.200.

Table 4.3

Correlation between Students' Use of Both Strategies and  
Non-advanced Students' Scores in Part 1

	Strategy scores of Part 1	Proficiency scores of Part 1	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 1	-	-.061	-.213	4.308	10.194
Proficiency scores of Part 1	-	-	.386*	1.680	4.920
Total proficiency scores of the test	-	-	-	2.523	20.420

P\* < .05

Regarding the low-listening ability group, no significant relationships between their use of strategies and their performance on both Part 1 and the whole test are shown. The correlation coefficient is -.061 and -.213, respectively. However, the figures show that their scores on the first part are associated with their total scores. The correlation coefficient is .386, which is significant at the level of .05. The S.D. of the strategy scores of Part 1, the proficiency scores of Part 1 and the total proficiency scores are 4.308, 1.680 and 2.523, respectively. The mean score of the strategy scores of Part 1 is 10.194. The mean score of the proficiency scores of Part 1 is 4.920, and that of the total proficiency scores is 20.420.

Table 4.4

Correlation between Students' Use of Both Strategies and  
Advanced Students' Scores in Part 2

	Strategy scores of Part 2	Proficiency scores of Part 2	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 2	-	.292	.125	3.926	10.367
Proficiency scores of Part 2	-	-	.457**	1.177	13.170
Total proficiency scores of the test	-	-	-	2.310	42.200

P\*\* < .01

The data in Table 4.4 presents no significant relationship between the use of strategies in Part 2 and the scores that the high-listening ability group gained from Part 2 ( $r = .292$ ). The same relationship is found between their strategy scores and their total scores ( $r = .125$ ). However, the scores of the second part and the total scores show a positive correlation. The correlation coefficient is .457, which is significant at the level of .05. The S.D. of the strategy scores of Part 2, the proficiency scores of Part 2 and the total proficiency scores are 3.926, 1.177 and 2.310, respectively. The mean score of the strategy scores of Part 2 is 10.367. The mean score of the proficiency scores of Part 2 is 13.170, and that of the total proficiency scores is 42.200.

Table 4.5

Correlation between Students' Use of Both Strategies and  
Non-advanced Students' Scores in Part 2

	Strategy scores of Part 2	Proficiency scores of Part 2	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 2	-	-.109	-.033	3.273	7.027
Proficiency scores of Part 2	-	-	.516**	1.775	7.140
Total proficiency scores of the test	-	-	-	2.523	20.420

P\*\* < .01

Similarly, the study reveals no relationship between the strategy scores of the low-listening ability group and the scores in Part 2 ( $r = -.109$ ). The strategy scores and the total scores are not significantly correlated either ( $r = -.033$ ). On the other hand, there is a significant relationship between the group's scores in Part 2 and their total scores. The correlation coefficient is .516, which is significant at the level of .01. The S.D. of the strategy scores of Part 2, the proficiency scores of Part 2 and the total proficiency scores are 3.273, 1.775 and 2.523, respectively. The mean score of the strategy scores of Part 2 is 7.027. The mean score of the proficiency scores of Part 2 is 7.140, and that of the total proficiency scores is 20.420.

Table 4.6

Correlation between Students' Use of Both Strategies and  
Advanced Students' Scores in Part 3

	Strategy scores of Part 3	Proficiency scores of Part 3	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 3	-	.137	-.152	3.209	9.100
Proficiency scores of Part 3	-	-	.396*	1.003	8.400
Total proficiency scores of the test	-	-	-	2.310	42.200

P\* < .05

In Part 3 the strategies that the advanced students use are not significantly associated with neither their proficiency scores on the same part ( $r = .137$ ) nor their total proficiency scores ( $r = -.152$ ). However, a significant relationship between their scores in Part 3 and their total scores exists. The correlation coefficient is .396, which is significant at the level of .05. The S.D. of the strategy scores of Part 3, the proficiency scores of Part 3 and the total proficiency scores are 3.209, 1.003 and 2.310, respectively. The mean score of the strategy scores of Part 3 is 9.100. The mean score of the proficiency scores of Part 3 is 8.400, and that of the total proficiency scores is 42.200.

Table 4.7

## Correlation between Students' Use of Both Strategies and

## Non-advanced Students' Scores in Part 3

	Strategy scores of Part 3	Proficiency scores of Part 3	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 3	-	.123	.063	2.567	4.250
Proficiency scores of Part 3	-	-	.265	1.606	4.360
Total proficiency scores of the test	-	-	-	2.523	20.420

Like the data gained from the advanced group, the non-advanced group's data concerning their use of strategies in Part 3 and their scores on the same part are not significantly correlated ( $r = .123$ ). The same relationship is also found in the investigation of the relationship between the strategies that they used and their total scores ( $r = .063$ ). Unlike other parts, the findings do not demonstrate a significant relationship between the scores they gain from Part 3 and their total scores. The correlation coefficient is .265. The S.D. of the strategy scores of Part 3, the proficiency scores of Part 3 and the total proficiency scores are 2.567, 1.606 and 2.523, respectively. The mean score of the strategy scores of Part 3 is 4.250. The mean score of the proficiency scores of Part 3 is 4.360, and that of the total proficiency scores is 20.420.

Table 4.8

## Correlation between Students' Use of Both Strategies and

## Advanced Students' Scores in Part 4

	Strategy scores of Part 4	Proficiency scores of Part 4	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 4	-	-.266	.052	2.909	8.133
Proficiency scores of Part 4	-	-	.368*	1.167	8.530
Total proficiency scores of the test	-	-	-	2.310	42.200

P\* < .05

The findings from Part 4 correspond with other parts presented earlier. There are no significant relationships between the use of strategies by the high-listening ability group in Part 4 and both the scores of Part 4 and the total scores ( $r = -.266$  and  $.052$ , respectively). Nevertheless, a significant relationship between the scores in Part 4 and the total scores is revealed. The correlation coefficient is  $.368$ , which is significant at the level of  $.05$ . The S.D. of the strategy scores of Part 4, the proficiency scores of Part 4 and the total proficiency scores are  $2.909$ ,  $1.167$  and  $2.310$ , respectively. The mean score of the strategy scores of Part 4 is  $8.133$ . The mean score of the proficiency scores of part 4 is  $8.530$ , and that of the total proficiency scores is  $42.200$ .

Table 4.9

Correlation between Students' Use of Both Strategies and  
Non-advanced Students' Scores in Part 4

	Strategy scores of Part 4	Proficiency scores of Part 4	Total proficiency scores of the test	S.D.	$\bar{X}$
Strategy scores of Part 4	-	-.117	-.030	2.280	4.333
Proficiency scores of Part 4	-	-	.382*	1.394	4.000
Total proficiency scores of the test	-	-	-	2.523	20.420

P\* < .05

Regarding the non-advanced group, a similar trend of the relationships between the use of strategies and students' scores is demonstrated. The data discloses no significant relationship between the students' strategy scores in Part 4 and neither with their scores in Part 4 nor their total scores ( $r = -.117$  and  $-.030$ , respectively). However, a significant relationship between the students' scores in Part 4 and the total scores is discovered. The correlation coefficient is  $.382$ , which is significant at the level of  $.05$ . The S.D. of the strategy scores of Part 4, the proficiency scores of Part 4 and the total proficiency scores are 2.280 1.394 and 2.523, respectively. The mean score of the strategy scores of Part 4 is 4.333. The mean score of the proficiency scores of Part 4 is 4.000, and that of the total proficiency scores is 20.420.

In conclusion, the study shows no significant relationships between cognitive strategies and both groups' listening performance on the EIL CBT. There is also no correlation between the non-advanced group's use of metacognitive strategies and their scores on the test. However, the data reveals a weak negative relationship between the

advanced students' use of metacognitive strategies and their listening scores. The correlation coefficient is  $-.437$ , which is significant at the level of  $.05$ .

With regard to the relationships of both cognitive and metacognitive scores and the total listening scores, the only significant positive relationship illustrated is the strategy scores in Part 1 of the advanced students and their total scores. The data shows a moderate correlation at  $.368$ , which is significant at the level of  $.05$ .

When the correlation between the scores of each part and the total scores of each group are considered, the data reveals significant relationships of both variables in both groups. However, this excludes the scores of the non-advanced students in Part 3 and their total scores. The figures disclose no significant relationship between these two variables.

Hypothesis 2: There are significant differences in the nature of cognitive and metacognitive strategy use across the high and the low-listening ability groups.

Independent samples t-test was used to test this hypothesis and the results confirm significant differences in the use of both strategies of the students with different listening abilities.

