INVESTIGATING THE RELATIONSHIPS BETWEEN CHINESE UNIVERSITY EFL LEARNERS' METACOGNITIVE LISTENING STRATEGIES AND THEIR COMPREHENSION AND INCIDENTAL VOCABULARY ACQUISITION FROM LISTENING TASKS

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ABSTRACT

This article reports a study that aims to investigate (1) the effects of differential listening conditions on Chinese university EFL learners' comprehension and incidental vocabulary acquisition, and (2) the relationships between the learners' metacognitive listening awareness, listening comprehension, and incidental vocabulary acquisition.

The participants were 172 Chinese university students who were put in four different listening conditions: a) listening one time, b) listening three times, c) schema-raising training before listening three times, and d) inferencing training before listening three times.

The participants' listening comprehension was measured by their performance in the listening tasks. The listening text of each task included five words for incidental vocabulary acquisition study. To test the participants' vocabulary knowledge, three vocabulary tests, in the order of a production test (i.e., cued recall test), a form test, and a reception test, were administered separately to the participants right after the listening tasks as immediate post-tests, and the same tests were administered again one week after the immediate tests as delayed post-tests. The participants' metacognitive listening awareness was measured by means of Metacognitive Awareness Listening Questionnaire (MALQ) in five aspects as: planning-evaluation, directed attention, person knowledge, mental translation, and problem solving.

ANOVAs were employed to examine the effects of the different listening conditions on the participants' listening comprehension and incidental vocabulary acquisition. The results showed that all the three-time listening groups significantly outscored the one-time listening group in both comprehension and vocabulary acquisition, but no significant group differences were found among the three-time listening groups. The participants acquired some vocabulary knowledge especially in terms of receptive and form knowledge, and there was clear evidence that the participants were able to better recognize the target words overtime.

Pearson Correlations were run to investigate the relationships between the

participants' metacognitive listening awareness, listening comprehension, and incidental vocabulary acquisition. The results showed that the correlations were generally on the low side, and the relationship between reported use of metacognitive strategies, listening comprehension, and incidental vocabulary acquisition was most clearly evident in the three-time listening group which received no training.

One of the implications of this study is that EFL learners, generally need time to process input for listening comprehension and incidental vocabulary acquisition. Regarding metacognitive strategy training, the implication is that it takes time for the learners to be able to implement the strategies instructed to them. Besides, pedagogical suggestion is made on the design features of listening texts for the purposes of both comprehension and vocabulary acquisition.

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Chapter One

Introduction

My thesis reports a study that investigates the relationships between Chinese university EFL learners' listening comprehension, metacognitive awareness, and incidental vocabulary acquisition under different listening conditions. This chapter explains why I chose this particular research topic for my thesis.

1.1 English Teaching as a Foreign Language in Chinese Universities

In 1994, I began to teach English as a foreign language (EFL) in a Chinese university, where, as in all the other Chinese universities, the Course of College English is compulsory. According to the Chinese Higher Education Regulations, once entering university, all students complete four successive terms of College English Course, and the teaching is 64 hours per term. As described in the Chinese Education Ministry's *College English Curriculum Requirements* (2007), at the end of the fourth semester, students are supposed to achieve the language competence to pass the College English Test (CET) band-4 as a baseline, and the more competent students can pass CET band-6. All the students in Chinese universities strive to learn College English Course in order to pass these examinations, because without a CET band-4 certificate they are not eligible for a bachelor's degree from the universities.

EFL teachers give instruction on all the language skills (listening, speaking, reading, writing, and translating) in the College English classes. Listening and speaking are two new skills for most Chinese students at the university level, because the English instruction in middle schools is basically reading, writing, and translating. Nevertheless, when students get to university, the 64 teaching hours per term are equally distributed among the teaching of the five language skills. Listening as a brand-new language skill constitutes the main difficulty that confronts Chinese students.

1.2 Place of Listening Instruction in University Level Courses in China

That most Chinese EFL learners' listening ability is weak in comparison to other skills such as reading and writing is, to some extent, related to the fact that in China the instructional emphasis is unbalanced so the students are not able to develop all the language skills equally. In the past, Chinese students were traditionally taught to read and write in English so that they could understand English materials in their own fields in their future careers. From the perspective of the students, listening was viewed as a passive process of merely listening to a text and then finishing the after-listening questions. From the perspective of the educators and teachers, the approach adopted focused more on the product of listening than the listening process. It was assumed that listening skills would develop automatically if other skills were improved to a desirable level and therefore classroom instruction on listening was unnecessary. As a result, listening activities remained virtually a test of comprehension, and listening comprehension became a skill in which Chinese students often felt they had achieved the least. "Such attributions indicate a sense of passivity and helplessness in language learners which could easily result in their becoming demotivated, resigned to being less effective listeners" (Graham, 2006). In such circumstances, offering language learners more listening activities would most likely only add to their sense of failure.

Only in the last five years has listening begun to be acknowledged in its own right in EFL education in mainland China. The Course of College English in Chinese universities underwent a nation-wide reform in 2007 with the publication of the Chinese Education Ministry's *College English Curriculum Requirements*. It pointed out that "the objective of College English is to develop students' ability to use English in an all-round way, especially in listening and speaking, so that in their future studies and careers as well as social interactions they will be able to communicate effectively" (p. 18). The requirements for undergraduate College English teaching are set at three levels — the basic level, the intermediate level and the advanced level. The requirements for listening of the three levels are shown in Table 1.

Table 1. The Requirements for Listening at the Three Levels as in *College English Curriculum Requirements*

Level	Description of the requirements in listening abilities
Basic	Students should be able to follow classroom instructions, everyday conversations, and lectures on general topics conducted in English. They should be able to understand English radio and TV programs spoken at a speed of about 130-150 wpm, grasping the main ideas and key points. They are expected to be able to employ basic strategies to facilitate comprehension.
Intermediate	Students should be able to follow talks and lectures in English, to understand longer English radio and TV programs spoken at a speed of about 150-180 wpm, grasping the main ideas, key points and relevant details. They should be able to understand, by and large, courses in their areas of specialty taught in English.
Advanced	Students should, by and large, be able to understand radio and TV programs produced in English-speaking countries and grasp the gist and key points. They should be able to follow talks by people from English-speaking countries given at normal speed, and to understand courses in their areas of specialty lectured in English.

Source: College English Curriculum Requirements (p. 19-22)

Though the role of listening is now recognized as important in Chinese university EFL teaching, listening instruction, with only an average teaching time of 12-14 hours in each term, is by no means adequate to help students develop the competence needed to comprehend language in spoken form. There is, to date, still a gap between the requirements for listening and the teaching of listening in China. Among the major problems concerning the teaching of listening in Chinese universities, the two most significant are:

(a) To most EFL teachers in China, teaching listening is still confined to first playing a recording of a listening text, then checking the students' answers, and finally informing them of the correct answers. Such instructional methods as repetition, schema-raising, and strategy training are seldom employed and have probably never been heard of by some EFL teachers. In fact, instruction in the use of listening strategies only began in the last decade and strategies for developing metacognitive awareness have been

largely neglected. The effects of metacognitive listening strategy training on Chinese EFL learners' listening comprehension have been little studied and little is known about the relationship between the learners' metacognitive listening awareness and their listening comprehension.

(b) As a major component of listening input, vocabulary is of primary importance to Chinese EFL learners' listening comprehension. Also incidental vocabulary acquisition through listening is a promising source of new vocabulary for Chinese university EFL learners. Nevertheless, incidental acquisition of vocabulary through listening by Chinese learners has never been researched in China. Nor has the relationship between Chinese learners' EFL vocabulary acquisition and their metacognitive awareness been studied.

1.3 Theoretical Issues Addressed in the Thesis

The thesis explores three key theoretical constructs: "listening comprehension", "incidental vocabulary acquisition" and "metacognitive listening awareness". It is concerned with the relationships among these three constructs.

1.3.1 Listening Comprehension

Since the 1980s, increasing attention has been placed on listening. L2 researchers view it as a complex cognitive process and a key aspect of oral proficiency. Peterson (2001) explains that listening comprehension is a multilevel and interactive process where listeners work on various levels of cognitive processing to understand the incoming speech. Listening is generally viewed as involving an interaction between top-down and bottom-up processing.

Top-down processing, according to Rost (2011), stands for the information processing guided by higher level mental processes as we construct representations by drawing on our experiences and expectations. Listeners tap into background

knowledge of the topic, the situation or context, the type of text, and the language. This background knowledge activates a set of expectations that help the listeners to interpret what is heard and anticipate what will come next (p. 346) . In other words, listeners use top-down processes when they build a conceptual framework for comprehension by using their familiarity with the listening context and their prior knowledge (topic, genre, culture, and other schema knowledge). Listeners use content words and contextual clues to form hypotheses in an exploratory manner.

Bottom-up processing, as described by Rost (2011), refers to the information processing that is guided by input in real time, and proceeds in sequential stages. Listeners use text-based strategies for comprehension, focusing on combinations of sounds, words, and grammar (p. 314). In other words, listeners use bottom-up processes when they use their linguistic knowledge of sounds and word forms to process more complex lexical and grammatical items in order to interpret the input. Listeners use bottom-up processes when they construct meaning by accretion, gradually combining increasingly larger units of meaning from the phoneme-level up to discourse-level features.

This view of listening as involving both top-down processing and bottom-up processing is in accordance with second-language theory, which views listening as an interactive and complex process in which listeners focus attention on selective aspects of oral input, construct meaning, and relate what they hear to existing knowledge. Listening comprehension, then, is not just top-down or just bottom-up processing, but is an interactive and interpretive process in which listeners use both linguistic knowledge and contextual knowledge to understand messages.

1.3.2 Incidental Vocabulary Acquisition

It is generally accepted that a considerable amount of vocabulary is acquired incidentally, i.e. as a "by-product" of reading (e.g., Nation & Coady, 1988; Nation, 2001). Incidental learning is defined as "learning without an intent to learn, or as the learning of one thing, for example vocabulary, when the student's primary objective is

to do something else" (Laufer & Hulstijn, 2001, p. 10). Incidental vocabulary acquisition can be defined as "the learning of new words as a by-product of a meaning-focused communicative activity, such as reading, listening, and interaction, which occurs through multiple exposure to a word in different contexts" (Huckin & Coady, 1999, p. 185). For incidental vocabulary acquisition to occur, attention to lexical forms and inferencing lexical meanings from context are necessary and crucial factors.

The concept of attention can be used to describe "the processes involved in selecting the information to be processed and stored in memory" (Robinson, 1993, p. 287). In incidental vocabulary acquisition, the learner's attention is primarily focused on communicative meaning, not on form. However, many theorists argue that vocabulary learning requires attention to both meaning and form (e.g., Ellis, 1995; Robinson, 1995). Schmidt (1993) pointed out that to some degree at least conscious attention to form is necessary for incidental learning. Intake is defined as the subset of input that is attended to and noticed. In other words, attention to form in the input is necessary for input to become intake and thus available for further mental processing. Attention is clearly related to purpose, which in turn is governed in large part by task demands. L2 researchers (e.g., Schmidt, 1990) claim that incidental acquisition is possible when task demands force L2 learners' attention onto specific features in the input. In other words, well-designed tasks can facilitate noticing of aspects of L2 syntax, vocabulary, and phonology.

It is generally agreed that most of the vocabulary is acquired incidentally (e.g., Huckin & Coady, 1999; Laufer & Hulstijn, 2001). Failure to work out the meanings of essential words may impede the overall understanding of reading or oral texts. Therefore, it is crucial for L2 learners to develop "on-line" skills or strategies to handle unfamiliar vocabulary, i.e., the strategy of inferencing lexical meaning from context.

Lexical inferencing "involves making informed guesses as to the meaning of a word in light of all available linguistic cues in combinations with the learner's general knowledge of the world, her awareness of context and her relevant linguistic

knowledge" (Haastrup, 1991, p. 40). In other words, inferening the lexical meaning of unknown words means compensating for vocabulary deficiency by using such clues as cognate words, contextual clues and extralinguistic clues (including background noise, tone of voice, and so on).

To make inferences of lexical meaning through context is important for successful vocabulary learning. Schmitt (1997) developed a taxonomy of 50 vocabulary learning strategies consisting of those used to infer meanings and those used to consolidate words. If these lexical inferencing strategies are used successfully, they can "serve for purposes of immediate comprehension in a listening or reading context, and under favourable conditions may lead to retention of the word form, as well as semantic and other lexical information" (Paribakht & Wesche, 1999, p. 199).

Research (e.g., Paribakht & Wesche, 1997) identified the factors involved in lexical inferencing. These include the written texts in which words are embedded, the features of given words, learners' knowledge and the effort they put in, and the mental activity the learner is focused on.

1.3.3 Metacognitive Listening Awareness

The concept of metacognition was introduced in cognitive psychology by Flavell (1979), who defined metacognition as "knowledge that takes as its object or regulates any aspect of any cognitive behavior" (P. 8). He then described metacognition as awareness of how one learns, awareness of when one does and does not understand, knowledge of how to use available information to achieve a goal, ability to judge the cognitive demands of a particular task, knowledge of what strategies to use for what purposes, and assessment of one's progress both during and after performance. Metacognitive awareness involves both experience and knowledge (Flavell, 1979). Metacognitive experience is a feeling we have about our cognition, while metacognitive knowledge consists of our beliefs and knowledge about learning.

Since Wenden (1987) first drew public attention to the enormous potential that

metacognition has for understanding L2 learning, L2 researchers (e.g., Goh, 2008; Vandergrift, 2004) have proposed specific metacognitive approaches to help learners raise their metacognitive awareness about listening and integrate the use of strategies while listening. Research on the effects of metacognitive instruction has also provided some evidence that performance, confidence, and motivation can be enhanced through classroom instruction (e.g., Goh, 2002b; Vandergrift & Tafaghodtari, 2010).