Table 4.10

## Comparison between the Use of Strategies by Advanced and Non-advanced Students

Strategies	Total	Advanced		Non-advanced		df	t
	Strategy	30 students		36 students			
	Scores	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
1. Analyzing and reasoning	52	26.50	8.47	17.89	7.26	64	-4.449*
1.1 Inferencing	15	5.63	4.06	5.22	3.34	64	-.452
1.2 Concluding	37	20.87	6.93	12.67	6.72	64	-4.865*
1.3 Translating	-	-	-	-	-	-	-
1.4 Previewing	-	-	-	-	-	-	-
2. Knowledge associating	24	4.43	3.35	4.89	3.46	64	.540
2.1 Recombining	2	0.57	0.77	0.69	0.71	64	.699
2.2 Linking to Prior Knowledge	17	2.80	3.08	3.81	3.09	64	1.319
2.3 Applying Rules	5	1.07	1.34	0.39	0.80	45.622	-2.434*
3. Information retrieving	17	9.17	4.75	2.83	3.33	50.543	-6.154*
3.1 Repeating	1	0.23	0.43	0.25	0.44	64	.155
3.2 Taking notes	16	8.93	4.78	2.58	3.30	50.017	-6.152*
Cognitive strategies	93	40.10	9.86	25.61	7.57	64	-6.753*
4. Planning	6	1.07	1.55	0.19	0.58	35.664	-2.915*
4.1 Planning	6	1.07	1.55	0.19	0.58	35.664	-2.915*
5. Monitoring	-	-	-	-	-	-	-
5.1 Assessing Situation	-	-	-	-	-	-	-
6. Evaluating	-	-	-	-	-	-	-
6.1 Evaluating	-	-	-	-	-	-	-
Metacognitive strategies	6	1.07	1.55	0.19	0.58	35.664	-2.915*
Cog+meta	99	41.17	9.56	25.81	7.52	64	-7.303*

P\* < .05

The table shows the total strategy scores that the majority of the experts assigned to each sub-strategy when they selected the strategies for the test. Two

strategies underlying the analyzing and reasoning processes, translating and previewing from pictures or answer choices, are not presented because the majority of the experts do not agree on the use of them. Also, strategies 5 and 6, monitoring and evaluating processes, are not marked by the majority of the experts; therefore, no scores are assigned.

The table illustrates significant differences in the use of cognitive and metacognitive strategies by the advanced and the non-advanced students ( $t_{.05,64} = -7.303$ ). The mean of the cognitive and metacognitive strategy scores of the advanced students is 41.17 whereas that of the non-advanced group is 25.81. The S.D. of the strategy scores of the advanced students is 9.56 while that of the non-advanced students is 7.52.

If each sub-category is considered, the strategies that are relied on more by the high-listening ability group than the low-listening ability group when taking the EIL CBT are 1.2 concluding ( $t_{.05,64} = -4.865$ ), 2.3 applying rules ( $t_{.05,45,622} = -2.434$ ), 3.2 taking notes ( $t_{.05,50,017} = -6.152$ ), and 4.1 planning ( $t_{.05,35,664} = -2.915$ ).

#### 4.1.2 Data from the retrospective interviews

There were 21 students taking part in the retrospective interviews. They included 11 students from the high-listening ability group and 10 from the low-listening ability group. The samples were selected by means of random sampling. The interviews were conducted to confirm and extend the students' report on their use of strategies.

##### 4.1.2.1 Report on the use of strategies by advanced students

All advanced students reported an automatic process of decoding the listening input. Most of the time, they automatically understood the information they heard. Some of them knew that there were strategies that they could rely on, but some did not. For example, a few students said, "My teacher introduced similar strategies presented in the research study while the rest said, "I was never taught to use the

strategies." One student revealed her instructor taught her to try to pay attention and capture the main idea of what she was listening to.

More details of how and when they used each strategy are as follows.

#### 1. Analyzing and reasoning processes

- Inferencing: Students reported that they used this strategy whenever the information was not directly conveyed. They had to infer from the input. They also chose this strategy when they felt unsure how to answer.

Student 7: "I use inferencing when I'm not sure with the answers. I can grasp only part of the input. I try to eliminate choices until I come to the one I think is correct."

Student 8: "I use inferencing when the information is not directly stated."

Student 9: "If I can't catch the meaning of the input, I'll make inferences. Also, if the speaker doesn't present information directly, I'll infer from the input."

- Concluding: Students said that they chose this strategy because all they did was concluded from what they heard. They automatically comprehended the input. The whole process was automatic.

Student 2: "I automatically understand what I hear. In general, I listen and conclude."

Student 3: "I use concluding when I understand and can capture every word. The process is automatic."

Student 6: "I rely on this strategy when I understand everything the speaker says and most of the time I'm able to comprehend all I hear."

Moreover, students reported their use of this strategy together with recombining words. This was reported to help them capture the details.

Student 3: "When I feel that there are some details important in the input, I'll make use of the recombining words strategy simultaneously with the concluding strategy because I feel that I have to grasp those key words."

- Translating: Students said they did not select this strategy since they did not translate the messages. They understood it as they did when they listened to Thai, their native language. Students admitted that they translated only when they faced problems in understanding the input. And they said they translated some words when more concentration was needed to get the right answer.

Student 1: "I translate the input in my head, but actually I don't really translate. I understand it right away."

Student 2: "I also translate the input, but only when I fail to understand the input."

Student 7: "I'll translate what I hear when I don't understand or when I have problems."

Student 9: "I automatically understand what they ask on the test, but I have to think what kind of answers they want. It's not like translating. If I translate, I do with words, not the whole input. And that means I want to pay more attention to those words."

Student 10: "I don't translate. The process is rather automatic."

- Previewing from pictures and answer choices: Students said that they rarely relied on this strategy. Whenever they did so, it meant they were trying to guess. They trusted what they actually heard rather than the pictures.

Student 4: "I never make guesses without any clues. I'll try to use the words I hear to form meaning."

Student 5: "I don't guess the answers. I'll, at least, rely on some clues such as the words that I hear, and combine them to create meaning."

Student 8: "I rarely use the pictures provided. I believe more in what I hear."

Student 9: "When I have to make a guess, I'll, at least, use the pictures."

## 2. Knowledge associating processes

- Recombining words: Students mentioned their use of this strategy when specific details had to be referred to. They also revealed that chunks of words were focused on when those words were required in the answers. Moreover, they reported the use of this strategy when they did not understand all, but were able to capture several words.

Student 3: "For questions that require details, I'll recombine words because I have to refer to the details to get the right answers."

Student 8: "I refer to the recombining words strategy when I can't understand all or when I can recognize only isolated words."

- Linking with prior knowledge: This strategy was not commonly used by the students in this group. Students said that they relied on this strategy only when they had to guess or when they were uncertain.

Student 7: "I choose to link to prior knowledge when I'm not sure what the right answer should be."

Student 10: "When I'm not able to follow the input, I link to my background knowledge. I also do this when the topics are familiar."

According to the interview, the high-listening-ability students also chose to depend on this strategy by considering the task types that they were dealing with.

Student 3: "When I listen to short statements in part 1, I refer to the experience that I have in different situations. I'm confident when I answer those items. But, for other parts in which I have to deal with longer talks, I select this strategy because I'm in trouble. I don't know what to answer."

- Applying the rules: Students revealed their reference to the grammatical rules when completing part 1 (Listening to statements and response). They paid attention to certain clues such as 'do you mind', 'how long', 'how about', etc.

Student 2: "I use grammatical rules. I know that this particular type of questions needs what kind of answers."

Student 8: "I use this rule application strategy when I hear words such as 'how about'."

Student 9: "In part 1, I apply the rules when I hear the words like 'how long'."

Student 11: "I link to the rules that I learned because I hear the word 'do you mind'."

### 3. Information retrieving processes

- Repeating: Students reported their repetition of the information they heard, but with various reasons such as when they would like to recall the messages, when they encountered problems or when they could not decode the input with ease (for example, when it was difficult to understand the talks, when they did not capture all the details, when they had to retrieve specific details to get the right answer, etc.), and when they expected that particular detail would be asked.

Student 1: "I think the questions will certainly ask this detail so I memorize it."

Student 2: "I use repeating when I want to recall the information I hear."

Student 3: "When I listen to difficult texts, I have to repeat the information to help me comprehend it."

Student 6: "I try to repeat what is said so that I can transfer it into the correct answers."

- Taking notes: Repeating and note taking were sometimes a trade-off. Some students did not take notes because they remembered the details. Some did not report on the program that they employed this strategy since they could rely on their memories.

Student 1: "Sometimes I memorize the information in my head. I don't jot it down."

Student 2: "I don't report on my use of the note taking strategy for some items because I remember the information."

Student 3: "I use a lot of memory strategy. I can't note all of the information I hear, or sometimes what I note is not asked. So, I rely more on my memory."

Student 10: "I don't choose the note taking strategy because I remember the details. I'd rather choose the repeating strategy."

According to the interviews, the advanced group was able to take notes effectively. Their notes were useful since they wrote down information that could be used to answer questions correctly. Their notes were in the form of keywords, rather than sentences.

Student 1: "I can take notes from the whole talk."

Student 2: "I note the important details, only in chunks of words."

Student 5: "Taking notes helps and is very useful, but sometimes doing both listening and writing makes me lose concentration."

Student 7: "I've got all details that are asked in my notes. I noted in isolated words."

Student 9: "I note the key words and all details I hear."

#### 4. Planning processes

- Planning: The high-listening-ability students reported their use of the planning strategy. They depended on this strategy when they had an opportunity to do so; for example, when they knew they had to put events or pictures in order. They planned to focus on some details they expected to be asked such as numbers.

Student 1: "For this question, I plan before that it's going to be asked. I draw the picture of the store on the paper."

Student 7: "I plan what to listen to by focusing on the directions which guide me which part I should concentrate on."

Student 8: "I read the directions to see what kind of details they want."

Student 10: "While taking notes, I plan what type of information will be asked and will note down those details."

The rest of the strategies, namely monitoring and evaluating processes were not reported as helpful for this particular group of students.

To conclude, the interviews support the data presented in Table 4.10 as follows. Firstly, the high-listening ability group concludes or makes generalization from the text a great deal. This is due to the automaticity of input processing. Secondly, they find that the grammatical rules help them choose the correct answers, especially for part 1 that involves short statements. Also, they can refer to their notes although sometimes they do not choose the note taking strategy since they can remember the details. Lastly, they sometimes plan what information they would like to listen to if they are accommodated to do so.