Based on Flavell's (1979) theoretical model of metacognition, Vandergrift et al. (2006) classified metacognitive listening awareness into five categories: problem-solving, planning-evaluation, mental translation, person knowledge and directed attention. To help learners integrate the use of metacognitive strategies while listening, Vandergrift (2004) proposed a cycle which includes such metacognitive processes as prompting learners to use strategies to regulate their comprehension, verifying the strategies being used, and evaluating the strategies used in the listening process. Such metacognitive processes not only raise the learners' metacognitive awareness about their strategy use but also offer much needed scaffolding while learners are working with listening texts. "Learners who successfully use these strategies to improve their comprehension will also experience an increase in motivation" (Goh 2008, p. 192).

1.3.4 Relationships among the Three Constructs

Learners with high listening proficiency are likely to make extensive use of context and employ top-down processing in listening. Proficient listeners keep monitoring their listening process. When meeting an unknown word while listening, they generally employ inferencing and are flexible in the combination of top-down and bottom-up processing. This is a reflection of higher metacognitive awareness and better metacognitive strategy control and use. On the contrary, listeners with low proficiency tend to make use of more bottom-up processing in listening and thus

attend primarily to the sounds, syllables and words to build up information from the input. In other words, less proficient learners are likely to employ, especially when encountering listening difficulty, superficial and ineffective strategies such as translation. Research (e.g., Goh, 2002b; Smidt & Hegelheimer, 2004; Vandergrift, 1997b & 2003a) investigating the relationship between listening comprehension and metacognitive listening awareness has shown some positive results reporting a close and positive relationship between the two constructs.

Incidental vocabulary acquisition occurs through listening as well as through reading. Many L2 learners, like L1 learners, rely on aural input as the primary source of information about the target language. Through listening they learn to identify the forms and sometimes meanings of new lexical items, which they then remember and in due course come to use themselves. Listening plays an important role in the language learning process as it provides learners with input which they can use to acquire new language and also consolidate partially the acquired knowledge. In return, with increased lexical knowledge obtained from listening texts, learners' listening comprehension will be facilitated, though the effect may not be instant. Therefore, listening comprehension and incidental vocabulary acquisition mutually facilitate each other.

When proficient learners meet with an unknown word in listening, they will need to employ inferencing strategies to guess the meaning of the word by using such clues as cognate words, contextual clues, etc. They then learn to identify the forms of words through building auditory images. In addition, they may be able to identify the meaning of a new lexical item through inferencing. These learners may then remember the new word, and in due course, come to use it. Therefore, metacognitive listening awareness potentially can facilitate incidental vocabulary acquisition from listening. This, however, is more likely to occur if learners possess the necessary proficiency to engage effectively in bottom-up processing.

Though the relationships among the three constructs are theoretically grounded, they need further investigation. To the best of my knowledge, no previous study has investigated the interrelationships among the three constructs.

1.4 Aims of the Thesis

Though the Chinese Education Ministry's *College English Curriculum Requirements* places a strong emphasis on instruction in listening in university level courses, there is, to date, still a gap between the requirements for listening and the actual teaching of listening in China. To be more specific, instruction in the use of listening strategies has only begun in the last decade and that instruction was mainly confined to the teaching of some very concrete and easy-to-learn cognitive strategies such as listening for the main idea, paying attention to such details as numbers and names, etc. Strategies for developing metacognitive awareness, despite their crucial role in facilitating listening, have been largely neglected. The effects of metacognitive listening strategy training on Chinese EFL learners' listening comprehension have been scarcely studied and little is known about the relationship between the Chinese university EFL learners' metacognitive listening awareness and their listening comprehension. This study aims to fill these gaps in the research.

As a major component of listening input, vocabulary is of primary importance to Chinese EFL learners' listening comprehension, and incidental vocabulary acquisition through listening is a promising source of new vocabulary. However, incidental vocabulary acquisition through listening has received little attention. In fact, to the best of my knowledge there are no previous studies of incidental vocabulary acquisition through listening by Chinese learners. Nor has the relationship between Chinese university EFL learners' vocabulary acquisition and their metacognitive awareness been studied. This is another aim of the study.

In summary, the main aim of the thesis is to try to fill these research gaps by investigating the relationships between Chinese university EFL learners' listening comprehension, metacognitive awareness and incidental vocabulary acquisition from listening tasks.

1.5 Summary of the Contents of Each Chapter

Chapter 1, an introduction, includes the background of the study, the statement of

the problems, the aims of the study, and a summary of the contents of the thesis.

Chapter 2 provides a chronological survey of studies in EFL listening comprehension and examines such factors as repetition, schema, and metacognitive listening awareness and strategies. This chapter also provides a survey of studies that have investigated incidental vocabulary acquisition through listening.

Chapter 3 reports the pilot study. It served as a means of testing the design, procedures and materials to be used in the main study.

Chapter 4 describes the method employed in the main study. The research context, the participants and the instruments used in the instruction are also described. This chapter concludes with a description of the data collection and data analysis procedures.

Chapter 5 reports the results for research questions 1 and 2. It first presents the results of the participants' listening comprehension tests and vocabulary post-tests, then presents a brief summary of the main findings, and finally concludes with a discussion of the main findings.

Similar to the structure of Chapter 5, Chapter 6 first presents the results relating to the participants' metacognitive listening awareness questionnaire responses, listening comprehension tests and vocabulary post-tests, then presents a brief summary of the findings, and finally concludes with a discussion of research questions 3 and 4.

Chapter 7 provides a summary of the main findings and then considers the pedagogical and theoretical implications. It concludes with a consideration of the limitations of the study and suggestions for future research.

Chapter Two

Literature Review

2.1 Introduction

This chapter reviews studies related to the present research. It first reports related literature on listening comprehension, then literature on metacognition and metacognitive listening, and finally literature on incidental vocabulary acquisition.

2.2 Listening Comprehension

This part of the literature review first considers the definition and processes of listening comprehension, then introduces two factors that are important for this study, i.e., repetition and schema, and finally gives an account of language listening strategies.

2.2.1 Listening Comprehension and Listening Processes

Listening comprehension is an important language skill. Language learners want to understand target language (L2) speakers and they want to be able to access the rich variety of aural and visual texts available today via all kinds of media. Furthermore, listening comprehension is perhaps the most essential skill for second/foreign language learning, and the development of L2 listening skills has a beneficial impact on the development of other skills (e.g. Vandergrift, 2008). In order to research listening comprehension, it is necessary to first understand the definition of listening and listening processes.

2.2.1.1 Definition of listening Comprehension

Listening, being an invisible mental process, is difficult to describe, for listeners

must discriminate between sounds, understand vocabulary and grammatical structures, and interpret stress and intention within the immediate utterance. Listening was commonly viewed as a receptive language skill in which listeners passively assimilated the messages they got from oral input, but in fact it involves a more complex process. In the last two decades, listening has been found to play an important role in language acquisition and has thus been described as an "interactive, interpretive process in which listeners engage in a dynamic construction of meaning" (Murphy, 1991, p. 56). Listening involves linguistic knowledge, background knowledge, and meaning construction.

Rost (2011, p. 2) defines listening, in its broadest sense, as a process of receiving what the speaker actually says (receptive orientation); constructing and representing meaning (constructive orientation); negotiating meaning with the speaker and responding (collaborative orientation); and, creating meaning through involvement, imagination and empathy (transformative orientation).

2.2.1.2 Listening Processes

Oral texts exist in real time and need to be processed quickly; when an oral text is over, only a mental representation remains. As a result of this, listening is the least explicit of the four language skills and the most difficult skill to learn.

Listening involves physiological and cognitive processes at different levels (Field, 2002; Lynch, 2002; Rost, 2011). Several theories have been advanced to account for listening processes, with two being particularly influential on research.

Anderson (1983, 1995) proposed a cognitive framework presenting listening as a three-stage process of Perceptual Processing, Parsing, and Utilization. In the perceptual processing phase, attention is focused entirely on the text, and phonemes are segmented from the speech stream (1995, p. 137). Therefore, such listening strategies as "selective attention" (attending to specific language aspects while listening) and "directed attention" (maintaining attention while listening) are crucial in this stage (Vandergrift, 2003a). In the parsing stage, meaning representations are

formed from words and phrases by matching them with linguistic information stored in the listener's long-term memory to construct meaning mental representations. "Grouping" (classifying information in a listening tasks) and "inferencing" (using text information or context to guess the meanings of unfamiliar language items) strategies are dominant in the parsing stage. And finally in the utilization phase, information collected from the previous two stages is linked with the schema — the previous knowledge of the listener. As a factor related to the present study, schema is further reviewed later in this chapter. Listeners use their prior knowledge to aid comprehension and recall. At this stage, "elaboration" (using prior knowledge or context to fill in missing information) strategy is a crucial strategy (Vandergrift, 2003a).

This model has the advantage in that it provides recognizable stages in the process of listening, and thus facilitates research into each of the stages (as in O'Malley, Chamot, & Kupper, 1989). Nevertheless, as argued by Graham & Macaro (2008, p. 748), "it is perfectly possible for listeners to start by utilizing fragments of parsed text and then draw incorrect inferences."

In light of the parallel processing capacity offered by working memory (McClelland & Rumelhart, 1986), a more convincing, recursive model was suggested in which listeners operate within more than one of the listening stages — an interactive top-down and bottom-up processing model of listening. Listeners use "bottom-up" processes when they use linguistic knowledge of sounds and word forms and build up to more complex lexical items and grammatical relationships to interpret the input. Listeners use bottom-up processes when they construct meaning by accretion, gradually combining increasingly larger units of meaning from the phoneme-level up to discourse-level features. Listeners also use "top-down" processes when they employ familiarity with the listening context and prior knowledge (topic, genre, culture, and other schema knowledge in long-term memory) to build a conceptual framework for comprehension. Listeners use content words and contextual clues to form hypotheses in an exploratory manner.

Listening comprehension is not just top-down or just bottom-up processing, but

an interactive and interpretive process in which listeners use both linguistic knowledge and prior knowledge to understand messages. In other words, the listener comes to a listening task with two sets of resources: his/her own linguistic and schematic knowledge (Rumelhart, 1980) and the information contained in the actual listening text. Within an interactive model, a listener might begin by activating his/her schemata as a result of knowing the topic of the text, or of understanding a few words of the text, and thus perceive, parse and match the incoming speech stream with the elaborations that he/she previously activated (Graham & Macaro, 2008).

Also, while these processes interact in some form of parallel distributed processing, the degree to which listeners may use one process more than the other will depend on their knowledge of the language, familiarity with the topic or the purpose for listening. Research (e.g., McClelland & Rumelhart, 1986; O'Malley, Chamot, & Kupper, 1989) on these cognitive processes suggests that L2 listeners need to learn how to use both processes to their advantage, depending on their purpose for listening. For example, listening for gist involves primarily top-down processing, whereas listening for specific information, as in a weather broadcast, involves primarily bottom-up processing to comprehend all the details. The above research has also shown that successful and less successful listeners process input quite differently. Peterson (2001) states that less successful listeners tend to rely primarily on either top-down or bottom-up processing and spend a great amount of conscious effort on perceptual activity (e.g., identifying boundaries, recognizing meaningful sound units) so little is left over for high-level operations (e.g., relating new information to information stored in long-term memory). In contrast, higher-proficiency listeners use both top-down and bottom-up processes to understand oral input, which is also known as the use of metacognitive and cognitive listening strategies, and is to be further discussed in the last section of this chapter.

2.2.2 Factors Affecting Listening Comprehension

Since listening is a complex active process in which learners decode and

construct the meaning of a text by drawing on their previous knowledge about the world as well as their linguistic knowledge, there seem to be many factors that affect listening comprehension. Two factors related to the present study, i.e., repetition and schema, are reviewed in this section.

2.2.2.1 Repetition

One purpose of this study is to investigate the effects of different listening times (one-time vs. three-time listening) on learners' listening comprehension and incidental vocabulary acquisition.

Repetition is an important variable that can affect learners' ability to process the information in a listening task, for it provides more processing time and clarifies the relationship between the syntactic forms. In general, research conducted to date on the effect of repeated exposure has shown that repetition is also an important factor in facilitating L2 listening comprehension.

Lund (1991) examined the effects of repetition and different course levels (proficiency levels) on the listening and reading comprehension in German as a foreign language of 60 university students in their first, second, and third semesters. He found listening comprehension performance, as measured by propositions and lexical items recalled, improved after a second opportunity to listen to the passage. Results also indicated that this improvement was greater for third-semester learners than it was for learners in the first and second semesters. To be more specific, the improvement of the students' listening recall task in the first and second semesters was about half that of the third-semester students, whereas there was no difference in the improvement among the students at different proficiency levels in the reading recall task. Therefore, he argued that third-semester students benefited from the repeated exposure in the listening task. The improvement in the listening performance was accounted for by what Lund called "recursive use of the texts", which provides the learners with "a test structure of meaning to be fit to the text on the next repetition" (p. 201).

To examine the effect of input modification (including repetition) on listening comprehension of Japanese university students, Cervantes and Gainer (1992) conducted two experiments involving about 80 English majors at a university in Japan that compared the effects of listening to simplified input once versus listening to a difficult text with or without repetition. Results of the study showed that both simplification and repetition facilitated more comprehension than unmodified texts. The first experiment showed, unsurprisingly, that the simplified version was easier to understand than the complex one. In the second experiment, no significant difference was found between the group hearing the syntactically simplified version and the group hearing the complex version with repetition. Thus, Cervantes and Gainer argued that although syntactically simplified listening texts may aid comprehension, it may not be necessary if other modification, such as repetition, is available.

Berne (1995) investigated the effect of multiple exposures to a video clip on comprehension performance of 62 native English speakers learning Spanish in an American university. Before viewing the video twice, the participants were randomly put into three groups with different pre-listening activities: a question preview activity, a vocabulary preview activity, and a filler activity. Results revealed that scores for all three groups improved significantly as a result of viewing the passage a second time. The researcher thus concluded that "the most effective means of improving listening comprehension performance is through additional exposure to the passage" (p. 326).

Chang (1999) looked at learners' levels of comprehension as the number of repetitions increased, and her results showed that the number of repetitions required for adequate comprehension depended on the listeners' proficiency level and the difficulty of the listening text. For high-proficiency level listeners, a single repetition was sufficient if the listening text was easy, but for low-proficiency level listeners, the improvement in their listening comprehension was less noticeable even after several repetitions, particularly if the text was difficult or the listeners were unfamiliar with the content.

Chang and Read (2006) examined the effects of four different types of listening support (preview of the questions, repetition of the input, provision of topic

knowledge, and vocabulary instruction) on the listening performance of 160 Chinese learners of English at a college in Taiwan. They also investigated their interactional effects between types of listening support and listening performance with proficiency levels based on the results of the listening section of the Test of English for International Communication (TOEIC). Results showed that the effects of the four listening support types differed according to proficiency level. The high listening proficiency group outperformed the low listening proficiency group in the condition of repetition of the input, and for the high listening proficiency group, repetition of the input was more effective than any other instructional treatment. Based on these results, Chang and Read suggested that the high listening proficiency group would benefit more than the low listening proficiency group from repetition of the input.

Elkhafaifi (2005) studied the impact of pre-listening activities (vocabulary preview or questions preview) and repeated listening exposure on listening comprehension scores of 111 intermediate AFL (Arabic as a foreign language) learners. The students watched a videotaped lecture twice and were tested on their comprehension each time when they finished watching the video. Results showed that although vocabulary knowledge played a significant role in listening performance and that providing comprehension questions prior to the listening also helped the students achieve significantly better listening scores, "multiple exposures to the listening passage served as the best predictor of listening proficiency" (p. 510). This led the author to conclude that "the single most important factor in improving listening comprehension is repeated exposure to the listening passage" (p. 510).

O'Bryan and Hegelheimer (2009) used a mixed-method approach to investigate the use and awareness of four intermediate ESL students' listening strategies over the course of one semester at a large midwestern research university in the United States. They also investigated the impact of repetition on listening strategies and on the development of students' metacognitive awareness. The four students, two undergraduates and two graduates, received an informal warm-up with casual conversation before listening to two passages, and a brief reminder of what they were supposed to do while listening. This was followed by a verbal report stage when they

listened to the passages for the second time and voiced their thoughts. The researchers found a difference in the strategies used and level of comprehension attained by the participants in the second listening, and thus claimed that the second listening allowed the learner "to build up to more complex bottom-up processing strategies, namely using lexical and grammatical relationships to comprehend the input and utilize the information gained from the text to make meaning." They argued that "having the opportunity to repeat the text is what facilitated the creation of a framework that resulted in a more coherent summary the second time" (p. 26).

Sakai (2009) examined the effects of repeated exposure in L2 listening tests of 36 university learners of English in Japan. The participants were divided into two listening proficiency groups and were required to write what they understood after listening to a set of passages twice. All the recall protocols were scored by the researcher, who reported high reliability. Results showed that for both groups of learners, the second effort was better than the first effort, and the study did not find any interactional effect between repetition and proficiency levels. The researcher thus concluded that the effects of repetition, regardless of proficiency level, facilitated listening comprehension of the passage to a similar degree. In an attempt to answer a more interesting research question about the effect of repetition on idiosyncratic recall protocols (i.e., additive information that does not appear in the original text) and misinterpretations (i.e., incorrect recall protocols), results indicated that repetition helped both groups of learners understand the text further and led to more precise comprehension of the passage.

Regarding the interactional effect between repetition and proficiency level, it can be clearly seen from the research reviewed above that the results of these studies are mixed. Whereas some (e.g., Chang & Read, 2006; Lund, 1991) reported an interactional effect between repetition and proficiency, other studies (e.g., Cervantes & Gainer, 1992; Sakai, 2009) did not. In an attempt to interpret the mixed results that these studies have produced, Sakai (2009) examined the results of Chang and Read's study and noted that repetition may in fact have improved the performance of both proficiency groups (high and low proficiency groups), but the changes for the low

proficiency groups were not sufficient to achieve statistical significance. As for Lund's study, Sakai' noted that Lund found a statistically significant interactional effect only in one of the two analyses of the recall protocol. In addition, Sakai believed "the mixed results of the previous studies may be due to different analysis methods" (p. 369). Also, the mixed results of these studies can be accounted for by the fact that they used different tasks to assess listening comprehension, (e.g., a free written task [Lund], a multiple-choice test [Chang & Read], a partial dictation task [Cervantes & Gainer], and a free written recall task [Sakai]) which only required test takers to listen to part of the passages.

One research purpose of the present study is to investigate the effects of different listening conditions; of, for example, single exposure to a listening passage (listening one time) versus repeated exposure to a listening passage (listening three times), on learners' listening comprehension and incidental vocabulary acquisition. A question of considerable interest is the extent to which repetition assists both vocabulary acquisition and listening comprehension. While there is clear evidence to suggest that repetition aids listening comprehension, little is currently known about whether and how repetition aids vocabulary learning.

2.2.2.2 Schema

Listening is a complex, active process of interpretation in which listeners match what they hear with what they already know (Vandergrift, 2002). Background knowledge plays a crucial role in understanding a language. It is often the absence or incompleteness of background information that results in non-comprehension or incorrect comprehension that L2 listeners experience. That is, "where the language element in fact presents no obstacle … it is the lack of shared contextual information or schema that makes comprehension difficult or impossible" (Anderson & Lynch, 1988, p. 154).

First used in cognitive psychology, the word schema has been adopted in a number of fields. In the context of listening, schema refers to "a mental structure

consisting of relevant individual knowledge, memory, and experience, which allows us to incorporate what we hear into what we know" (Anderson & Lynch, 1988, p. 139). People have thousands of schemas in their memory and these schemas are interrelated with one another. Every time we are engaged in reading, listening to, or observing something new, by relating one fact to another through logical links, we create new schemas and our existing schemas are updated.

Research into the effects of schematic knowledge on second language comprehension has predominantly focused on reading, rather than listening. Carrell and Eisterhold (1983) explain that background knowledge in the readers' mind can facilitate L2 reading comprehension. Similarly, listening is an interactive process and successful listening comprehension requires an interaction between the listening context and the listener's existing background knowledge which provides them with a frame of reference where they can combine the new incoming input with the knowledge they already have.

Compared with L2 readers, L2 listeners face additional difficulties in making sense of what they hear, especially at lower levels of proficiency, because in most cases speech is temporary, less clearly produced and more implicit than written language. For this reason, the role of schematic knowledge has been recognized by many researchers as an important factor that affects listening comprehension. Brown and Yule (1983, p. 248) describe schema as "organized background knowledge which leads us to expect or predict aspects in our interpretation of discourse". They explain that listeners' background knowledge and prior experiences predispose them to construct expectations about seven areas: speaker, listener, place, time, genre, topic, and co-text in order to interpret the discourse. Long (1989) further explains that learners construct meaning during the comprehension process through segmenting and chunking the aural input into meaningful units and then actively matching the results with their existing linguistic and world knowledge, a process that enables listeners to make inferences, which is a cognitive strategy used by listeners to facilitate comprehension. Rost defines the base or schematic meaning of a text as "the cultural and experiential frame of reference that makes a text interpretable by a

listener" (1990, p. 70).

The role of schematic knowledge in facilitating successful L2 listening has been addressed by many researchers. Long (1990) explored the effect of background knowledge on L2 listening comprehension. Students of Spanish listened to two passages, one familiar and the other unfamiliar. Comprehension was assessed by a recall protocol in English and a recognition measure. Although no significant differences were found between the familiar and unfamiliar passages, Long attributes this result to the content of the checklist, which was less difficult compared to the recall measure and thus could have enhanced the probability of correct answers.

To examine the effect of topic familiarity on L2 listening comprehension, Schmidt-Rinehart (1994) carried out a study of university students of Spanish who listened to two passages, one about a familiar topic and the other about a novel topic. The results, obtained through a native language immediate recall procedure, showed that the learners scored considerably higher on the familiar topic than on the new one. The study reveals that schematic knowledge in the form of topic familiarity is a powerful factor in facilitating listening comprehension.

Tyler (2001) compared the responses of L1 and L2 listeners to spoken texts with or without advanced knowledge of topic. He found that prior knowledge of the topic did not result in any significant difference between the two groups in the demands placed on working memory. Nevertheless, when given no prior information about the topic, the demands placed on working memory were significantly higher for the L2 group than for the L1 group. Tyler concluded that background knowledge assists comprehension by freeing up the listeners' mental resources, allowing more attention to be directed at processing the language input.

A study carried out by Sadighi and Zare (2006) examined the effect of background knowledge on listening comprehension of upper-intermediate-to-advanced-level Iranian EFL learners preparing for their TOEFL exam. The experimental group worked on the topics by using different resources such as the internet before coming to the class. The comprehension test results revealed a significant difference in favor of the experimental group, which lends further support

to the importance of schematic knowledge in listening comprehension.

Besides the studies investigating the role of general background knowledge by exploring the influence of learners' content schemata, some studies (e.g., Hohzawa, 1998; Chang & Read, 2006) also included pre-listening activities or advance organizers to prepare students by activating their background knowledge about unfamiliar topics. In virtually every listening situation, it is clearly advantageous to comprehension for listeners to call on knowledge from their stored prototypes. Once this knowledge is activated, additional information, stored as related schemata, becomes available to the listener. Meanwhile, whenever a knowledge structure is activated, the listener also experiences an affective response which further influences connections with the speaker's own ideas, and elicits an empathic response.

Activation of prior knowledge has been shown to have salutary effects on L2 listening success (Long, 1990; Schmidt-Rinehart, 1994). Research into prelistening activities has documented positive effects on listening performance for advance organisers (e.g., Chung, 2002; Herron, Cole, York, & Linden, 1998), question type (Flowerdew & Miller, 2005), and question preview (Elkhafaifi, 2005). These studies have demonstrated that it is helpful to provide learners with a context before they begin to listen.

Mendelsohn (1995, p. 140) identifies the importance of pre-listening activities in facilitating L2 listening comprehension as they "activate the students' existing knowledge of the topic in order for them to link what they comprehend and to use this as a basis of their hypothesis-information, prediction, and inferencing". Providing listeners with the knowledge or contextual support required for the task can orient them to what they are about to listen to, thus directing their attention to the task rather than having them listen aimlessly.

Hohzawa (1998) found that providing listeners with a chance to activate their prior knowledge affected comprehension and the kind of processing L2 listeners did. He tested the comprehension of 58 low intermediate Japanese students in an intensive English program, where the students were assigned to "background information" and "no background information" groups. Students took a proficiency test and were tested

on their familiarity with the topics of three news stories. Then they listened to the stories, wrote recalls, took a comprehension test, and re-took the familiarity measure. In addition, the students in the "background information" group heard the introduction to the news stories and discussed the content of the stories briefly. Hohzawa found that students who established background information tended to use more top-down processes and that their comprehension was greater than students in the "no background information" group.

Chang and Read (2006) investigated the effectiveness of providing four types of listening support to EFL learners: topic preparation, vocabulary instruction, question preview, and repeated input. The results of the study showed that the most effective type of support was providing prior information about the topic. In addition, the fact that mean scores of the high and low level language learners in the topic-preparation group were quite similar showed that providing background knowledge about the topic enabled the low level learners to compensate for their limited language knowledge.

Al Alili (2009) designed a study to determine whether learners' listening comprehension of an unfamiliar text would vary as a function of different advance organizers to activate the background knowledge. Three groups of Arabic-speaking EFL learners were involved in the study. The content schema (knowledge about the topic) of one experimental group was activated, the formal schema (knowledge about text structure and discourse organization) of another experimental group was activated, and the control group received neither type of advance organizer. The results of a listening comprehension test indicated that learners whose content background knowledge was activated scored slightly higher than those whose formal background knowledge was activated. Statistical analysis, however, showed no significant differences. Nevertheless, based on responses to a post-study questionnaire, the students in the experimental groups perceived the pre-listening activities to be very helpful in enhancing their understanding and prediction of the listening text. The results of this study support the importance of helping learners make connections between their existing knowledge and the incoming aural input.

Because of the demands of listening, listeners are likely to be forced to rely more on their background knowledge to interpret the text more than readers are (Lund, 1991). It may be that prior knowledge actually primes linguistic forms and their meanings and allows listeners to take a broader view of a text and make predictions (Conrad, 1989). In other words, it may be that prior knowledge allows listeners to devote less working memory to processing the input linguistically, and so to comprehend more with less effort (Tyler, 2001).

To sum up, the results of the research reviewed above were not unanimous concerning the role of schematic knowledge in facilitating L2 listening comprehension. Schmidt-Rinehart (1994) and Sadighi & Zare (2006) found significant L2 listening differences in favor of the experimental group with schematic knowledge, and they thus lent further support to the importance of schematic knowledge in listening comprehension. On the other hand, Long (1990) and Tyler (2001) could not find significant differences between the groups with and without prior information on topic, though Tyler (2001) commented that background knowledge assisted comprehension by freeing up the listeners' mental resources, allowing more attention to processing the language input. Regarding the role of pre-listening activity in facilitating L2 listening comprehension, schema-raising activity was proved to be an effective type of listening support in enhancing learners' understanding and prediction, for it both helped the higher level learners to use more top-down processes and enabled the low level learners to compensate for their limited language knowledge. However, these studies made no attempt to investigate the effects of schema raising as a type of pre-listening training on learners' incidental vocabulary acquisition from listening activities and none of the studies was administered in a Chinese context.

One of the research purposes concerning this study is to investigate the effects that a schema raising activity prior to listening has on learners' listening comprehension and incidental vocabulary acquisition. A question of considerable interest is the extent to which schema-raising assists both vocabulary acquisition and listening comprehension. While there is clear evidence to suggest that it aids listening

comprehension little is known to date about whether and how schema raising activity prior to listening aids vocabulary learning through listening.