##### 4.1.2.2 Report on the use of strategies by non-advanced students

Students reported that they were not able to comprehend what they heard most of the time. Therefore, they primarily relied on guessing. However, their method of guessing varied. This was reflected in their use of strategies. Inability to understand the

listening messages was not the only problem for them. Sometimes the input was comprehensible, but they did not have sufficient knowledge to distinguish the right answer from the distractors.

#### 1. Analyzing and reasoning processes

- Inferencing: Students' use of the inferencing strategy was found when there was an uncertainty as to what the right answer should be. They also referred to this strategy when they needed to conclude from the little information they had. Students reported that they employed the strategy when comprehension was not a problem, but hesitation to select the best choice was.

Student 12: "I use the inferencing strategy when guessing or when I don't have enough information on my notes."

Student 13: "I make inferences when I'm not sure what I should answer."

Student 19: "I use this strategy when I don't understand the listening input, or sometimes I do, but I'm not sure what the correct answers should be."

- Concluding: Most students who selected this strategy usually chose recombining words in combination. Unlike the high-listening ability group, who concluded from strings of sentences or the whole listening message they heard, the non-advanced group concluded from the words that they were able to capture and then put them together to form meanings.

Student 12: "I combine words that I hear and deduce the meaning from them."

Student 14: "Most of the time I choose concluding, previewing from pictures and answer choices, and recombining words because I combine chunks of words I hear and then make a conclusion."

- Translating: Unlike the high-listening ability group, which translated when they faced problems in understanding the listening messages, the non-advanced group

translated when they could hear a few chunks of words or strings of sentences. When they were able to capture what was said, they would translate. In other words, when they felt they understood a great number of meanings conveyed, they would translate.

Student 12: "I translate when I can grasp much of the input. I must translate to understand what is said."

Student 14: "I translate when I can capture a few words otherwise I will just look at the pictures."

Student 17: "I translate the input from English into Thai. I translate isolated words. The process is not automatic. It takes time. My decoding process used to be faster during the time I often practice English."

- Previewing from pictures and answer choices: Like the advanced group, the non-advanced group depended on the pictures and answer choices when they had to guess. However, most of the students in the non-advanced group selected the previewing strategy almost all the time due to the difficulty to understand the talks or conversations. Their use of the pictures helped increase their confidence.

Student 16: "The pictures helped me concentrate on what I was listening to. I used them to guess the answers."

Student 17: "When I don't understand, I'll preview from the pictures and answer choices. I also consider if the answers are possible, but normally my guesses are wrong."

Student 19: "I always preview from the pictures. I feel less anxious when I see pictures."

Student 21: "I look at the picture first, and use it to guess an answer because I don't understand."

## 2. Knowledge associating processes

- Recombining words: Students chose this strategy because most of the time they were able to capture isolated words, not whole sentences. They did not understand everything that was said; rather, they paid attention to words they could understand.

Student 12: I recombine words and form meaning out of them. Sometimes I think I understand those words in chunks, but when I arrive at the conclusion, it's wrong."

Student 17: "When I listen, I'll capture the words at the beginning and at the end of the input."

Student 20: "When I choose to rely on this strategy, I can understand only a few words."

- Linking to prior knowledge: Students' views towards their use of this strategy revealed their reference to their background knowledge when they did not understand the listening input. This was reflected in the high-listening ability students' answers.

Student 19: "I depend on my background. I think it should be this way by linking to my background when I don't understand."

Student 20: "Most of the time, I use this linking to prior knowledge strategy because I don't understand what is said so I refer to what is learned from my previous English lessons."

## 3. Information retrieving processes

- Repeating: According to the interviews, only a few reported the use of the repeating strategy. They repeated information so that they could translate and make use of it.

Student 17: "I normally choose the repeating strategy. The spoken texts are delivered too fast. I hardly capture the meaning."

Student 19: "Before I translate, I have to repeat the information first."

- Taking notes: Most of the non-proficient students mentioned their failure to note the right details for the note completion part. Students noted everything they heard, and emphasized that note taking did not work for them since they were not able to take notes effectively and were not able to find answers from their notes.

Student 12: "I can barely take notes. I can note down numbers and some words."

Student 13: "I note down telephone numbers, or other numbers. I know it's going to be asked."

Student 14: "I can't take notes effectively. My notes are often irrelevant."

Student 17: "My notes are written in chunks of words. I often write down numbers and the words I understand. I can't take all of the information because it's too fast."

#### 4. Planning

- Planning: Students reported that they planned what they would like to pay attention to. Like the advanced-group, some paid careful attention to the directions or made a guess on what should be concentrated on.

Student 13: "I note down telephone numbers, or other numbers. I know it's going to be asked."

Student 19: "I plan what I should pay more attention to or what the teacher will ask on the test."

In conclusion, the students who belong to this group rarely use the inferencing strategy. Moreover, the use of the concluding strategy by the non-advanced group differs from that of the high-ability group, who generally concludes from the overall main ideas. Instead, they conclude from the chunks of words they hear. Therefore, this is why this strategy is often used with recombining words. Moreover, translating and previewing

from pictures and answers are often found helpful for the students in this group. As the process of understanding the verbal messages is not immediate for them, translating is triggered to assist them to generate meanings. "Previewing" is also heavily relied on due to their inability to understand the listening input. This results in their making a guess by using pictures and answer choices.

The second set of processes of associating to knowledge, i.e. recombining words and linking to prior knowledge are reported by the non-advanced group as supportive. They put words they can capture to draw meanings and ideas from them. They refer to their background knowledge when they have to guess.

Information retrieving processes do not seem to be useful in the views of the low-listening ability students. In fact, they found that they can not take notes effectively and correctly. "Planning" is the only metacognitive strategy the students use, and few make use of it.

#### 4.1.3 Data from the EIL CBT questionnaire

The EIL CBT questionnaire was distributed to 186 students who took part in the test so that their opinions towards the computer-based listening test could be elicited. The questionnaire was divided into three main parts, namely the information about the students, their comments that were reported on the Likert scale, and their additional comments in prose. The findings obtained from the distribution of the questionnaire were classified into three sections: the views of the all students expressed on the Likert scale, the views of the students separated into the advanced and non-advanced groups shown on the Likert scale, and the views of the students expressed in the additional comment part.

## 4.1.3.1 The views of all students who took the test

The views of 186 participants are shown in Table 4.11 on the Likert scale. The data is presented in numbers and percentages.

Table 4.11

## Students' Views towards the Computer-based Listening Test

Question Items	Opinions					$\bar{X}$	S.D.
	5 Strongly agree ←	4	3	2	1 Strongly disagree →		
1. The test measures the English listening abilities used to perform everyday life tasks.	46 (24.7%)	105 (56.5%)	32 (17.2%)	3 (1.6%)	-	4.04	.696
2. The contents of the test reflect those found in everyday life and at work.	58 (31.2%)	101 (54.3%)	23 (12.4%)	4 (2.2%)	-	4.15	.709
3. The topics integrated in the test suit senior Commerce and Accountancy students	30 (16.1%)	106 (57.0%)	38 (20.4%)	11 (5.9%)	1 (.5%)	3.82	.789
4. English tests should also assess students' abilities to understand international English accents since this portrays the use of English in real life.	84 (45.2%)	64 (34.4%)	29 (15.6%)	9 (4.8%)	-	4.20	.875
5. The accents of the non-native English speakers negatively affect your comprehension.	35 (18.9%)	54 (29.2%)	68 (36.8%)	21 (11.4%)	7 (3.8%)	3.48	1.043
6. The scores on the test portray your English listening proficiency.	15 (8.1%)	83 (44.9%)	75 (40.5%)	12 (6.5%)	-	3.55	.737
7. The test is good because you are allowed to take the test at your own pace.	57 (30.6%)	64 (34.4%)	46 (24.7%)	11 (5.9%)	8 (4.3%)	3.81	1.072
8. The scores on the test can be used by employers as an evaluation of your listening ability.	25 (13.4%)	84 (45.2%)	56 (30.1%)	18 (9.7%)	3 (1.6%)	3.59	.897
9. The test is too difficult for the students.	3 (1.7%)	27 (15.3%)	85 (48.0%)	50 (28.2%)	12 (6.8%)	2.77	.851
10. You have enough time to answer questions on the test.	76 (42.9%)	63 (35.6%)	30 (16.9%)	6 (3.4%)	2 (1.1%)	4.16	.903

Table 4.11 (Continued)

## Students' Views towards the Computer-based Listening Test

Question items	Opinions					$\bar{X}$	S.D.
	5 Strongly agree ←	4	3	2	1 Strongly disagree →		
11. The test is difficult because it is computer-based.	2 (1.1%)	7 (4.0%)	27 (15.3%)	62 (35.2%)	78 (44.3%)	1.82	.912
12. Your ability to use the computer does not affect your performance on the test.	92 (52.6%)	52 (29.7%)	21 (12.0%)	8 (4.6%)	2 (1.1%)	4.28	.926
13. Your typing ability does not affect your performance on the test because you have enough time.	82 (46.6%)	62 (35.2%)	26 (14.8%)	4 (2.3%)	2 (1.1%)	4.24	.868
14. Directions and questions are clear and comprehensible.	47 (26.6%)	71 (40.1%)	49 (27.7%)	7 (4.0%)	3 (1.7%)	3.86	.915
15. You like the use of pictures in the test.	35 (20.0%)	61 (34.9%)	58 (33.1%)	16 (9.1%)	5 (2.9%)	3.60	1.000
16. You like the test because it integrates various types of tasks e.g. putting pictures in order, completing notes, etc.	56 (31.6%)	81 (45.8%)	33 (18.6%)	6 (3.4%)	1 (.6%)	4.05	.831
17. The pictures increase your comprehension.	28 (16.0%)	62 (35.4%)	52 (29.7%)	28 (16.0%)	5 (2.9%)	3.46	1.032
18. Various task types increase the test's level of difficulty.	7 (4.0%)	38 (21.6%)	81 (46.0%)	39 (22.2%)	11 (6.3%)	2.95	.921
19. The process of administering the computer-based listening test is complicated.	1 (.6%)	6 (3.4%)	28 (15.8%)	73 (41.2%)	69 (39.0%)	1.85	.847
20. You like this type of computer-based test. (The test that includes pictures and integrates various test tasks.)	41 (23.2%)	87 (49.2%)	41 (23.2%)	6 (3.4%)	2 (1.1%)	3.90	.833

The answers gained from the questionnaire reveal students' positive views towards the EIL CBT. The data shows the students agreement that the test measures the English listening abilities used to perform everyday life tasks ( $\bar{x} = 4.04$ ). Secondly, most of them agree that the contents of the test reflect the topic found in everyday life and at

work ( $\bar{x} = 4.15$ ). Also, the majority of them agree that the topics suit the test takers ( $\bar{x} = 3.82$ ). Regarding their views towards the integration of non-native accents, the majority of the students agree that it is important to assess one's ability to understand international English accents ( $\bar{x} = 4.20$ ); however, when they are asked if these accents affect their comprehension, their answers fall in the middle of the scale ( $\bar{x} = 3.48$ ). Based on the items asking about the test, the majority students agree that these items portray their proficiency ( $\bar{x} = 3.55$ ), and feel that the time allocation is sufficient ( $\bar{x} = 3.81$ ). They also agree that the scores on the test can be used by employers as a criterion to judge their listening proficiency ( $\bar{x} = 3.59$ ). When asked about the level of difficulty of the test, the majority's view ( $\bar{x} = 2.77$ ) lies in the middle of the scale.

In addition, the data shows students' positive opinions concerning the use of the computer-based test. The majority of the students disagree with the statement that claims the test is too difficult because it is computer-based ( $\bar{x} = 1.82$ ). Also, a great number of students emphasize that the ability to use the computer does not have any effects on their performance ( $\bar{x} = 4.28$ ), and that they do not have any problems with typing the answers since they have enough time ( $\bar{x} = 4.24$ ).

Concerning the interface design, the majority of the students agree that the language used in directions and questions are clear and comprehensible ( $\bar{x} = 3.86$ ). Their preference of the integration of pictures into the test is not highly agreed with ( $\bar{x} = 3.60$ ), and their views towards how the pictures help increase their listening comprehension is not greatly agreed with as well ( $\bar{x} = 3.46$ ). Although they have mixed opinions whether various task types, e.g. putting pictures in order, completing notes, etc. lead to a greater level of difficulty ( $\bar{x} = 2.95$ ), they like taking the test with various task types ( $\bar{x} = 4.05$ ). Moreover, few see the use of computer to administer a test as complex ( $\bar{x} = 1.85$ ). All in all, the majority of the students are satisfied with the EIL CBT, which is the test that integrates pictures, various task types and diverse English accents ( $\bar{x} = 3.90$ ).

4.1.3.2 The views of the students separated into the advanced and non-advanced groups that were shown on the Likert scale

Since the objectives of the study mainly focus on the use of strategies and the listening performance of high and low-listening ability groups, a separate presentation of the students' views will be even more beneficial. The comments obtained from each group towards the computer-based listening test are listed in the following table. t-test is used to explore if there are any significant differences in their views towards the test.

Table 4.12

The Views of the Advanced and the Non-advanced Groups towards  
the Computer-based Listening Test

Question Items	Advanced Students (1)						Non-advanced Students (2)						t	Interpretation
	5 Strongly agree	4	3	2	1 Strongly Disagree	$\bar{X}$ S.D	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$ S.D.		
1. The test measures the English listening abilities used to perform everyday life tasks.	7 (23.3%)	18 (60.0%)	5 (16.7%)	-	-	4.07 .640	8 (22.2%)	18 (50.0%)	9 (25.0%)	1 (2.8%)	-	3.92 .770	.850	No significant difference
2. The content of the test reflect those found in everyday life and at work.	10 (33.3%)	15 (50.0%)	5 (16.7%)	-	-	4.17 .699	6 (16.7%)	26 (72.2%)	3 (8.3%)	1 (2.8%)	-	4.03 .609	.852	No significant difference
3. The topics integrated in the test suit senior Commerce and Accountancy students	5 (16.7%)	12 (40.0%)	10 (33.3%)	2 (6.7%)	1 (3.3%)	3.60 .968	7 (19.4%)	22 (61.6%)	6 (16.7%)	1 (2.8%)	-	3.97 .696	1.760	No significant difference

P\* < .05, P\*\* < .01

Question Items	Advanced Students (1)							Non-advanced Students (2)							t	Interpretation
	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D.	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D.		
4. English tests should also assess students' abilities to understand international English accents since this portrays the use of English in real life.	17 (56.7%)	8 (26.7%)	4 (13.3%)	1 (3.3%)	-	4.37	.850	12 (33.3%)	13 (36.1%)	9 (25.0%)	2 (5.6%)	-	3.97	.910	1.806	No significant difference
5. The accents of the non-native English speakers negatively affect your comprehension.	8 (26.7%)	7 (23.3%)	9 (30.0%)	4 (13.3%)	2 (6.7%)	3.50	1.225	7 (20.0%)	9 (25.7%)	14 (40.0%)	5 (14.3%)	-	3.51	.981	-.052	No significant difference
6. The scores on the test portray your English listening proficiency.	2 (6.7%)	13 (43.3%)	10 (33.3%)	5 (16.7%)	-	3.40	.855	5 (13.9%)	14 (38.9%)	15 (41.7%)	2 (5.6%)	-	3.61	.803	-1.033	No significant difference
7. The test is good because you are allowed to take the test at your own pace.	9 (30.0%)	10 (33.3%)	9 (30.0%)	1 (3.3%)	1 (3.3%)	3.83	1.020	5 (13.9%)	18 (50.0%)	11 (30.6%)	1 (2.8%)	1 (2.8%)	3.69	.856	.602	No significant difference
8. The scores on the test can be used by employers as an evaluation of your listening ability.	7 (23.3%)	10 (33.3%)	7 (23.3%)	5 (16.7%)	1 (3.3%)	3.57	1.135	4 (11.1%)	15 (41.7%)	12 (33.3%)	3 (8.3%)	2 (5.6%)	3.44	.998	.465	No significant difference

P\* < .05, P\*\* < .01

Question Items	Advanced Students (1)							Non-advanced Students (2)							t	Interpretation
	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D.	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D.		
9. The test is too difficult for the students.	-	1 (3.4%)	8 (27.6%)	15 (51.7%)	5 (17.2%)	2.17	.759	3 (9.1%)	9 (27.3%)	14 (42.4%)	7 (21.2%)	-	3.24	.902	-5.013**	2>1
10. You have enough time to answer questions on the test.	22 (75.9%)	4 (13.8%)	2 (6.9%)	1 (3.4%)	-	4.62	.775	8 (24.2%)	14 (42.4%)	7 (21.2%)	3 (9.1%)	1 (3.0%)	3.76	1.032	3.682**	1>2
11. The test is difficult because it is computer-based.	1 (3.6%)	1 (3.6%)	2 (7.1%)	8 (28.6%)	16 (57.1%)	1.68	1.020	-	1 (3.1%)	8 (25.0%)	10 (31.3%)	13 (40.6%)	1.91	.893	-.922	No significant difference
12. Your ability to use the computer does not affect your performance on the test.	16 (55.2%)	9 (31.0%)	1 (3.4%)	3 (10.3%)	-	4.31	.967	13 (39.4%)	13 (39.4%)	4 (12.1%)	3 (9.1%)	-	4.09	.947	.901	No significant difference
13. Your typing ability does not affect your performance on the test because you have enough time	18 (62.1%)	9 (31.0%)	1 (3.4%)	1 (3.4%)	-	4.52	.738	13 (39.4%)	15 (45.5%)	5 (15.2%)	-	-	4.24	.708	1.495	No significant difference

P\* < .05, P\*\* < .01

Question Items	Advanced Students (1)							Non-advanced Students (2)							t	Interpretation
	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$	S.D.		
14. Directions and questions are clear and comprehensible.	13 (44.8%)	10 (34.5%)	4 (13.8%)	-	2 (6.9%)	4.10	1.113	3 (9.1%)	20 (60.6%)	10 (30.3%)	-	-	3.79	.600	1.363	No significant difference
15. You like the use of pictures in the test.	8 (27.6%)	8 (27.6%)	8 (27.6%)	1 (3.4%)	4 (13.8%)	3.52	1.326	5 (16.1%)	15 (48.4%)	9 (29.0%)	2 (6.5%)	-	3.74	.815	-.784	No significant difference
16. You like the test because it integrates various types of tasks e.g. putting pictures in order, completing notes, etc.	10 (34.5%)	11 (37.9%)	6 (20.7%)	1 (3.4%)	1 (3.4%)	3.97	1.017	9 (27.3%)	19 (57.6%)	5 (15.2%)	-	-	4.12	.650	.727	No significant difference
17. The pictures increase your comprehension.	1 (3.4%)	9 (31.0%)	11 (37.9%)	6 (20.7%)	2 (6.9%)	3.03	.981	6 (18.8%)	13 (40.6%)	9 (28.1%)	4 (12.5%)	-	3.66	.937	-2.531*	2>1
18. Various task types increase the test's level of difficulty.	2 (6.9%)	8 (27.6%)	12 (41.4%)	6 (20.7%)	1 (3.4%)	3.14	.953	1 (3.0%)	10 (30.3%)	16 (48.5%)	5 (15.2%)	1 (3.0%)	3.15	.834	-.060	No significant difference