2.2.3 Listening Strategies

The following section will review studies related to listening strategies, firstly, by presenting a definition and classification of listening strategies, secondly, by presenting studies that were conducted to investigate the use of listening strategies by FL/L2 learners, and thirdly, by reviewing a number of studies that focused on listening strategy training.

2.2.3.1 Definition and Classification of Listening Strategies

Strategies are special techniques or activities that learners apply to facilitate the acquisition, storage, retrieval, and use of information (Oxford, 1990). Applied to listening, cognitive strategies are used to infer, predict, interpret, store and recall information acquired from listening input; metacognitive strategies are use to plan, monitor and evaluate mental processes and to manage difficulties during listening; social strategies serve to enlist the help or cooperation of interlocutors to facilitate listening comprehension; and affective strategies enable the listener to manage emotions, motivation and attitudes that influence comprehension.

With respect to the classification of listening strategies, O'Malley and Chamot's (1990) taxonomy of cognitive, metacognitive and social-affective strategies and Vandergrift's (1996; 1997b) refined version of that have received the widest acceptance among listening strategy researchers. Grounded in information-processing theory (Anderson, 1980), these taxonomies have facilitated the clarification and categorization of different listening strategies.

O'Malley and Chamot (1990) differentiated listening strategies in terms of phases in the listening comprehension process. For example, students reported using attentional strategies that maintained their concentration on the task during perceptual

processing, such as being aware of when to stop attending and when to make an effort to redirect attention to the task. Students also reported segmenting portions of the oral text based on cues to meaning or on structural characteristics during the parsing phase, such as by listening to larger chunks of the text, inferring meaning from context for unfamiliar words and using both top-down and bottom-up approaches to process the text for comprehension. In the utilization phase, learners reported using different types of elaboration (i.e., to use prior knowledge from outside the text or conversational context and relating it to knowledge gained from the text or conversation in order to fill in missing information) to assist comprehension and recall and they also used elaboration to support inferencing the meaning of unfamiliar words. O'Malley and Chamot thus related different listening strategies to the different listening processes. They associated perceptual processing with selective attention and self-monitoring, parsing with grouping and inferencing from the context, and utilization with elaboration from world knowledge, personal experiences, or self-questioning (p. 133).

Table 2, which is a part of a figure from Vandergrift (1997b, p. 392-395), provides a comprehensive list of listening comprehension strategies.

Table 2. Listening Comprehension Strategies and Their Definitions

Strategy Type	Definition
Metacognitive Strategies	Executive processes used to plan, monitor, and evaluate a learning task.
1. Planning	Developing an awareness of what needs to be done to accomplish a listening task, developing an appropriate action plan and/or appropriate contingency plans to overcome difficulties that may interfere with successful completion of the task.
1a. Advance organization	Clarifying the objectives of an anticipated listening task and/or proposing strategies for handling it.
1b. Directed Attention	Deciding in advance to attend in general to the listening task and to ignore irrelevant distracters; maintaining attention while listening.
1c. Selective attention	Deciding to attend to specific aspects of language input or situational details that assist in understanding and/or task completion.
1d. Self-management	Understanding the conditions that help one successfully accomplish listening tasks and arranging for the presence of those conditions.

2. Monitoring	Checking, verifying, or correcting one's comprehension or performance in course of a listening task.
2a. Comprehension monitoring	Checking, verifying or correcting one's understanding at the local level.
2b. Double-check monitoring	Checking, verifying or correcting one's understanding across the task or during the second time through the oral text.
3. Evaluation	Checking the outcomes of one's listening comprehension against an internal measure of completeness and accuracy.
4. Problem identification	Explicitly identifying the central point needing resolution in a task or identifying an aspect of the task that hinders its successful completion.
Cognitive Strategies	Interacting with the material to be learned, manipulating the material physically or mentally or applying a specific technique to the language learning task.
1. Inferencing	Using information within the text or conversational context to guess the meanings of unfamiliar language items associated with a listening task, or to fill in missing information.
1a. Linguistic inferencing	Using known words in an utterance to guess meaning of unknown words.
1b. Voice inferencing	Using tone of voice and/or paralinguistics to guess the meaning of unknown words in an utterance.
1c. Extralinguistic inferencing	Using background sounds and relationships between speakers in an oral text, material in the response sheet, or concrete situational referents to guess the meaning of unknown words.
1d. Between-parts inferencing	Using information beyond the local sentential level to guess at meaning.
2. Elaboration	Using prior knowledge from outside the text or conversational context and relating it to knowledge gained from the text or conversation in order to fill in missing information.
2a. Personal elaboration	Referring to prior experience personally.
2b. World elaboration	Using knowledge gained from experience in the world.
2c. Academic elaboration	Using knowledge gained in academic situations.
2d. Questioning elaboration	Using a combination of questions and world knowledge to brainstorm logical possibilities.
2e. Creative elaboration	Making up a storyline or adopting a clever perspective.
3. Imagery	Using mental or actual pictures or visuals to represent information.
4. Summarization	Making a mental or written summary of language and information presented in a listening task.
5. Translation	Rendering ideas from one language in another in a relatively verbatim manner.
6. Transfer	Using knowledge of one language (e.g., cognates) to facilitate listening

	in another.
7. Repetition	Repeating a chunk of language (a word or phrase) in the course of performing a listening task.
8. Note-taking	Writing down key words and concepts while listening.
9. Deduction	Reading a conclusion about the target language because of other information the listener thinks to be true.
10. Resourcing	Using available references about the target language, including textbooks or the previous tasks.
Social / Affective Strategies	Working with another person on a task or controlling one's emotion while listening.
1. Cooperation	Working together with peers to solve a problem, pool information, check a listening task, model a language activity, or get feedback on oral or written performance.
1a. Reprising	Showing the speakers that they didn't get the message across.
1b. Feedback	Giving comments about the aural text.
2. Questioning	Asking for understanding of what has been said to you without committing yourself to a response immediately.
2a. Uptaking	Using kinesics and paralinguistics to signal the interlocutor to go on.
2b. Clarifying	Asking for explanation, verification, rephrasing, or examples about the language and/or task, or posing questions to the self.
2c. Hypothesis Testing	Asking specific questions about facts in the text to verify one's schematic representation of the text.
3. Self-Talking	Reducing anxiety by using mental techniques that make one feel competent to complete the learning task.

Source: Vandergrift (1997b, p. 392-395).

2.2.3.2 Research on Language Learners' Use of Listening Strategies

In general, researchers who have investigated listening strategies (e.g., Bacon, 1992; Flowerdew & Miller, 1992; Murphy, 1985; O'Malley, Chamot & Kupper, 1989; O'Malley, Chamot, Stewner-Manzanares, Kupper & Russo, 1985; Vandergrift, 1997a, 1997b) have found that listeners who were able to use various listening strategies flexibly were more successful in comprehending spoken texts, whereas listeners without the ability to apply adequate listening strategies concentrated on the text by word-for-word decoding. Therefore, the use of listening strategies seems to be an important indicator of whether a learner is a skillful listener or not.

Studies have examined more-proficient and less-proficient listeners, and findings

indicate that more-proficient listeners use a wider variety of strategies with greater flexibility, frequency, sophistication, and appropriateness to meet task demands (e.g. Goh, 2002; Smidt & Hegelheimer, 2004), and employ more configurations of strategies compared to less proficient listeners (e.g. Vandergrift, 1997b; 2003a).

Using think-aloud, Murphy (1985) examined the strategies used by adult ESL listeners in academic lectures. Murphy determined that more skilled listeners were open and flexible, using more strategies and a greater variety of different strategies. Less skilled listeners, on the other hand, either concentrated too much on the text or on their own world knowledge. Murphy concluded that the more skilled listeners engaged in more active interaction with the text and used a wider variety of strategies that interconnect like ‘‘links in a fence.’’ Listening strategies, according to Murphy, should be seen as ‘‘interweaving components to a single animated language process’’ (p. 40).

Vandergrift (1997b) looked at differences in strategy use by learners of different proficiency levels. Vandergrift used students of French in their first, second, and fifth years of language study (labeled as novice) and students in their eighth year of study (labeled as intermediate). He found that the novice listeners relied heavily on elaboration, inferencing, and transfer to build up meaning and that they overcame their limited knowledge of words by using what they know (cognates). This finding led him to suggest that the cognitive constraints of processing at the novice level are so great that there is little room for metacognitive processing strategies such as monitoring.

Goh (2002) reported on the broad strategies and specific techniques (referred to as ‘tactics’ by Goh) employed by a group of Chinese adult learners of English as a second language in Singapore. Both cognitive and metacognitive strategies were identified. The cognitive strategies included inferencing, elaboration, prediction, translation, contextualisation and visualization, and the metacognitive strategies consisted of self-monitoring (referred to by the author as ‘directed attention’), comprehension monitoring, selective attention and self-evaluation (referred to as ‘comprehension evaluation’). As for strategy use, differences between learners of

different listening ability, both the high-ability and the low-ability students reported a combination of the use of prior knowledge, text and context. One important difference was that the high-ability students manifested a greater number and higher quality of inferencing, comprehension monitoring and comprehension evaluation strategies.

Vandergrift (2003a) examined the types of listening strategies used by more skilled and less skilled 7th graders while they listened to authentic texts in French. In this two-year longitudinal study, the progress of an experimental and a control group of 36 learners was compared. The following two research questions were addressed: (1). What are the strategies that junior high school learners of French use while listening to authentic text in French? (2). What are the differences in the use of listening strategies reported by more skilled and less skilled listeners? In the listening comprehension test, authentic dialogues in French were first presented followed by multiple-choice questions that required the learners to verify their comprehension. By using the three-category listening strategy taxonomy (i.e., metacognitive, cognitive, and social / affective) as well as the sub-strategies within each category, as previously shown in Table 2-1, Vandergrift employed think-aloud to gather the data. The mean and the percentage use of each strategy by the more skilled and less skilled listeners were also calculated.

The quantitative analysis resulted in the following findings:

(a) with the exception of the "evaluation" strategy, all the metacognitive and cognitive strategies were used by the listeners;

(b) by mainly using such metacognitive strategies as "comprehension monitoring," the more skilled listeners had better control over the listening process;

(c) the more skilled listeners demonstrated openness and flexibility in their approach to listening by using more cognitive strategies, such as "question elaboration";

(d) the less skilled listeners, on the other hand, appeared to engage in more direct translation strategies, involving bottom-up processing, which impeded the development of a conceptual framework and the efficient construction of meaning.

By analyzing the think-aloud protocols of the listeners, this study showed how a given strategy or a particular combination of strategies was used to build meaning in the process of listening. In this study, a less skilled listener appeared to rely on translation and bottom-up processing, which resulted in superficial engagement with the text and limited construction of its meaning. In contrast, the more skilled listener seemed to employ a more dynamic approach by combining bottom-up and top-down processes to allocate more resources to organize more metacognitive strategies.

The studies reviewed above have shed light on listening strategy research in a number of ways.

(a) the more skilled listeners were found to use more metacognitive strategies (Goh 2002, Vandergrift 1997b & 2003a).
(b) the less skilled listeners made frequent use of more superficial strategies, such as translation (Murphy 1985, Vandergrift 1997b & 2003a).
(c) the proficiency level of the learners was found to have a clear impact on the strategies they used. That is, the more skilled listeners were more purposeful and flexible in approaching the listening task, whereas their less skilled peers were more passive (Murphy 1985, Vandergrift 2003a).

A recent review of research into listening strategies by Macaro, Graham, & Vanderplank (2007) identified the strategies that have consistently been advocated as playing an important part in the listening process:

> 1. making predictions about the likely content of a passage;
> 2. selectively attending to certain aspects of the passage, deciding to "listen out for" particular words or phrases or idea units;
> 3. monitoring and evaluating comprehension — that is, checking that one is in fact understanding or has made the correct interpretation;
> 4. using a variety of clues (linguistic, contextual, and background knowledge) to infer the meaning of unknown words. (p. 78-79)

2.2.3.3 Research on Listening Strategy Instruction

Several descriptive studies have examined the range and type of listening strategies used by good language learners and the differences in strategy use between more and less effective listeners. However, it is not until the last two decades that there have been studies focusing on teaching listening strategies in classroom settings.

Strategy-based instruction focuses on a range of strategies deemed appropriate to listening in 'real world' situations or tasks (Mendelsohn, 1994). It focuses on helping listeners to develop top-down processes in order to extract meaning from contextual and co-textual clues or by educated guessing based on other available information to compensate for comprehension breakdowns (Vandergrift, 2007a). Nevertheless, since listening processes can never be used in isolation due to the interdependence of bottom-up and top-down listening processes (Tsui & Fullilove, 1998), listening strategy instruction should also cater for strategies involved in bottom-up processes which can facilitate meaning-based comprehension.

Some studies of FL/L2 listening strategy instruction have reported improved performance in listening comprehension of those learners who received listening strategy instruction. Thompson and Rubin's (1996) classroom-based, longitudinal study of foreign-language learners provided strong evidence that strategy training is effective in helping language learners comprehend oral input. Thompson and Rubin taught university students, who were learning Russian as a foreign language, to apply metacognitive and cognitive listening strategies. The cognitive strategies taught in the study included a) "Drama", with a focus on the story line, b) "Interview", with a focus on question-and-answer sequences, and c) "News", with a focus on who, what, where, when, and how. Metacognitive strategies included planning, defining goals, monitoring, and evaluating. The results confirmed that systematic instruction in the use of cognitive and metacognitive strategies did improve listening comprehension. The students in the experimental group showed a significant improvement in the ability to comprehend video text compared to the group that was not given instruction on listening strategies. Anecdotal evidence in this study indicated that the use of

metacognitive strategies helped students manage how they were listening. Although the number of the participants in the research was not large, the evidence of this study indicates that instruction in strategies can help students to capitalize on the language input they receive, and to improve their performance on listening tasks.