P\* < .05, P\*\* < .01

Question Items	Advanced Students (1)						Non-advanced Students (2)						t	Interpretation
	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$ S.D	5 Strongly agree	4	3	2	1 Strongly disagree	$\bar{X}$ S.D.		
19. The process of administering the computer-based listening test is complicated.	-	-	5 (17.2%)	11 (37.9%)	13 (44.8%)	1.72 .751	1 (3.0%)	1 (3.0%)	6 (18.2%)	15 (45.5%)	10 (30.3%)	2.03 .951	-1.393	No significant difference
20. You like this type of computer-based test. (The test that includes pictures and integrates various test tasks.)	10 (34.5%)	11 (37.9%)	8 (27.6%)	-	-	4.07 .799	6 (18.2%)	18 (54.5%)	6 (18.2%)	2 (6.1%)	1 (3.0%)	3.79 .927	1.270	No significant difference
Total	166 (28.3%)	174 (29.6%)	127 (21.6%)	71 (12.1%)	49 (2.3%)	3.56 .338	122 (18.0%)	283 (41.7%)	178 (26.2%)	67 (9.9%)	29 (4.3%)	3.61 .290	-.595	No significant difference

P\* < .05, P\*\* < .01

According to the table presenting the advanced and non-advanced students' opinions towards the EIL CBT, the results gained from the t-test show that both groups agree on most viewpoints as the t-test shows no significant difference ( $t = -.595$ ). Like the opinions of all the volunteers who took the test, as shown in Table 30, both groups confirm their positive views towards the test. However, there are several points about the test that students have significantly different views. The first item is their opinion about the level of difficulty of the test. More of the non-proficient students regard the test as too difficult for them when compared to the proficient listeners ( $t = -5.013$ ,  $p < .01$ ). Secondly, the high-listening ability group shows their strong agreement on the statement claiming that they have enough time to answer all questions while their counterpart's remark is not that strong. Their answers are significantly different as the t-test value is 3.682, which is significant at the level of .01. Lastly, when comparing how pictures are useful for them, the non-advanced listeners regard them as more helpful than the proficient listeners ( $t = -2.531$ ,  $p < .05$ ).

#### 4.1.3.3 The views of the students expressed in the additional comments part

##### 4.1.3.3.1 Additional views of the advanced students towards the EIL CBT

After the analysis of the comments provided by thirty students, who are classified as proficient, their views towards the test can be categorized into four main parts: interface design, quality, application and others. These are listed under the advantages and the disadvantages of the test.

Table 4.13

## Additional Views of the Advanced Students towards the EIL CBT

## Advantages of the test

<b>1. Comments on the interface design</b>	<b>Frequency</b>
- pleasant screen design i.e. pleasant colors, easy to read, beautiful alignment and format	3
- easy to read	1
<b>2. Comments on the quality</b>	<b>Frequency</b>
- perfect	1
- various task types and accents	13
- measurement of various listening sub-skills e.g. taking notes	1
- integration of part 3 (note completion) generating more effective assessment of test takers' listening proficiency when comparing to multiple choices	1
- being a non-adaptive test giving students opportunity to get better scores if performing better towards the end of the test	1
- simple language use in directions making it easy to understand	3
- clear and loud voice	1
<b>3. Comments on the application</b>	<b>Frequency</b>
- convenient and user friendly	4
- focusing on individual i.e. doing the test individually	1
<b>4. Other comments</b>	<b>Frequency</b>
- not boring	7
- not boring because of the pictures	1
- fun and not causing stress	3
- integration of Thai contexts unlike other standardized tests	1
- enough time allocation	1
- trendy because of the use of the computer	1

## Disadvantages of the test

<b>1. Comments on the interface design</b>	<b>Frequency</b>
- unable to return to the previous questions	1
- unable to return to the previous questions to change the answer	1
- unclear pictures	3
- pictures irrelevant to the context	1
- the orange color making it difficult to read the text	1
- time running when directions were read	1
<b>2. Comments on the quality</b>	<b>Frequency</b>
- easy to understand the non-native accents	1
- integration of more technical vocabulary related to commerce and accountancy needed	2
<b>3. Comments on the application</b>	<b>Frequency</b>
- bad quality of the computer equipment e.g. the mouse, the headphones, etc.	5
- inconvenient for those unable to type	2
- unfair to those not used to staring at the computer screen for a long time	1
<b>4. Other comments</b>	<b>Frequency</b>
- better if allowed to listen twice	2
- too many questionnaires provided	1

## Additional comments for test revision

Comments	Frequency
- if choosing to listen twice, students can be punished by deducting their scores	1
- increasing more level of difficulty	2
- adding a section on grammar testing	1
- using more beautiful pictures	3
- no number of the remaining questions indicated	2
- providing only one questionnaire for each part	1

The open-ended part of the questionnaire includes both positive and negative comments provided by the students. The good side of the interface design includes the pleasant screen design and the text, which is not too dense. The quality of the test generally lies on the students' positive views towards the use of various task types and the integration of international accents into the test. Moreover, the language in the directions is simple enough to understand. The application of the computer in delivering the test is reported to be convenient and focuses on the individuals. With regard to other comments, students seem to enjoy taking the test, saying it is not boring. Interestingly, one student reveals great preference in the use of Thai contexts, unlike other standardized tests.

The flaws of the test, based on their opinions, are that some of the pictures are unclear and can be misleading. They also desire to be allowed to return to previous questions. Concerning the quality of the test, students insist that more integration of the business terms and vocabulary relevant to their field of study is needed to make the test more challenging.

The problem underlying the application of the test mainly concerns the quality of the computer and the equipment such as the mouse, the headphones, etc. Only few think it is biased against those students who can not type or who can not bear staring at

the screen for a long time. Other comments include students' desire to be allowed to listen to twice.

Additional comments include using more beautiful pictures, increasing the number of beautiful pictures, and indicating the number of the remaining questions. Only one student reports that answering the questionnaire for every question is a tedious task.

#### 4.1.3.3.2 Additional views of the non-advanced students towards the EIL CBT

The non-advanced group includes 36 students. Their opinions towards the test can also be categorized into four main parts: interface design, quality, application and others. They are listed under the advantages and the disadvantages of the test.

Table 4.14

## Additional Views of the Non-advanced Students towards the EIL CBT

## Advantages of the test

<b>1. Comments on the interface design</b>	<b>Frequency</b>
- new and modern	3
- pleasant to look at	1
- integration of pictures	3
- pictures help increase comprehension	2
- beautiful pictures	1
<b>2. Comments on the quality</b>	<b>Frequency</b>
- clear voice	1
- integration of various task types	8
- a variety of the length of conversations	1
- appropriate order of questions (from easy to difficult)	1
- appropriate level of difficulty	1
- clear directions and questions	1
- appropriate length of time provided	1
- valid and reliable enough to assess students' listening proficiency	3
- good for practicing and evaluating one's listening ability	2
- good for practicing various English accents	1
- good for practicing with various task types	1
<b>3. Comments on the application</b>	<b>Frequency</b>
- convenient and user friendly	5
- easy to use	6
- eliminating poor handwriting problems	1
<b>4. Other comments</b>	<b>Frequency</b>
- not boring	2
- fun	1

## Disadvantages of the test

<b>1. Comments on the interface design</b>	<b>Frequency</b>
-	-
<b>2. Comments on the quality</b>	<b>Frequency</b>
- too many questions/ too lengthy	1
<b>3. Comments on the application</b>	<b>Frequency</b>
- unfair to those not used to staring at the computer screen for a long time	1
- quality of the headphones	1
- unfair to those not familiar with the computer	1
<b>4. Other comments</b>	<b>Frequency</b>
- unable to capture the conversations and talks	5
- allowed to listen only one time	9
- more complicated because of the questionnaire	1
- adding guessing as one of the strategy	1

## Additional comments for test revision

<b>Comments</b>	<b>Frequency</b>
- allowing students to listen twice or more	7
- allowing students to see the questions before listening	2
- decreasing level of difficulty	3
- using more interesting pictures	1
- speaking more slowly	1
- providing only one questionnaire for each part	2

Like the advanced students, the non-advanced group likes the design and the format of the test, especially when pictures are incorporated. They feel that the pictures help them understand the conversations and the talks better. They also regard a computer-based test like this as a new and modern method to assess language abilities.

Regarding the quality of the test, they view the test as a valid and a reliable means to evaluate students' listening performance. Also, a wide range of task types are appropriate and advantageous in their opinions. Moreover, a few view the test as good for practicing and evaluating their listening ability.

Many students report positively on the use of computer to deliver the test due to its user friendliness. One likes it because it can eliminate the problems concerning illegibility of students' handwriting. Other comments include their optimistic views towards the test; for example, the test is fun and not boring.

However, the disadvantages mainly lie in the fact that they are allowed to listen to the talks and the conversations only once. Many students, then, are unable to capture the conversations and talks. Only a few mention a bias against those unfamiliar with the computer, and the bad quality of the equipment in the lab, e.g. the headphones.

Regarding the additional comments, the students suggest that the statements, conversations and talks be played twice. Three test takers insist the reduction of the level of difficulty. Two would like to see the questions while listening to the auditory input. Also, two of students do not like the integration of the questionnaire after each set of questions.

#### 4.1.4 Summary of the results

The chapter presented the results of the study under three main topics based on the sources of the data: data from the cognitive and metacognitive questionnaire, data from the retrospective interviews, and data from the EIL CBT questionnaire.

The first hypothesis is rejected since the statistics show no significant relationships between the students' use of cognitive strategies and the scores of both groups. The relationships of metacognitive strategies and their scores are the same for the non-advanced group; however, the relationships are significantly negative in the case of the advanced listeners. However, the second hypothesis is confirmed since the study finds greater and more appropriate use of cognitive and metacognitive strategies by the high-listening-ability group than the low-listening-ability group.

The interviews emphasize the students' answers on the questionnaire. They show different degrees of both group's dependence on each strategy. For example, the high-listening-ability group relies on the concluding strategy more than the low-listening ability group. Moreover, they reveal various approaches of student's use of the same strategies. For instance, the low-listening-ability group concludes from isolated words, whereas the high-listening-ability group makes a conclusion from the whole input.

Finally, the views of the students concerning the computer are discussed. The major remarks can be concluded as follows. The majority of the students disclose optimistic opinions towards the use of computer, especially towards the interface design, the incorporation of various task types, the individualism the EIL CBT offers, etc. They realize the importance of international accents, and the assessment of their ability to understand the accents. However, they think their comprehension can somehow be affected by the accents. Lastly, the pictures are regarded as making the test more interesting, but they are found helpful for only the non-advanced group.

## **4.2 Discussion of the Results**

### **4.2.1 The relationships between cognitive and metacognitive strategies and listening proficiency**

'No correlation between cognitive and metacognitive strategies and listening proficiency'

The results show no correlation between cognitive strategies and listening proficiency in both the high-ability and the low-ability groups. Interestingly, for the high ability group, the data shows the trend towards a positive relationship between their proficiency and their use of cognitive strategies whereas the trend of the relationship between the low-ability group and their use of the strategies are towards a negative correlation. Although the findings contradict many research studies in the past (Aek Phakiti, 2003; Liu, 2004 and Yu, 2003), they do support the rest that show opposite and mixed results (Mullins, 1992 in Bedell and Oxford, 1996; Patcharaporn Kheowruenromya, 1994 and Song, 2005). Described by Song (2005), neither consensus concerning strategy use nor agreement on the relationships between the strategies and language proficiency has been established. This is due to various reasons concerning differences in categorization of the strategies, focus on language skills, tasks, contexts (i.e., learning and testing), participants, etc.

The explanation of no correlation between cognitive and metacognitive strategies and students' performance in the study will be discussed based on three topics: participants' listening proficiency level, listening comprehension processes, and other factors.

#### 1. Proficiency level

It is relatively difficult to set a benchmark to classify who is proficient or who is not. In the study, the proficiency level is determined by the scores the test takers achieved on the test on the basis of the SD value. One problem relevant to categorizing students is found. It was the difficulty to find students who fall into the proficient group or the non-proficient group. Most of the students (120 out of 186) are at the intermediate level. The findings of no relationship between cognitive strategies and the students' proficiency can be explained in two ways in relation to their proficiency level.

Firstly, it might be from the fact that the majority of the students in the advanced group do not truly possess high listening proficiency. Patcharaporn Kheowruenromya (1994) explained in her research study that no correlation between the students' listening proficiency and the strategies might be from the fact that the students' listening

proficiency does not reach the actual proficient level since the listening skill is the least practiced skill in the EFL context, especially in Thailand. Therefore, Thai students whose listening scores reach the advanced level may not be comparable to students from other parts of the world.

On the contrary, in cases where the students' level of proficiency is considered truly high, it may be from their ability to process the input by using automatic approaches that prevent them from applying a great number of cognitive strategies. Vinther (2005) claimed that the verbalizations of the advanced students who were involved in CALL, designed to teach syntax, show less use of cognitive strategies once they get to the automatic level.

## 2. Listening comprehension processes

Research studies in the past have been dominated by those illustrating significant correlation between proficiency and strategies. However, unlike the reading skill where significant, positive relationships between the use of strategies and students' proficiency are mostly established (Aek Phakiti, 2003 Liu, 2004 and Yu, 2003), the types of relationships related to the listening skill seem to vary. Researchers cannot generalize the same relationship for the listening skill. Firstly, the intricate, systematic processing may account for the incongruent findings. Taking Buck's (2001) process of understanding discourse into consideration, researchers will find comprehending listening input a difficult task involving word comprehension, idea unit processing, connected discourse processing, foregrounding, the use of world knowledge, etc.

O'Malley and Chamot (1990) also mentioned three types of comprehension processes: perceptual processing, parsing and utilization. Each is very complex and involves a heavy load of cognitive processes; for example, the first processing stresses attention to oral or written texts. During the stage, portions of the messages either words or chunks of words are retained in short-term memory waiting to be processed. Limitations do exist since new information is always ready to take place of old information. Some initial decoding processes of the information may also begin. Parsing is a process where words and strings of words serve as sources of meaning

construction. In this stage, they are matched with their declarative knowledge that is stored in ones' long-term memory. Lastly, during the utilization process, sometimes referred to as elaboration, the absolutely new information that listeners hear interplays with the one they know. In other words, they must relate the new information to the knowledge stored in their long-term memory.

The decoding procedures are not only complicated, but they also require automatic, simultaneous processing (Duzer, 1997) since speech comes in rapid succession (Buck, 2001). Based on this study, those who are proficient tend to spend less time on the comprehension processes. As for the high-ability students, the procedures appear to be automatic, also supported by Peterson (2001) who claimed that proficient listeners are able to deal with all listening processes simultaneously and efficiently. Bacon (1992) stated that less cognitive demand is evidenced when learners are completely able to decode incoming input. If automaticity comes into play, perhaps there will not be much room for the use of strategies.

Another research study that made use of the think-aloud technique shows a trade-off between students' automatic level and cognitive strategies when they were using a CALL program to learn syntax. It was reported that the very good students' use of cognitive strategies almost disappears when they have near automatic approaches to the task. It was concluded the number of cognitive strategies that students reported are less as the mastery level is reached (Vinther, 2005).

Moreover, no correlation between the strategies and students' listening proficiency may be due to students' failure to reflect on them. If comprehending processes engage such complicated steps, it is possible that students may fail to report what is happening when they are listening to input. Cumming (1994) proposed certain limitations of verbal reports of students by emphasizing Selinger's (1983: 680) claim that "much cognitive processing is inaccessible because it is unconscious."

### 3. Other factors

No significant relationship between the use of cognitive strategies and the scores of, particularly, the advanced group can be explained based on various factors as discussed in the following part.

#### 3.1 Factors influencing learning strategies

Firstly, different types of tasks require different choices of strategies (Bialystok, 1981; O'Malley and Chamot, 1990; and Oxford, 1989) cited in Oxford (1993). Some types of tasks activate more or a wider range of strategies than others. For example, the results of the study show a significantly moderate relationship between the use of the strategies by the advanced group in Part 1 and their total scores whereas there is no such relationship in the investigation of other parts. This reveals that the students make use of a great quantity of appropriate strategies as identified by the majority of the experts in Part I, which leads to their better performance on the test as a whole. It may be due to the fact that the nature of the task in Part 1, which involves listening to short statements and giving appropriate responses, requires the concluding strategy. Also, it is the task regarded by the students as the most difficult among the four parts.

Apart from the types of tasks, learning styles can also be attributed to how one chooses strategies (Oxford, 1993). From the data and the interviews, some good students choose to depend on the rules in part 1 whereas others activate their concluding strategy as their primary tool to cope with the listening input. However, since the study does not explore what kind of learning styles each student possesses, it is able to only predict that the variation in their personal characteristics may affect their choice of cognitive strategies resulting in no significant relationship between the use of strategies and the scores.

### 3.2 Factors influencing performance on a language test

No evidence supporting positive relationship between the strategy use and the language test scores of the high-ability listeners can also be explained by using Bachman's (1990) framework. The main factor that is found to affect the test scores is communicative language ability. Cognitive abilities account for a much smaller part of the test scores underlying the personal characteristic category. It may be able to be concluded that the advanced students can do better on the computer-based listening test chiefly because of their language ability. Therefore, this can explain why no relationship occurs. Cognitive abilities are considered a small factor influencing the overall test scores. Of all the four factors that influence language test scores that Bachman (1990) claimed, communicative language ability shows the greatest responsibility accounting for students' proficiency scores whereas test method facets take the second position. The third factor affecting the performance is personal characteristics, where cognitive abilities lie, and the least in effect is random factors.

'The significant, negative relationships between metacognitive strategies and student performance'

The data disclosed that the weight of the strategies used leans towards cognitive strategies. The majority of experts assign less importance to the metacognitive strategies, compared to cognitive strategies as can be viewed from the scores reflecting their choice of the metacognitive strategies. This can be linked to the research design that focuses on the most important strategies in use. Chesterfield and Chesterfield (1985), in Purpura (1999) claimed that metacognitive strategies are last in use compared to the receptive and self-contained strategies, and the strategies concerning interpersonal interaction. This affects the findings in the way that no matter what greater metacognitive strategies the students select, they will not lead to higher listening scores if no score is assigned to their choice of metacognitive strategies.