Focusing on academic listening tasks over a six-week period, Carrier (2003) gave a class of seven volunteer high school ESL students in the U.S. 15 class sessions of explicit listening strategy instruction. The sessions, each about 20-30 minutes long, focused on strategies for developing discrete listening skills (bottom-up) and video listening skills (top-down) as well as effective note-taking. Data were collected from pretests and posttests, which were of the same format and focus. However, to avoid a training effect, the information in the questions of the posttests was different. The results showed that the explicit listening strategy instruction significantly helped the group of high school ESL students improve their discrete listening ability, their video listening and note taking abilities. Despite this positive result, methodological concerns limit the generalizability of the findings (e.g., the small sample size, only 7 participants).

To raise the awareness of the listening process through tasks designed to develop effective listening strategies, Vandergrift (2003b) undertook a study with French-as-a-second-language university students. After being told the topic of the listening task, the students completed part of a worksheet in which they listed their predictions about the information they might hear, and then they listened to the text, checked their predictions and the vocabulary they had anticipated, and added any new information. Next, the students worked in pairs to compare and discuss their understanding before listening a second time, which was followed by a class discussion. After the third time of listening, students wrote a personal reflection on their own listening processes and the strategies they might use in future to improve their listening comprehension. The written reflections given by the students revealed positive reactions to the strategies, increased motivation and understanding of their own thinking processes during the listening tasks.

Nevertheless, there are some concerns regarding the effectiveness of listening

strategy instruction. As Graham and Macaro (2008) noted, "evidence from the previous research that strategy instruction can lead to short-term improvement in listening as measured by pretests and posttests, is inconclusive" (p. 752).

Contrary to the studies reviewed above, very limited or only slight improvement in listening or mixed results were found in some studies. For example, O'Malley et al. (1985) found differences in the gain scores of three groups of ESL learners who received different amounts and types of strategy instruction, but the differences were not statistically significant.

Seo (2000) reported inconsistent results for listening strategy instruction directed at news videotexts. In her study, the researcher initially used a multiple-choice Japanese Language Proficiency Test to determine the baseline listening ability of 10 Australian tertiary level Japanese as foreign language learners. The researcher then chose three cognitive strategies (identifying key terms, elaborating, and inferencing) and taught them to a randomly assigned group of 5 learners. After a five-week period of instruction and a one-week review session, the intervention group and non-intervention group were shown some videotexts followed by a comprehension test consisting of multiple choice, true/false and key-word questions. Though noticeable improvements in performance were witnessed in the intervention group, the non-intervention group also recorded gains and even outperformed the intervention group in five out of the seven posttests. However, Seo's findings should be viewed with caution due to the following facts: (1). The study involved a very small sample size (i.e., only ten participants); (2). The results from the 7 videotext tests were compared with results of an audio-only pre-test, and thus involved an unconvincing comparison.

Another limitation is that none of the studies reviewed above included a delayed posttest, and thus could not address whether any advantages of the strategy training were maintained over time. Furthermore, though in some studies short-term improvement in listening was demonstrated in a posttest, this might have been because of the similarity between the type of tasks used in the posttest and the strategy instruction that the subjects received in the study.

In light of the various problems of earlier listening studies, this study will attempt to ensure a valid design by:

(a) employing a large sample to allow for generalizability;
(b) investigating the durability of the strategy training, using a pretest, posttest and delayed posttest, all of which are identical in both format and content;
(c) conducting both the pretest and posttest in the same session of instruction in order to avoid the possibility of any out-of-class activity influencing the result of the posttest.

2.3 Metacognition and Metacognitive Listening

Continuing the review of research on listening strategies, this section reviews studies that specifically relate to metacognitive listening. It first presents a definition and typology of metacognition and an examination of metacognitive language learning strategies, and then reviews studies that have investigated metacognitive listening awareness and strategies.

2.3.1 Metacognition

This section first presents a definition of metacognition, then outlines a typology of types of metacognition, and finally provides a definition of metacognitive strategies and a classification of different metacognitive language learning strategies.

2.3.1.1 Definition of Metacognition

Studies suggest that language learners have definite beliefs about how to learn a second language (Wenden 1986, 1991; Wenden & Rubin 1987), and that they are also capable of becoming aware of their mental processes (O'Malley & Chamot 1989). These beliefs and this awareness are collectively called "metacognitive knowledge" by Flavell (1979), who coined the term "metacognition."

The concept of “metacognition” was first raised in developmental psychology in the 1970s. The prefix “meta” literally means “beyond”. Metacognition therefore means “beyond cognition”. As early as 1978, John Flavell, a cognitive psychologist, defined metacognition as “knowledge that takes as its object or regulates any aspect of any cognitive behavior” (P. 8). He then described metacognition as awareness of how one learns, awareness of when one does and does not understand, knowledge of how to use available information to achieve a goal, ability to judge the cognitive demands of a particular task, knowledge of what strategies to use for what purposes, and assessment of one’s progress both during and after performance (Gourgey, 1998, p. 83-84). “It was the process of using cognitive processes to improve thinking skills. And it was called metacognition because its core meaning was cognition about cognition” (Flavell, 1985, p. 104).

Metacognition, as it relates to language learning, deals with learners being aware of the strategies they are using and monitoring the process and success of their learning while using cognitive strategies to learn language. Anderson (2002, p. 1) defines metacognition as "thinking about thinking." As Anderson stated, the use of metacognitive strategies ignites one’s thinking and can lead to higher learning and better performance. Furthermore, understanding and controlling cognitive process may be one of the most essential skills that teachers can help second language learners develop.

Thus, metacognition in this study refers to monitoring, planning and evaluating the use of cognitive strategies in a second language learning context.

2.3.1.2 Typology of Metacognition

In Flavell’s (1979) opinion, metacognition includes three components: metacognitive knowledge, metacognitive experience and metacognitive regulation. Metacognitive knowledge refers to the part of one’s acquired world knowledge that has to do with cognitive matters. Metacognitive experiences are conscious

experiences that are cognitive and affective. Metacognitive regulation refers to a set of activities that help students to control their learning. Metacognitive regulation improves performance by encouraging better use of attentive resources, better use of existing strategies, and a greater awareness of comprehension breakdowns. It involves the application of metacognitive strategies like planning, monitoring, managing and evaluating the learning process, its products and use of strategies.

According to Anderson (2002), there are three major aspects of metacognition: metacognitive knowledge — knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive activities; metacognitive experiences — conscious cognitive or affective experiences that accompany and pertain to the cognitive activities; and metacognitive strategies — setting goals, monitoring performance or comprehension and any problems that arise, and making decisions for appropriate subsequent action (Rubin, 1990).

Both Flavell's and Anderson's accounts of metacognition distinguish three major components: metacognitive knowledge, metacognitive experiences, and metacognitive strategies. These three components of metacognition work interactively, and the relationship among them is as follows:

(a) metacognitive knowledge helps individuals to understand their experiences, which is a prerequisite for developing metacognitive experiences;
(b) metacognitive experiences activate the relevant metacognitive knowledge in memory in order to participate in the current metacognitive activities and in this way have a dynamic effect on metacognitive knowledge;
(c) the ever-changing store of metacognitive knowledge will make further metacognitive experiences possible;
(d) metacognitive experiences provide the necessary information for the utilization of metacognitive strategies;
(e) the utilization of metacognitive strategies will inspire new metacognitive knowledge;
(f) the utilization of metacognitive strategies enables individuals to accumulate new experiences when providing cognitive activities, which revise and replenish the

stored metacognitive knowledge.

2.3.1.3 Metacognitive Language Learning Strategies

2.3.1.3.1 Definition of Metacognitive Learning Strategies

Metacognitive language learning strategies have been defined by researchers in different ways. Brown (1987) defined metacognitive strategies as sequential processes that one uses to control cognitive activities, and to ensure that a cognitive goal (e.g., understanding a listening paragraph) has been met. These processes help to regulate learning. They are composed of planning and monitoring cognitive activities, as well as checking the outcome of those activities. Ellis (1994) held the view that metacognitive strategies make use of knowledge about cognitive processes and constitute an attempt to regulate language learning by means of planning, monitoring, and evaluating, and thus have an executive function. Wenden (1999) regarded metacognitive strategies as general skills including planning, monitoring, and evaluating, through which learners manage, direct, regulate, and guide their learning. Cohen (1998) described metacognitive strategies as dealing with pre-assessment and pre-planning, on-line planning and evaluation, and post-evaluation of language learning activities and of language use events. Such strategies allow learners to control their own cognition by coordinating the planning, organizing, and evaluating of the learning process.

In comparison, the metacognitive language learning strategies described by Oxford (1990) and by O'Malley & Chamot (1990) are more detailed and comprehensive. According to Oxford (1990, p. 135), "'metacognitive' means beyond, beside, or with the cognitive. Therefore, metacognitive strategies are actions which go beyond purely cognitive devices, and which provide a way for learners to regulate the learning process." They allow learners to control their own cognition, i.e., to modulate the learning process by centering, arranging, planning, and evaluating. O'Malley & Chamot (1990, p. 44) believed that metacognitive strategies are higher order

executive skills that may include planning for, monitoring or evaluating the success of a learning activity.

2.3.1.3.2 Classification of Metacognitive Learning Strategies

O'Malley & Chamot conducted a series of empirical studies (e.g., 1989) based on information processing theory and proposed a comprehensive list of learner strategies, of which the classification of metacognitive strategies is an important part. They distinguished the following:

1. Planning: Previewing the organizing concept or principle of an anticipated task (advance organization); proposing strategies for handling an upcoming task; generating a plan for the parts, sequence, main ideas, or language function to be used in handling a task (organizational planning).
2. Directed attention: Deciding in advance to attend in general to a learning task and to ignore irrelevant distracters; maintaining attention during task execution.
3. Selective attention: Deciding in advance to attend to specific aspects of language input or situational details that assist in performance of a task; attending to a specific aspect of language input during task execution.
4. Self-management: Understanding the conditions that help one successfully accomplish language tasks and arranging for the presence of those conditions, controlling one's language performance to maximize use of what is already known.
5. Self-monitoring: Checking, verifying or correcting one's comprehension performance in the course of a language task.
6. Problem identification: Explicitly understanding the central point needing resolution in a task or identifying an aspect of the task that hinders its successful completion.
7. Self-evaluation: Checking the outcome of one's own language performance against an internal measure of completeness and accuracy; checking one's language repertoire, strategy use, or ability to perform the task at hand. (O'Malley & Chamot, 1990, p. 137-139)

In O'Malley & Chamot's model, the above seven categories can be classified according to three stages: advance organization, on-line organization, and post-organization. Planning, directed attention, selective attention, problem identification and self-evaluation can be grouped into advance organization which occurs prior to a learning task. Planning is employed as an overall action before a long-term task, such as making a semester-listening plan at the beginning of a semester. It can also be a short and brief plan for a specific learning task, such as planning for how to listen to a passage and what strategies are appropriate for the task. Directed attention in the advance organization stage involves deciding in advance where to direct one's attention in a task. It also functions as a reminder for learners to maintain attention during task execution. Selective attention is used in advance organization to remind one to pay attention to some specific aspect of language input. Problem identification is useful before executing a learning task, because it can make learning more problem-oriented and thus encourage learners to find ways to solve the problem. Evaluation is generally agreed to occur after a language task, but it can also occur in advance when learners use it to evaluate how difficult a task is going to be and what strategy is appropriate in executing the task.

The second group of metacognitive strategies involving on-line organization includes those strategies employed while learning is taking place. In O'Malley & Chamot's typology they include directed attention which students use to focus on a task while they are engaged in completing it. For example, students can employ directed attention during the while-listening stage to focus on the key words and ignore irrelevant ones. Selective attention is also included in this category. This is used to help students attend to the target features or details during task execution. Self-management is another metacognitive strategy used in on-line organization, which is applied to arrange and control one's language performance in order to make the best of what is already known. Self-monitoring relates specifically to on-line organization. It is frequently employed to check, verify or correct one's comprehension or performance during completion of a task, for example, students use self-monitoring to check their understanding in the course of a listening task.

Furthermore, monitoring is not only confined to monitoring comprehension. Monitoring is also employed to monitor task, strategy, production and so on.

The last group of metacognitive strategies, post organization, typically involves self-evaluation, which is used to check the learning outcome or performance. Self-evaluation takes the forms of production evaluation, performance evaluation, ability evaluation and strategy evaluation.

Metacognitive strategies are classified by Oxford (1990) into three groups and further divided into eleven categories:

> 1. centering your learning: overviewing and linking with already known material, paying attention, and delaying speech production to focus on listening;
> 2. arranging and planning your learning: finding out about language learning, organizing, setting goals and objectives, identifying the purpose of language task, planning for language task, and seeking practice opportunities;
> 3. evaluating your learning: self-monitoring and self-evaluation. (p. 137)

In Comparison to O'Malley & Chamot, Oxford's classification of metacognitive strategies is simpler in terms of the three stages. Arranging and planning one's learning involves advance-organization strategies such as finding out about language learning, organizing, setting goals and objectives, identifying the purpose of a language task, planning for a language task and seeking practice opportunities. Centering one's learning is an on-line organization stage, which involves the strategies of overviewing and linking with the already known material, paying attention and delaying speech production to focus on listening. The last group in Oxford's classification can be regarded as relevant to both on-line and post organization stages, since the two strategies — self-monitoring and self-evaluation are not only engaged in the course of task execution but also after completing a task.

The two classifications of Oxford and O'Malley & Chamot share much common ground in subdividing metacognitive strategies in terms of these three types of cognitive process: advance organization, on-line organization and post organization, though they make use of different terms.

Based on previous research, Anderson (2002) has proposed five categories of metacognitive language learning strategies, which include: preparing and planning for learning, selecting and using learning strategies, monitoring strategy use, orchestrating various strategies, and evaluating strategy use and learning.

By preparation and planning in relation to their learning goal, students think about what their goals are and how they will go about accomplishing them. Students, with the help of the teacher, can set a realistic goal within a set time for accomplishing a goal. Setting clear, challenging, and realistic goals can help students see their own progress of language learning and hopefully, by becoming consciously aware of their progress, the students' motivation for language learning will increase.