In summary, it seems to be too soon to conclude from the study that the use of the metacognitive strategies is related with low test scores since the results are derived from the degree of importance that the experts assign. Due to the research procedures

which focus on the most significant strategies that come into play, when the experts have to decide which three strategies are the most useful for them, metacognitive strategies generally take less significant roles.

4.2.2 The nature of the cognitive and the metacognitive strategy use of the high and the low-listening-ability groups

'The appropriateness and the greater number of strategies used by the high-listening ability group'

The listening strategy scores are marked based on the criteria gained from the majority of the experts. The higher listening strategy scores of the advanced group on both cognitive and metacognitive categories imply that the strategies employed by that group of students highly comply with those used by the experts as opposed to their counterparts. In other words, the advanced group makes use of the strategies more appropriately and in greater number than the low-listening ability group.

The findings support the views towards learning strategies found in research studies in the past. For example, Oxford and Burry-Stock (1995) claimed a linear relationship between the strategy use and language proficiency. The more proficient students show greater number of frequencies in their use of strategies. Chamot, Küpper and Impink-Hernandez (1988) reported a larger range of strategies and more appropriate strategies chosen by the "effective" students. They were reported to be able to make a better use of both their world knowledge and their linguistic knowledge. Oxford (1990) claimed other studies supporting greater strategy use by more proficient language learners. Other works that show the same results include those carried out by Abraham and Vann (1987), Kaylani (1996), Hoang (1999), and Liu (2004).

Although the proficient group is regarded as more effective users of cognitive and metacognitive strategies and tend to make use of the strategies more than the non-proficient group, it may be biased to conclude that the latter are inactive strategy users. The findings of the study, in fact, illustrate evidence for the non-advanced students' use

of both strategies. The fact that they employ strategies significantly less than the advanced students in almost all categories is not enough to judge them as passive strategy users as supported by Vann and Abraham (1990). In their study, the successful learners are more effective strategies users. However, the researchers also provided counterevidence for the claim that unsuccessful learners are inactive strategy users. The primary difference between how the successful and the unsuccessful learners makes use of their strategies mainly lies in the appropriateness, rather than the quantity.

'Differences of learning strategies used by the high and the low-listening ability groups'

When the six learning strategy processes, three cognitive processes and three metacognitive processes are considered, the high-listening ability group is regarded as greater users of all processes, except the knowledge associating processes, in which the statistical analysis shows no significant differences in the two sub-categories, namely recombining strategies and linking to prior knowledge strategy.

In fact, the differences underlying the two groups' application of the strategies should not only be investigated in terms of the quantity and the frequency alone. As the qualitative findings reveal, the processes and the way students apply those strategies differ a great deal. The data from the interviews can perhaps explain how the advanced students make use of the strategies more effectively than the non-proficient group.

In the following part, the differences in the use of strategies by both groups are discussed.

#### 1. Analyzing and reasoning processes

These processes consist of four sub-categories: inferencing, concluding, translating and previewing from pictures and answer choices. The dependence on the inferencing strategy shows similar purposes claimed by the high and the low-ability groups. Questions testing inferencing, in nature, require students to infer from the information indirectly conveyed; therefore, when the students feel that they are unable to elicit the answers from the listening input, they make use of this strategy. The results portray their application of the strategy when they encounter problems. The problems

include when they are uncertain with what the correct answer should be and when the information they have is too little to lead to an answer. Correspondingly, Young (1997) found similar use of the inferencing strategies regardless of both their gender and their English listening achievement. Young also looked into more details concerning the patterns of listening strategy sequence where similar patterns towards the use of the listening strategies were reported. The inferencing strategy is used to activate their background knowledge of the topics they are listening to before the concluding strategy is reinforced.

“Concluding” is the strategy used the most frequently by the proficient group, and it is used significantly in greater numbers by the proficient group than the non-proficient group. Also, it is used in different ways since the non-advanced listeners mostly conclude after their word-by-word analysis. Firstly, based on the interviews, this strategy establishes a clear relationship with the automaticity of proficient test takers’ input processing abilities and their abilities to decode input in larger portions. According to Buck (2001), the automaticity of input processing can be explained by the nature of speech which is normally delivered in real time. Good listeners should, therefore, been characterized as those capable of automatically making generalization of the input. Secondly, this study confirms the importance of the concluding strategy in the view of the advanced students. In Young (1997), concluding is also primary, though the last in the decoding pattern, for the students to generate a correct answer. Also, like O’Malley’s and Chamot’s (1990) study, this study reveals the proficient students’ report on their great use of the concluding strategy. Thirdly, the method of approaching the input differs between the two proficiency groups (O’Malley and Chamot, 1990 and Vandergrift, 2003). The study found good students listen to larger chunks whereas the low-ability listeners focus on words or rely on a word-by-word basis. In addition, concurring with the findings in O’Malley’s and Chamot’s (1990), this study found that the good listeners only rely on individual words when they fail to understand the message.

Overall, the advanced listeners activate their automatic process of decoding the listening input as well as incorporate the concluding strategy use due to their ability to understand most of the input they hear. This may be associated with Neisser’s (1967)

theory of perceptual processing in listening or 'analysis-by-synthesis', which explains how a listener decodes input.

The study, corresponding with that of Vandergrift (2003), reveals that translating is not a popular strategy among the proficient listeners. Neither do the majority of the experts make use of it, nor do the advanced students rely on it. This can be explained by their automatic decoding processes. The translation strategy is not triggered, perhaps because the listening processes happen in simultaneous and rapid succession (Duzer, 1997). Their comprehension process has already become automatic. Unlike the non-advanced group, who choose the translation strategy whenever they possess enough information to be processed, the advanced students rely on the strategy only when facing problems. This study concurs with the work conducted by Mangubhai (1991) in which translation was reported to be used by the non-advanced learners more than their counterparts.

Previewing from pictures and answer choices, the last sub-strategy under the analyzing and reasoning processes, is not used by the high-listening ability group as they explain that they try to avoid an absolute guess, or a guess without any clues. Their answers support Oxford's (1990) description of good language learners as willing and accurate guessers. On the other hand, without any information at hand, resulting from their lack of listening proficiency, the low-ability listeners greatly rely on this strategy. Many make use of this strategy in an orchestrated way with other strategies; for example, looking at the pictures and linking what they hear to their prior knowledge before making a guess. However, it is inappropriate and ineffective since the processes are followed without their comprehension of the listening input.

## 2. Knowledge associating processes

These processes are composed of three sub-categories: recombining words, linking with prior knowledge, and applying the rules. The overall knowledge associating processes are the only cognitive process which shows no significant differences in their use between the high and the low-listening ability groups.

The first strategy, recombining words, is the second important strategy that the non-proficient group relies on following the previewing strategy. Their heavy dependence on the strategy can be linked to the concluding strategy discussed earlier. Since the non-proficient listeners approach the listening tasks on word-by-word basis (O'Malley and Chamot, 1990), recombining words is undoubtedly important to them. Although they can capture certain words, it is difficult to generalize to arrive at the right answers with their limited linguistic knowledge. It does not seem to be important that the findings show no significant difference in the use of the recombining strategy since what is more significant underlies the more appropriate use of the recombining strategy by the high-ability students. They choose to focus on individual words depending on the task type, for instance, when a particular word is needed to be put as an answer.

The second strategy, linking with prior knowledge, is applied by both groups without any significant differences. Supported by the literature (Carrell, 1981, 1983, 1984 and 1987; Duzer, 1997; and Buck, 2001), background knowledge is viewed as important by the students although not as significant to the proficient listeners as the concluding strategy. When it comes to testing and evaluation, prior knowledge is one strategy that can help them focus on what they are listening to, but is unable to lead them to an exact, accurate answer. However, if referring to the appropriateness and the effective issues claimed earlier, the study reveals an orchestrated way to use this strategy by the high-ability group with the use of the concluding strategy or other strategies. They apply the strategy with confidence and certainly with enough linguistic information to generate correct answers. On the other hand, using the prior knowledge with the inability to establish meanings from the auditory messages negatively impacts the non-advanced students' selection of an accurate answer. In Vandergrift (2003), the low-ability listeners make some use of prior knowledge; however, with time constraints, they are not always capable of validating the appropriateness of their application.

The last sub-category, applying the rules, does not correspond with others under the same processes. Unlike the study done by Song (2005), in which the test takers showed no significant difference in using the strategy, in this study rule application was reported to be used by the high-ability students significantly more than

by the low-ability group. The reason may be from different tasks and means of test delivery. The test that Song (2005) used was the Michigan English Language Assessment Battery (MELAB) that targets four skills (speaking was optional). This study, however, implies the high-ability group's effective use of the rule application strategy, especially in the first part of the test in which they need to listen to a short statement and choose a correct response. They were reported to concentrate on the words which serve as a key to an answer such as "how long", "how about", "do you mind", etc. It shows the appropriateness and the effectiveness of the strategy chosen as opposed to the tasks that they are dealing with as Oxford (1993) claimed that "task types" is one of the factors affecting students' choice of strategies.

### 3. Information retrieving processes

The third cognitive processes involve two sub-processes which are repeating and taking notes. These processes are connected to the memory strategy as might be named in other research. The findings show greater use of these processes by the advanced listeners than the non-advanced listeners.

"Repeating" is directly associated with memory that has been claimed to be useful in comprehension processes, especially listening comprehension. In the study, the students with higher listening ability show the willingness and the capability to memorize the input more than the lower-ability group. The results correspond with Mangubhai's (1991) findings that more memory strategies are used by the high achievers when listening. The memory strategy, although not important or frequently used in some contexts like in the work of Liu (2004), still holds a vital role in listening comprehension. The importance of memory in language processing is emphasized by Wold (1978) who explained that the information about the earlier parts of input that have already been received must be retained so that they can influence or be influenced by the last part of the input. The importance of the memory strategy can be explained by the decoding processes that involve the retention in short-term memory before converting what is stored into meaningful representations

"Taking notes" is one of the two methods this research focuses on to elicit how the test takers retain the information they hear. The application of the strategy used by the advanced students is greater in quantity than the non-advanced listeners. The application can be viewed as depending on the task type, the ability to memorize or repeat the information and the effectiveness of their notes. The test takers will select the note taking strategy if the task allows them to take notes. However, if they are able to memorize the information, they will choose to report on the repeating strategy which shows their dependence on the memory. The time when note taking is not reported as useful is when they fail to take effective notes. The results showing the importance of the note taking strategy contradict those found by Hale and Courtney (1994) who reported little effect on student performance. The non-advanced group, like the students in the study of Hale and Courtney, said note taking is not helpful and it is hard to concentrate on both the listening and the writing skills at the same time. Therefore, the reason that can explain such a difference is the students' inexperience in taking effective notes.

#### 4. Planning processes

The sub-process underlying this process is planning. Based on the majority of the experts, planning is the only metacognitive skill they rely on. The data gained from the majority of the students not only shows a concurrence with the experts, but also emphasizes the greater use of the metacognitive strategies by the high achievers. Moreover, the findings reveal less use of the metacognitive strategies in quantity if compared to cognitive strategies. This data is supported by the work of O'Malley, Chamot, Stewner-Manzanares, et al (1985) in Purpura (1999) and Vandergrift (2003), who also found more use of metacognitive strategies by the more proficient and greater use of cognitive strategies than metacognitive strategies. Firstly, this may be due to the fact that metacognitive strategies do not have a direct effect on comprehension (Oxford; 1990 and Purpura, 1999). Therefore, the importance of the strategies is viewed by the test takers as less in use or as less important if they have to choose the most important ones that they employ. Secondly, the findings are supported by Chesterfield and Chesterfield (1985) cited in Purpura (1999). They stated in their work that metacognitive strategies were reported by the subjects as the last in use compared to the receptive

and self-contained strategies, and the strategies concerning interpersonal interaction. Finally, the findings advocate the claims proposed by Chamot, Küpper and Impink-Hernandez (1989) and Vann and Abraham (1990) cited in Oxford (1993), and Purpura (1999) because they illustrate that the use of metacognitive strategies involves the use of other cognitive strategies and depends on task types, e.g. putting pictures in order.

#### 4.2.3 Other significant results that can be linked to past studies

'The evidence of the top-down and the bottom-up approaches'

The top-down and the bottom-up approaches have been regarded as important to comprehension processes and there is no exception for the listening skill. The two approaches are related to two forms of knowledge, namely non-linguistic and linguistic knowledge. This is due to the nature of the two approaches. The top-down approach involves knowledge of the world, whereas the bottom-up approach requires such linguistic knowledge as phonology, lexicon, semantic and syntax (Brindley 1997; Hadley 2000 and Yi'an, 1998).

The use of the two approaches found in the study in relation to their use of cognitive and the metacognitive strategies by the students shows great differences. The high-ability group of students makes use of the strategies related to both top-down and bottom-up approaches, e.g. applying rules, concluding, linking with prior knowledge, etc. They also use them in greater quantity than the low-ability group who relies more on the contexts provided, e.g. pictures and their prior knowledge. The findings support Richards' (1988) argument against Kelly (1991) that the low-level learners possess insufficient linguistic knowledge to depend on. Therefore, the top-down approach tends to be more helpful to them.

Unlike the non-advanced listeners, the advanced group shows competence in using both approaches. And as supported by Richards (1990) in Celce-Murcia (2001), the selection of one approach over the other by the students depends on the familiarity of the listeners towards the topics. For example, if the talks can somehow be related to

their experience, e.g. traveling, using a copy machine, decorating a home, etc., they will draw upon their background knowledge.

#### 'Implications for the use of computer as a tool for language testing'

It is worthwhile discussing the students' point of views towards the use of computer as a means to deliver the test. Firstly, the results stress the importance of the interface design which refers to a clear and consistent interface that is based on good software design principles. The principles also emphasize that the interface design must support the goals of the programs. A program that has poor interface design can lead to misinterpretations of the students' language ability which, then, threatens the construct validity of the test (Bachman, 2000). In the study, the students report that the program is easy to use, and the screen layout and the color used are pleasant. This raises their motivation to take the test as most of them said that it is not boring.

Secondly, with an attempt to develop a computer-based test that integrates such quality claimed by Bachman (2000), a test that is more interactive than a paper-based test, more varied tasks like putting pictures in order or note completion are added into the test. Most of the students support Bachman's (2000) remark claiming that they like the EIL CBT since it integrates pictures and various task types.

The third factor that has been discussed by researchers as either decreasing or supporting test takers' performance is visuals. According to the study, students' views lean towards positive attitudes concerning the use of pictures in the test. However, when asked if the pictures help increase their comprehension, the answers from the two groups vary. This perhaps can be linked to their use of the pictures and their language proficiency. The high-ability group students, who seem to rely more on their linguistic knowledge, and make less use of the pictures, do not report a great positive effect of the use of pictures on their comprehension. On the other hand, the low-ability students report the use of pictures greatly helps them comprehend the listening messages. This can be associated with Duzer's (1997) claim that visual support can be used to enhance comprehension, but only in cases where listeners are able to interpret them correctly. In other words, pictures will be useful if they are appropriately applied in a positive

environment. Moreover, it indicates that the level of proficiency interacts with the degree of usefulness of the visuals that the students find (Bachman, 2003).

The fourth view elicited from students' perspectives towards the EIL CBT concurs with Bocij and Greasley (1996) in that the students report to be able to work through the test quickly and probably more quickly than when they take a traditional test. They find the EIL CBT convenient and easy to use. For example, handwriting or erasing wrong answers will become easier tasks. They also report no difficulty in typing texts since they are given enough time to deal with such tasks.

The fifth view, which the study reveals, concerns with international accents. Although some research argues against an incorporation of non-native accents in a listening test claiming that it will have negative effects on students' performance (Major, Fitzmaurice, Bunta et al, 2002; Ross and Langille, 1997), the study reveals students' perceptions concerning the importance of the ability to understand various English accents. However, both groups find that the international accents can somehow affect their comprehension.

Lastly, the individualism that is always regarded an advantage of a CBT (Alessi and Trollip, 1991) was also reported by the subjects in the study. The students feel less anxious and more individualized as they can move along in the test at their own pace. This decreases the degree of anxiety that can be triggered by a computer-based program.

To conclude, the study shows positive views towards the use of a computer-based listening test that integrates more interactive tasks and pictures. Although the test takers prefer the integration of visuals, the views towards the positive effects on the student' comprehension vary according to their level of proficiency. Individualism, good interface design and user friendliness can reduce the degree of anxiety and, at the same time, increase students' motivation that can affect their scores. Most interestingly, the students support the significance of being able to understand non-native accents although their comprehension is somehow reduced because of the unfamiliar accents. The results in other research that is against the integration of international English

accents may be varied due to the degree of foreign accent of the speakers integrated in a test (Major et al, 2002). Also, researchers need to keep in mind that the positive opinions about the use of computer for language testing differ according to subjects who take the test and contexts where tests are administered.

#### 4.2.4 Summary of the discussion

To conclude, the results of the study that showed no significant relationships between the students' use of cognitive and metacognitive strategies and their performance may be influenced by some factors such as students' true language proficiency, the complex listening comprehension processes, and other factors such as task types, learning styles, language ability, etc. Regarding the significantly negative relationships between metacognitive strategies and the advanced listeners' scores, it is not able to conclude that metacognitive strategies are not at all helpful because the data is based on the selection of the strategies that test takers find most important. As Chesterfield and Chesterfield (1985) reported, metacognitive strategies are last in use compared to others. The choice of metacognitive strategies in this study may also be affected for the same reason.

The data from the interviews which revealed different usage of some strategies by the two groups strengthens the claim made by various researchers such as Abraham and Vann (1987), Chamot, Küpper and Impink-Hernandez (1988), Hoang (1999), Aek Phakiti (2003), and Liu (2004). They reported that the non-advanced listeners are not able to use the strategies as appropriately as the advanced ones.

The evidence concerning the top-down and the bottom-up processes counters some arguments made by researchers such as Kelly (1991) about the students who make use of the two approaches, whether the high-proficient or the non-proficient rely on the two approaches. The results reveal the high-ability group's ability to use both processes effectively, whereas the low-ability group mostly depends on the top-down approaches due to the lack of enough linguistic knowledge.

Lastly, the chapter discussed the implications of the use of the computer as a tool to administer tests. It emphasized that the process must be handled with caution since there are factors such as the interface design that can threaten the validity of the test (Bachman, 2000). Other elements that are incorporated into the test program such as pictures and international accents, and the advantages that the computer-based test contributes were also discussed.

In summary, this chapter reported the results of the study and provided discussion of the results in relation to past theories. In Chapter 5, summary, conclusions and recommendations of the research study are given.