The metacognitive ability to select and use particular strategies in a given context for a specific purpose means that the learner can think about and make conscious decisions concerning the learning process. Learners should be taught not only about learning strategies but also about when and how to use them. Students should be instructed on how to choose the best and most appropriate strategy in a given language learning situation.

The next category is monitoring strategy use. By examining and monitoring their use of learning strategies, students have a better chance of success in meeting their learning goals (Anderson, 2002). Students should be explicitly taught that once they have selected and begun to use the specific strategies, they need to check periodically whether or not those strategies are effective and being used as intended.

Knowing how to use a combination of strategies in an orchestrated fashion is an important metacognitive skill. Research (e.g., Wenden, 1998; Vandergrift, 2003a) has shown that successful language learners tend to select strategies that work well together in a highly orchestrated way, tailored to the requirements of the language task. These learners can easily explain the strategies they use and why they employ them. Based on O'Malley, Chamot & Kupper (1989), certain strategies or clusters of strategies are linked to particular language skills or tasks. For example, L2 listening comprehension benefits from strategies of elaboration, inferencing, selective attention, and self-monitoring.

One of the most important metacognitive language learning strategies involves evaluating the effectiveness of strategy use. Self-questioning, debriefing discussions after strategy practice, learning logs in which students record the results of their learning strategy applications, checklists of strategies used and questionnaires can be used to allow the student to reflect through the cycle of learning. At this stage of metacognition the whole cycle of planning, selecting, using, monitoring and orchestration of strategies is evaluated.

Anderson's (2002) classification of metacognitive language learning strategies can be seen to still reflect the three general aspects of metacognition, i.e., advance organization, on-line organization and post organization. Preparing and planning for learning can be directly grouped into advance organization which occurs prior to a learning task. Selecting and using learning strategies, monitoring strategy use, and orchestrating various strategies together represent the strategies involved in on-line organization. Evaluating strategy use and learning can be regarded as both on-line and post organization stages, since it is not only engaged in the course of task execution but also occurs after completing a task. Table 3 provides a summary model relating all of the three typologies.

Table 3. A Summary Model of the Three Typologies of Metacognitive Strategies

	O'Malley & Chamot (1990)	Oxford (1990)	Anderson (2002)
Advance Organization	● Planning ● Directed attention ● Selective attention ● Problem-identification ● Self-evaluation	● Arranging and planning one's learning	● Preparing and planning for learning
On-line Organization	● Directed attention ● Selective attention ● Self-management ● Self-monitoring	● Centering one's learning	● Selecting and using learning strategies ● Monitoring strategy use ● Orchestrating various strategies
Post Organization	● Self-evaluation	● Evaluating one's learning	● Evaluating strategy use and learning

It should be noted that different metacognitive language learning strategies

interact with each other. The components are not used in a linear fashion. More than one metacognitive process along with cognitive ones may be working during a learning task (Anderson, 2002). Therefore the orchestration of various strategies is a vital component of second language learning.

2.3.2 Metacognitive Listening Awareness and Strategies

This section first introduces methods that studies have used to investigate metacognitive listening awareness and strategies, and then it reports studies of metacognitive listening awareness-raising. Finally this section reviews research in metacognitive listening strategy training.

2.3.2.1 Methods to Investigate Metacognitive Listening Awareness and Strategies

The scope of listening strategy research has recently expanded to emphasize learners' metacognitive knowledge. Listeners are asked to explicitly report their perceptions about themselves, their understanding of listening demands, their cognitive goals, their approach to the task, and their strategies. To elicit learners' metacognitive knowledge about listening, various procedures have been used, most commonly diaries (Goh, 1997), interviews (Goh, 2002a), and questionnaires (Goh, 2002b; Vandergrift, 2002, 2005a). Results of these studies have shown that language learners possess knowledge about the listening process, albeit to varying degrees, and that this knowledge appears to be linked to listening abilities.

One common method that researchers have used to assess learners' metacognitive awareness in listening is the analysis of diaries. Goh (1997) administered one of the earliest studies examining metacognitive awareness of L2 listeners using diaries. Forty adult Chinese ESL learners in Singapore were asked to keep a diary for ten weeks about their listening study — their reflections on what they did to understand better and how they practiced their listening after class. The researcher argued that keeping a diary provided the right stimulus for students to

reflect on their listening.

In addition to qualitative analysis of texts, questionnaires have also been used. Vandergrift (2005a) used an 18-item questionnaire to assess students' metacognitive awareness of the listening processes and strategies. Participants rated the extent to which the item in the questionnaire described their actual use of each strategy on a scale ranging from 1 to 5. A high score indicated strong agreement with the statement of the item. However, results of the study were limited because the questionnaire used in the study was not sufficiently comprehensive (18 items only) and had not been subjected to rigorous validation procedures.

To make up for the inadequacy of the instrument, Vandergrift, Goh, Mareschal & Tafaghodtari (2006) developed the Metacognitive Awareness Listening Questionnaire (MALQ) to assess L2 learners' awareness and perceived use of listening strategies. To validate the MALQ, Vandergrift and his colleagues conducted an exploratory and a confirmatory factor analysis with two large and different samples of language learners. Based on Flavell's (1979) theoretical model of metacognition, the MALQ consists of 21 items related to five metacognitive factors: problem-solving, planning-evaluation, mental translation, person knowledge and directed attention. Table 4 shows the strategies in each of these five distinct metacognitive factors based on Vandergrift *et al.* (2006, p. 462).

Participants rated the extent to which the items in the questionnaire described their perception and actual use of strategies on a scale ranging from 1 to 6. A high score indicated strong agreement with the statement of the item.

The MALQ has been used extensively to measure changes in listeners' metacognitive awareness (Mareschal, 2007; O'Bryan & Hegelheimer, 2009; Vandergrift & Tafaghodtari, 2010). The questionnaire can be administered retrospectively, i.e. immediately after a listening task, or at any time during a listening course, depending on its purpose. In addition to being a research instrument, this questionnaire can also be used as a teaching tool for raising learners' awareness about L2 listening (as in the study by Coskun in 2010).

Table 4. Metacognitive Strategies by the Five Factors in the MALQ

Factors	Metacognitive Strategies (or belief/perception)
Problem-solving	1. I use the words I understand to guess the meaning of the words I don't understand. 2. As I listen, I compare what I understand with what I know about the topic. 3. I use my experience and knowledge to help me understand. 4. As I listen, I quickly adjust my interpretation if I realize that it is not correct. 5. I use the general idea of the text to help me guess the meaning of the words that I don't understand. 6. When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess makes sense.
Planning-evaluation	1. Before I start to listen, I have a plan in my head for how I am going to listen. 2. Before listening, I think of similar texts that I may have listened to. 3. After listening, I think back to how I listened, and about what I might do differently next time. 4. As I listen, I periodically ask myself if I am satisfied with my level of comprehension. 5. I have a goal in mind as I listen.
Mental translation	1. I translate in my head as I listen. 2. I translate key words as I listen. 3. I translate word by word as I listen.
Personal knowledge	1. I find that listening in English is more difficult than reading, speaking, or writing in English. 2. I feel that listening comprehension is a challenge for me. 3. I don't feel nervous when I listen to English.
Directed attention	1. I focus harder on the text when I have trouble understanding. 2. When my mind wanders, I recover my concentration right away. 3. I try to get back on track when I lose concentration. 4. When I have difficulty understanding what I hear, I give up and stop listening.

Source: Vandergrift *et al.* (2006, p. 462)

2.3.2.2 Metacognitive Listening Awareness Raising Studies

Raising learners' metacognitive awareness about listening has been advocated for a long time now (e.g., Mendelsohn, 1994). ESL/EFL teachers are advised to help their students to develop metacognitive listening awareness. Given the importance of metacognitive awareness in successful listening, researchers began to investigate the effect of raising learners' awareness on listening comprehension. Several recent studies have shown that metacognitive knowledge can be increased through classroom

instruction (e.g., Vandergrift, 2002, 2003b) or peer-peer dialogue (Cross, 2010).

Vandergrift investigated the effect of a strategies-based approach on student awareness of the process of listening. In two investigations, students were guided in the use of prediction, individual planning, peer discussions, and post-listening reflections. Both beginner-level elementary school students (Vandergrift, 2002) and beginner-level university students of French (Vandergrift, 2003b) exposed to such an approach found it motivating to learn to understand rapid, authentic-type texts and responded overwhelmingly in favor of this approach. Students commented on the power of predictions for successful listening, the importance of collaboration with a partner for monitoring, and the confidence-building role of this approach for enhancing their ability to comprehend oral texts. Vandergrift's sequence for guided listening was adopted for teaching tertiary-level Chinese ESL (English as a second language) students; they too reported increased motivation, confidence, and strategy knowledge (Liu & Goh, 2006).

From a sociocultural perspective, Cross (2010) administered a small-scale study exploring metacognitive awareness of L2 listening in Japan. 12 Japanese female adult EFL learners were put in 6 pairs and enrolled in five 90-minute lessons. In each lesson, the participants followed the pedagogical cycle based on Vandergrift (2007) — the five stages consisted of prediction, first listening, second listening, verification, and reflection (p. 199). The pedagogical cycle was modified to include explicit sharing, selecting, and reflecting on listening strategies by learners as a mechanism for stimulating their metacognitive awareness.

Unlike the studies by Vandergrift (2002, 2003b), the participants in the study of Cross did not receive any input from the researcher throughout the research, but autonomously completed the task sequence at their own pace guided by a prompt sheet. The listening texts used in the study were BBC TV news videotexts. Each of the five lessons was audio and video recorded for subsequent transcription and analysis. At the end of each session, learners spent 15 minutes individually writing in a diary their reflections on the pedagogical cycle, news videotext, successes and difficulties, working with their partner, and what they felt they learned from their

partner in the lesson. Results showed that peer-to-peer dialogue was the central mechanism mediating the construction and co-construction of metacognitive awareness, and it also acted as the primary unit of analysis. The qualitative and quantitative analysis of the six pairs' dialogues and corresponding diary entries showed that through the dialogues they took part in as part of the structured pedagogical cycle, they were able to exploit opportunities to enhance their L2 metacognitive listening awareness.

2.3.2.3 Metacognitive Listening Strategy Training Studies

Research on the effects of metacognitive instruction has provided preliminary evidence that performance, confidence, and motivation can be enhanced through classroom instruction (e.g., Goh & Yusnita, 2006; Vandergrift & Tafaghodtari, 2010).

One common approach to metacognitive instruction in listening is a sequence of activities that encourage planning, monitoring, and evaluating strategies used when listening to a selected text. Chamot (1995) suggested a procedure where teachers model how they themselves use strategies when listening to a tape or watching a video with new information. Before listening, the teacher thinks aloud about what he or she already knows about the topic and what words one might expect to hear. After listening to a short segment of the text, the teacher thinks aloud again, describing the mental processes involved during listening, commenting also on whether the predictions have been confirmed or rejected. Finally, the teacher evaluates his or her use of strategies for the particular text. Listening tasks that guide students through the process of listening, i.e., by engaging them in the use of prediction, monitoring, evaluating, and problem-solving, can help learners develop the metacognitive knowledge critical to the development of self-regulated listening.

To explore the benefits of metacognitive listening training, Goh & Yusnita (2006) conducted a small-scale study with 10 primary school pupils in Singapore. Eight listening lessons were conducted. Each lesson followed a three-stage sequence: listen, answer–reflect–report, and discuss. In an additional lesson conducted the week after

the last listening lesson, each pupil wrote a short reflection on their listening ability at the end of the eight sessions so as to consolidate their metacognitive knowledge about the listening process. To assess the value of metacognitive instruction, the researchers also compared the pupils' listening test scores before and after the intervention. The results led the researchers to a conclusion that the process-based lessons had two benefits for young L2 learners. Firstly, the pupils reported an increase in their confidence and metacognitive knowledge. More specifically, their strategy knowledge had increased. Secondly, there was strong indication that metacognitive instruction had contributed to the pupils' improvement in listening test scores.

O'Bryan & Hegelheimer (2009) investigated the metacognitive listening strategy use and awareness of four intermediate students over a one-semester-long ESL listening course at a university in the United States. A series of different types of classroom-based listening strategies were designed by the instructors and taught to the students in the form of podcasts which focused on either demonstrating or encouraging students to review and practice listening strategies. At the beginning and end of the listening course, the Metacognitive Awareness Listening Questionnaire (Vandergrift *et al.*, 2006) was administered as a pretest-posttest instrument to explore the impact of listening strategy instruction and to assess the students' growing metacognitive awareness of strategies. Verbal protocols, semi-structured interviews and student notes were also used as instruments to collect data for the investigation of the students' listening. The study identified students' use of such metacognitive strategies as double-check monitoring, comprehension monitoring, problem identification and advanced organization. The investigation of development of metacognitive awareness throughout the semester identified increased awareness in problem-solving strategies and person knowledge but no change in the awareness of planning-evaluation strategies used by the students. Contrary to the researchers' hypothesis, the study found that the lowest-proficiency student demonstrated an increase in the use of mental translation strategies after a one semester's listening course, a result matching Vandergrift's (1997b) finding.

This study set a fine example of using mixed method approaches for both

qualitative and quantitative data so as to achieve insight into students' listening comprehension strategies and the development of students' metacognitive awareness in listening. While the MALQ provided a quantitative measure, additional qualitative data such as interviews and notes helped to give a fuller understanding of students' responses on the MALQ. However, the findings of the study cannot be generalized as the sample consisted of only four students (due to class absence, only three participants completed the MALQ).

Vandergrift & Tafaghodtari (2010) carried out an empirical study to investigate the effects of a metacognitive, process-based approach to teaching 106 FSL (French as a second language) university-level students L2 listening over a semester. The experimental group listened to texts using a methodology that led learners through the metacognitive processes, whereas the same texts were taught to the control group without any guided attention to listening processes. A listening test was administered at the beginning and the end of the study, and the development in the students' metacognitive knowledge about listening was measured using the Metacognitive Awareness Listening Questionnaire (Vandergrift *et al.*, 2006) at the beginning, middle, and end points of the study, immediately after a listening activity. Results demonstrated that the group receiving the metacognitive instruction significantly outperformed the control group on the final test of listening comprehension, and the less skilled listeners in the experimental group made greater gains than their more skilled peers in the group. The study also provided evidence of a growing awareness of the metacognitive processes underlying successful L2 listening.

A recent study by Coskun (2010) investigated the effect of metacognitive strategy training on the listening performance of forty beginning-level students at a preparatory school of a Turkish university. The students were divided into an experimental group and a control group (twenty students in each group). Each listening task in the experimental group followed the "CALLA strategy training model" (Chamot & O'Malley, 1994), i.e., preparation, presentation, practice, evaluation and expansion. The metacognitive strategies embedded in the listening instruction included planning, monitoring, evaluation and problem identification

strategies. As a strategy training instrument, the Metacognitive Awareness Listening Questionnaire designed by Vandergrift *et al.* (2006) was utilized to keep the students' metacognitive strategy awareness fresh throughout the training and to help them to use, identify and develop learning strategies in a systematic way. Two listening comprehension tests were administered at the beginning and end of the training as the pre-test and post-test. Both tests were designed to be similar to the listening activities in which the strategy training was embedded. The first part of the tests was guessing about the main topic of the text after listening to only the beginning of the recording. The second part of the tests required the students to listen to the entire text and answer some related multiple choice questions. The result of a t-test revealed a significant mean difference in the post-test sores, in favor of the experimental group. The researcher thus concluded that metacognitive strategy training facilitated L2 listening comprehension.

The two studies reviewed above both involved listening comprehension tests and the Metacognitive Awareness Listening Questionnaire (MALQ), but there was no attempt to investigate the relationship between students' listening proficiency and their metacognitive listening awareness. To the writer's knowledge, there has been no study carried out to investigate the relationship between learners' listening proficiency and their metacognitive listening awareness, though the MALQ could be utilized in this way.

Findings from the studies reviewed above have indicated that metacognitive instruction in listening can be beneficial. Goh (2008) summarized the benefits of metacognitive instruction in the following ways:

1. It improves affect in listening, helping learners to be more confident, more motivated and less anxious;
2. It has a positive effect on listening performance;
3. Weak listeners potentially benefit the greatest from it. (p. 196)

The qualitative studies reviewed above point to the promise of a strategy-based approach to teaching L2 listening. Although the results from these studies have been encouraging, most of the studies involved very small samples. Except for Vandergrift & Tafaghodtari's study in 2010, the samples in most of the studies were under 20. Thus their results are not generalizable.

Another issue is how to best utilize the MALQ. Besides using it as a tool to describe or assess changes in learner metacognition resulting from instruction (as in O'Bryan & Hegelheimer, 2009; Vandergrift & Tafaghodtari, 2010; and Coskun, 2010), quantitative data collected from the MALQ can be correlated with the participants' listening test scores. By presenting correlations between listening proficiency and metacognitive awareness, studies in this area can examine the relationship between metacognitive listening awareness and listening comprehension.

2.4 Incidental Vocabulary Acquisition

This section first presents a definition of incidental vocabulary acquisition, and then it reports studies that investigated incidental vocabulary acquisition through listening, and finally it reviews measures to assess vocabulary used in studies of incidental vocabulary acquisition and suggests other available testing instruments.

2.4.1 Definition of Incidental Vocabulary Acquisition

It is generally accepted that a considerable percentage of the L2 vocabulary is acquired incidentally, i.e. as a "by-product" of reading (Nagy, Anderson & Hermann, 1985; Nation & Coady, 1988; Nation, 2001). Incidental vocabulary acquisition has been identified with either acquisition (Krashen, 1981) or implicit learning (Ellis, 2008). In the literature, incidental vocabulary acquisition has been defined as "learning without an intent to learn, or as the learning of one thing, for example

vocabulary, when the student's primary objective is to do something else" (Laufer & Hulstijn, 2001, p. 10), and "the learning of new words as a by-product of a meaning-focused communicative activity, such as reading, listening, and interaction, which occurs through multiple exposure to a word in different contexts" (Huckin & Coady, 1999, p. 185). This study uses the definition of incidental vocabulary acquisition given by Ellis (2008); the "learning of some specific feature that takes place without any conscious intention to learn it" (p. 966).

It is not difficult to point out the advantages of incidental vocabulary acquisition over direct instruction: (a) it is pedagogically efficient because it allows two activities — vocabulary acquisition and reading/listening — to occur at the same time, (b) it is more individualized and learner-based because the vocabulary being acquired is dependent on the learner's own selection of learning materials, and (c) because incidental vocabulary acquisition usually occurs in the process of reading, vocabulary is contextualized, which gives the learner a richer sense of the word's use and meaning than that from traditional exercises.

However, as for an exact definition and characterization of the processes and mechanisms involved in incidental vocabulary acquisition, many questions remain unanswered. A very general problem with the operational definition of incidental vocabulary acquisition given above is that it seems to suggest that incidental learning occurs unconsciously. As Gass (1999) noted, however, defining incidental vocabulary acquisition as the "side-effect" of another activity neglects the active role of the learner in this process. The fact that learning occurs as a by-product of reading does not automatically imply that it does not involve any conscious processes. The seeming equation of "incidental" with "unconscious" is also criticized by Ellis (1994a, p. 38), who believed that incidental vocabulary acquisition is non-explicit in so far as it does not involve an explicit learning intention (the overall goal of the learner is text comprehension), but that neither the process nor the product of such learning is necessarily implicit in the sense of non-conscious.

In typical experiments investigating incidental vocabulary learning, learners are required to perform a task involving the processing of some information without

being told that they will be afterwards tested on their recall of that information. One method is to expose learners to the relevant material without an instruction to learn, which generally means that learners must perform some task that leads them to experience the to-be-tested material but does not lead them to expect a later retention test. For example, learners are required to complete a listening task with some vocabulary items embedded in the listening text, and are later tested on the recall of the vocabulary items, as in the study reported in this thesis.

Another way of investigating incidental learning is to ask learners to learn something, but not the information targeted for subsequent testing. For example, learners are told to listen to a text and then recall the contents of it. However, they are not told in advance that they will be tested afterwards on their recall of the unfamiliar words in the listening text.

2.4.2 Incidental Vocabulary Acquisition through Listening

Most work on second language incidental vocabulary acquisition has focused on how such learning occurs during interactions with written texts or discourse, i.e., how such learning occurs in reading (e.g., Hirsh & Nation 1992; Laufer 1997). Considerably less work has looked at incidental vocabulary acquisition through listening. Nevertheless, many L2 learners, like L1 learners, rely on aural input as the primary source of information about the target language. Through listening they learn to identify the forms and meanings of new words, which they then remember and in due course come to use themselves. This section first briefly reviews studies in incidental vocabulary acquisition from listening to stories in L1, and then reports studies that investigated incidental vocabulary acquisition from L2 listening.

2.4.2.1 Incidental Vocabulary Acquisition from Listening to Stories in L1

There is some evidence that L1 children can pick up new vocabulary as they are being read to (e.g., Elley, 1989; Fondas, 1992; Penno, Wilkinson & Moore, 2002).

In New Zealand, two studies by Elley (1989) investigated the effects on vocabulary acquisition of reading a storybook to some 7-8-year-old pupils. In the first study, twenty target words were selected from a book thought by the researcher to be unfamiliar to students of this age group. A multiple-choice pretest was given to the students prior to the treatment. The test included ten picture vocabulary items where the teacher read aloud the target word and asked the students to select which of the four pictures best matched its meaning. Another twenty words were pretested using word synonyms. During the treatment, students heard the story read aloud three times over the course of one week. Results indicated a mean increase of 15.4% overall with children scoring higher on most target words on the posttest than on the pretest.

In his second experiment, Elley (1989) sought further confirmation of the incidental learning measured in the first experiment. In addition, this study considered permanence of learning and introduced teacher explanation of vocabulary as a treatment variable. The experiment followed a pretest/posttest design to compare the effects of reading two stories aloud, with and without explanation of the target words. As in the first experiment, the students heard the stories read three times over the course of one week. Three months after the reading of the stories, a delayed posttest was given without warning to the students. Analysis for the story read without teacher explanation was nearly identical to the findings in the first experiment. The mean gain in vocabulary was 14.8%. However, for the group of students who heard an explanation of the vocabulary, the overall gain was 39.9%. The results of the delayed posttests of the target words revealed a decline of only 2-3%, which the researcher considered negligible. In an attempt to study word-related variables that affect vocabulary gain, he found the most readily learned words were those with a helpful surrounding context, more than once occurrence, and illustrated by pictures. He concluded that "stories read aloud in this way appear to offer a potential source for ready vocabulary acquisition … repeated exposure and helpful context are significant factors in vocabulary acquisition" (p. 180).

Brett, Rothlein & Hurley (1996) examined the effects of three listening conditions (story-only, story-with-word-explanation, and no story) on 175

fourth-graders with the result that the story-with-word-explanation group made significantly more progress in vocabulary from the pretests to the posttests than the story-only group and the no-story control group. Unlike Elley's studies, the students in this study heard the stories only once, but "the findings indicated that repeated readings of the same story are not necessary for vocabulary acquisition if new words are explained as they are encountered in the story"(p. 419).

Penno, Wilkinson & Moore (2002) evaluated the effects of repeated exposure to a story and the additive effects of explanation of the meaning of target words on children's vocabulary acquisition. Two stories were read to forty-seven 5-6-year-old children on three occasions, each one week apart. One story was read with explanations of the target words, but the other was read without explanations. Two multiple-choice vocabulary tests were given to ensure that no children already knew the target words in the study. All the children were asked to individually retell the story to the examiner and the retelling was audiotaped for later transcription and coding. The same multiple-choice test was given to the children at the beginning and the end of the study (week 1and week 9) as well as the interval of the two stories (week 5). Results showed both of the factors under study (repeated exposure and explanation) contributed significantly to vocabulary growth. The children who received explanations scored significantly higher on the multiple-choice vocabulary test than those who did not. A single exposure to the story resulted in words being learned, and the second and third readings to them resulted in children being able to use words with increasing accuracy in the retelling task, suggesting a more comprehensive understanding of word meaning.

These studies point out some factors that encourage incidental vocabulary acquisition for children listening to stories in L1, namely repetition of the story and explanation of the target words. As noted by Nation (2001), there are several conditions that make learning vocabulary from listening to stories more likely:

1. interest in the content of the story;
2. comprehension of the story;
3. understanding of the unknown words and retrieval of the meaning of those not yet

strongly established;

4. decontextualisation of the target words; and
5. thoughtful generative processing of the target vocabulary. (p. 118)

The preceding review of the literature suggests that listening to stories being read has the potential to be a major contributor to growth in children's word banks because it is a common occurrence in the classroom of primary schools. Significant benefits are derived by children when teachers read stories aloud to them. Among these benefits are increased listening skills, reading comprehension, and vocabulary gains. However, the research in this area has mainly focused on children, i.e., the beginning stages of first language vocabulary learning. Since vocabulary learning does not necessarily occur in similar ways at different stages of proficiency (Meara, 1984), the vocabulary acquisition of more proficient students deserves further exploring.

2.4.2.2 Incidental Vocabulary Acquisition through L2 Listening

Apart from positive findings with L1 children, research with L2 learners has also provided evidence of incidental vocabulary acquisition from listening comprehension (e.g., Vidal, 2003; Brown *et al*, 2008).

Toya (1992) carried out a study in which 109 Japanese university ESL students were asked to listen to two three-minute-long passages. To have the passages include some difficult vocabulary items, some of the expressions in the passages were replaced with more difficult synonyms. In the study, repeated exposure to the passages also resulted in vocabulary gain.

In an attempt to investigate whether listening is effective for adult learners' foreign language vocabulary acquisition, Vidal (2003) explored the effects of EFL proficiency and lecture comprehension on vocabulary acquisition. The participants were 122 Spanish first-year university students. They were pre-tested on their knowledge of the target words, and were presented with a series of three 15-minute videotaped academic lectures. After completing some true-or-false comprehension

questions, the participants were immediately tested on their knowledge of the target words, and were tested again one month later for their retention of the same vocabulary items. The level of knowledge of each target word was measured on a modified version of the Vocabulary Knowledge Scale (VKS) originally designed by Paribakht & Wesche (1997). The main effect of time (i.e., before listening, immediately after listening, and one month after listening) was found to be statistically significant, and the interaction effect between lecture listening and proficiency was also found to be statistically significant. The researcher thus concluded that listening to academic lectures can be a source of EFL vocabulary acquisition. The findings of her study also indicated that the students with a higher level of English proficiency acquired more vocabulary knowledge. Moreover, the study showed that some words were retained over a period of one month.

Smidt & Hegelheimer (2004) investigated the effects of online lectures on vocabulary acquisition of 24 university ESL learners in USA. The participants completed a pre-test, a post-test and a delayed post-test on vocabulary, and a computer-assisted language learning (CALL) activity including an academic lecture. The three vocabulary tests consisted of three partial dictation passages, which were constructed using 20 of the most difficult vocabulary items in the academic lecture. The CALL task consisted of three components, an authentic academic lecture, ten multiple-choice comprehension questions, and access to an online dictionary. The Call activity was conducted the day after the vocabulary pre-test, and the post-test and delayed post-test on vocabulary were separately conducted two weeks and four weeks after the pre-test. To address the effects of learner-task interaction on incidental vocabulary acquisition, the overall effects of the CALL activity on vocabulary acquisition, which was defined as performance on the three vocabulary tests, was investigated through a repeated-measures ANOVA. The ANOVA on the three tests showed a statistically significant difference between the pre-test and the post-test and the pre-test and the delay post-test, while the decrease of the mean vocabulary retention from the post-test to the delayed post-test was not statistically significant. The results suggested that incidental vocabulary acquisition occurred through the use

of authentic online videos of academic lectures in the CALL activity.

Brown, Waring & Donkaewbua (2008) examined vocabulary acquisition of Japanese EFL learners in different conditions. The participants were 35 students of English literature in a private Japanese university. They had studied English for 7.5 years on average and were considered to have pre-intermediate or intermediate-level competence in English judging from their performance in assignments and two standardized tests (VLT and TOEFL). The participants were divided into three groups of various conditions — a reading-only group, a reading-while-listening group, and a listening-only group. Three graded readers, each approximately 5,500 words long, were employed with a total of 28 substitute words (in place of words representing already known common concepts to the participants) embedded within each reading text. Full texts of all the three stories were printed with short written story introductions and delivered to the participants in the reading-only and reading-while-listening groups. However, for the listening-only group, only the story introductions (each approximately 150 words long) were given to the participants, and full stories were read and recorded at a mean speech rate of 93 words per minute (wpm). The reading and listening activities took place during three regular 90-minute classes at intervals of 2 weeks. In order to investigate vocabulary acquisition rates of learners in the different conditions, two tests, a meaning-translation test and a multiple choice test, were given to assess various levels of word knowledge. These tests were administered immediately after the story reading or listening, and, to examine retention of word knowledge, the same tests with a different item order were delivered again one week after and three months after the treatments.

Results of the immediate multiple choice test indicated some impressive vocabulary gains of 48% and 45% from the pre-test for the reading-while-listening group and reading-only group, and for the listening-only group, there was a 29% vocabulary gain. Nevertheless, the meaning-translation test revealed fewer word gains, only 16%, 15% and 2% for the three groups in the above order. The researchers explained the comparatively minimal vocabulary acquisition rates of the listening-only group by the fact that Japanese language has a different syllable

structure to English and the learners were "incapable of processing the phonological information as fast as the stream of speech," and thus "failed to recognize many of the spoken forms of words that they already knew in their written forms" (p. 148). Brown and his colleagues concluded at this stage that the "inaccurate perception of the pronunciation of words and phrases is potentially a greater barrier in listening than in reading" (p. 157). Another reason they gave was that the coverage rate of already known words, i.e., 95% was too low for the listening-only group, which made the task of inferring the meaning of the 28 target words too challenging.

Kazuya (2009) investigated the degree to which high school students acquired vocabulary from listening and what kind of explanation better promotes vocabulary acquisition. 116 second-year Japanese high school students were taught 45 vocabulary items embedded in nine listening passages. The three listening conditions in the study were: in the first treatment, the students were provided with a spoken Japanese translation for each target word; in the second treatment, the students were provided with a spoken English definition of each target word; and in the control condition, no vocabulary explanation was given. Approximately 30 minutes after each listening session, an immediate recognition posttest and a multiple-choice posttest were administered. Two weeks after the instruction, the same tests were administered again as the delayed posttests. The results showed that there was a statistically significant difference between the three conditions in both the immediate and delayed recognition posttests. The L1 translation condition was more effective than the L2 definition condition, and the control condition was the least effective one. However, as for the immediate and delayed multiple-choice posttests, no statistically significant difference between the L1 and L2 conditions was found.

The preceding review of related studies demonstrated that learners acquired meaning of new words through listening in L2. VanPatten (1990) administered a study in order to determine whether or not learners of different competence levels were able to consciously attend to both vocabulary form and meaning while processing input from listening. 202 university students of Spanish were asked to perform various tasks while listening to a passage for meaning to test the following research hypotheses:

1. If learners have difficulty in directing attention toward both content and form, then a task involving conscious attention to non-communicative grammatical-morphological forms in the input will negatively affect comprehension of content.
2. If these same learners are basically going for meaning first, a task involving conscious attention to important lexical items will not affect comprehension of content.
3. More advanced learners will not exhibit the same patterns of performance on the tasks as the early stage learners, i.e., more advanced learners will be more able to direct attention to form since they are better equipped to attend to content.

The participants were put in three different classes according to their language level. Each class listened to two passages. The first passage served as a warm-up and the second passage, a three-minute long recorded segment on inflation in Latin America, was used as the real source of data. The classes were randomly assigned to complete one of four listening tasks. Task 1, the control task, consisted of listening to the passage for content only. Task 2 consisted of listening to the passage for content and simultaneously noting a key lexical item (*inflación*). Task 3 consisted of listening to the passage for content and simultaneously noting a definite article (*la*). Task 4 consisted of listening to the passage for content and simultaneously noting a verb morpheme (*-n*). Each item occurred 11 or 12 times in the passage. The participants were asked to place a check mark anywhere on their paper each time they heard the item. For all tasks, the participants were instructed to listen for meaning and were told that their comprehension of the passage would be assessed afterward. The participants were told about the topic of the passage and some related information before listening to the passage, so that they might activate relevant background knowledge to assist in their comprehension. The comprehension assessment consisted of free written recalls in English. Immediately after the participants heard the passage, they were required to write down anything and everything that they could remember from the passage. These recall protocols were considered as a general indication of comprehension and

would reflect the relative degree of attention that the participants could pay to the content. The recall protocols were subsequently scored independently and the interrater reliability was 0.98.

Concerning the first two research hypotheses, the results revealed a significant drop in recall scores when the participants were asked to simultaneously listen for content and note a grammatical morpheme of little referential meaning. Meanwhile, there was no evidence that the simultaneous tasks of listening for content and noting a lexical item result in a significant drop in recall scores. In other words, conscious attention to important lexical items did not affect comprehension of the content, while conscious attention to non-communicative grammatical-morphological forms in the input negatively affected comprehension of the content. With empirical support for research hypotheses 1 and 2 from the study, the researcher thus suggested that "the communicatively loaded items in input receive conscious attention from early stage learners and become available as intake of the developing language system, while grammatical morphemes of little meaning may be left unattended since they 'escape' attention directed toward meaning or information content" (p. 294).

Regarding the third hypothesis, mixed results were received from the study. While Level III students had significantly different recall scores from Level I and Level II students on the content only task (i.e., Level III could recall much more), they performed about the same on the verb inflection task. This finding showed that for lower level students, there may be no difference between bound and free morphemes, but that for higher level students there is. The results do not suggest that early stage learners are completely incapable of focusing on form in the input, but the results do suggest that a focus on form is probably not continuous in the real world of input processing where there is a primary focus on meaning. As VanPatten noted, "simultaneous conscious attention to informational content and 'meaningless' form in the input is difficult for the early stage and the intermediate stage learner" (p. 296).

The findings that learners had difficulty in attending to form which did not contribute substantially to the meaning of the input regardless of type of input led VanPatten to conclude that conscious attention to form in the input competes with

conscious attention to meaning, and only when the input is easily understood can learners attend to form of important lexical items as part of the intake process. In other words, students cannot concentrate on both form and meaning simultaneously.

Viewed retrospectively, it can be concluded from the studies reviewed so far that:

(a) incidental vocabulary acquisition occurs through listening in L2;
(b) meaning of the lexical items that are important to the content is more likely to be acquired than non-communicative items such as an article or a morpheme;
(c) only when the input is easy enough for learners to understand can they also attend to the form of the important words.

2.4.3 Assessing Vocabulary Knowledge from Incidental Vocabulary Acquisition

The studies reported in the previous section have used various instruments to measure the vocabulary knowledge of the participants. Table 5 provides a brief summary of the instruments used in the studies.

Table 5. Instruments Used to Measure Vocabulary Knowledge

Research	Instruments to measure vocabulary knowledge
Vidal (2003)	● a modified version of the Vocabulary Knowledge Scale (VKS) — a checklist with target words plus some non-words distracters
Smidt *et al.* (2004)	● three partial dictation tests — filling in the blanks with target words
Brown *et al.* (2008)	● a meaning-by-translation test — writing out L1 translation; and ● a multiple-choice test —5-multiple-choice questions, circling the word with the nearest meaning.
Kazuya (2009)	● a recognition test — writing out L1 translation or L2 definition; and ● a multiple-choice test — 5-multiple-choice questions, choosing the word with the closest meaning.

However, as pointed out by Read (2007), "there is in fact much more to know about words if they are to become functional units in the learner's L2 lexicon: how the word is pronounced and spelled, what its morphological forms are, how it

functions syntactically, how frequent it is, how it is used appropriately from a sociolinguistic perspective, and so on" (p. 113). Lexical acquisition is indeed a very complex issue and it cannot be assumed that acquisition of a word's basic meaning will imply acquisition of other aspects of the word. This becomes especially important in the context of incidental vocabulary acquisition from listening, which differs from vocabulary acquisition through reading in that it may lead to more knowledge of the pronunciation of words.

The instruments listed in Table 5 only tested the participants' vocabulary knowledge in one or two aspects. For example, both tests in Kazuya (2009) assessed the participants' knowledge of meaning, but not the spelling, pronunciation, or use of the target words. Therefore these instruments can only partially reveal the vocabulary gains that the learners made through listening. To investigate the effects of listening on vocabulary acquisition, it is important to employ instruments that can specifically test learners' vocabulary knowledge in such aspects as pronunciation of words.

According to Nation (2001), all types of knowledge about a word can be divided into receptive and productive knowledge. Table 6 illustrates this concept. It is clear that vocabulary assessment requires the use of multiple tests in order to obtain a comprehensive picture of the learners' vocabulary knowledge. Tests are needed to measure learners' receptive and productive knowledge in various aspects of vocabulary. Some instruments that are frequently used to assess vocabulary knowledge in terms of orthography, meaning, and grammatical functions are presented and illustrated in the following sections.

Table 6. Definitions of Receptive and Productive Knowledge

Knowledge Type	R/P	Definitions of Receptive and Productive Knowledge for Each Aspect of Knowledge
Orthography	R	The learner can recognize the correct spelling.
	P	The learner can produce the correct spelling.
Meaning and Form	R	The learner can recognize the correct L1 meaning.
	P	The learner can produce the form of the word when given the L1 meaning.
Grammatical Functions	R	The learner can recognize if the item is being used with grammatical accuracy.
	P	The learner can use the word in a sentence with grammatical accuracy.
Syntax	R	The learner can recognize syntagmatic associates.
	P	The learner can produce syntagmatic associates.
Association	R	The learner can recognize paradigmatic associates.
	P	The learner can produce paradigmatic associates.

(Source: Webb 2009, p. 363)

A. Measuring Receptive Knowledge of Meaning

The Vocabulary Level Test developed by Nation (1990) is a way of testing receptive vocabulary knowledge of meaning. The format is very simple. Tests takers are given a list of six words in the left column and are required to select from them to match the three definitions in the right column. In a subsequent development, Read (2000) designed 'Matching Items' to assess the learners' receptive knowledge by asking them to choose three target words from the left column and properly match their numbers with their synonyms or definitions in the right column. See the following example:

1. region
2. atlas ___5__set of bones in the body
3. statue ___1__part of a country
4. cell ___4__smallest part of living things
5. skeleton

(Source: Read, 2000, p. 172)

B. Measuring Receptive Knowledge of Orthographic Form

Webb (2005) developed a test to assess the receptive vocabulary knowledge of

orthographic form (pronunciation and spelling). In the test, the learners were required to circle the correctly spelled target words, which appeared with three distracters. The distracters were created to resemble the target words both phonetically and orthographically. See the following example:

(a) dengie (b) dengy (c) dungie (d) dangy
(a) hodet (b) holat (c) halet (d)hedet

(Source: Webb, 2005, p. 39)

C. Measuring Productive Knowledge of Grammatical Functions

Webb (2005) developed a sentence construction test to assess the learners' productive knowledge of grammatical functions, i.e., how the word is used in a sentence. In the test, learners were given the target words and had to write each one in a sentence. It was made clear in the instructions to the participants that the only determining factor for a correct response was using the target words with grammatical accuracy. For example, for the target word masco (n. = locomotive):

The masco left the station early. √
It is a masco. √
The girl mascoed to school. ×

(Source: Webb, 2005, p. 40)

D. Self-Reporting Vocabulary Knowledge

The Vocabulary Knowledge Scale designed by Paribakht & Wesche (1997) presents learners with a list of words and asks them to indicate the level of their knowledge of each word on a five-point scale. Figure 1 describes the different levels.

The Vocabulary Knowledge Scale combines self-report with some verifiable evidence of word knowledge in the form of a synonym, L1 translation or sentence. Learners can use the scale to report how well they know each of the target words. It is easy to administer to a large number of students. However, it cannot assess how learners acquire vocabulary knowledge over time and, as Read (2000) pointed out it does not assess learners' knowledge of multiple meanings of the target words.

Therefore, it is perhaps best used as a pre-test for learners to self-report their knowledge of certain words so that researchers can get a general idea of the participants' vocabulary knowledge before the treatment.

Level	Description of word knowledge
I	I don't remember having seen this word before.
II	I have seen this word before, but I don't know what it means.
III	I have seen this word before and I think it means _____ (synonym or translation).
IV	I know this word. It means _____ (synonym or translation).
V	I can use this word in a sentence: _____. (Write a sentence.) (*If you do this section, please also do Section IV.*)

Figure 1. The VKS Elicitation Scale (Source: Paribakht & Wesche, 1997, p. 180)

In the present study, the vocabulary pre-test is designed in a similar way to the Vocabulary Knowledge Scale by Paribakht & Wesche. In the vocabulary pre-test, the participants are asked to self-report their vocabulary knowledge of a list of forty words (composed of the twenty lexical items for incidental vocabulary acquisition study and twenty distracters) by circling a number on a five-point scale to indicate how well they know the word (e.g. 4 = I know the word well and can use it correctly; 0 = I do not know the word at all).

Example:

gym	4	3	2	1	0
traffic	4	3	2	1	0
reduction	4	3	2	1	0
harsh	4	3	2	1	0

Webb (2005) administered the vocabulary post-test of form to assess the receptive vocabulary knowledge of orthographic form. The present study uses his design to check if the participants are able to recognize the form/spelling of the target words. Each of the ten target words is put in a word-list with four distracters — words similar in form. Participants are asked to circle the target word from the word-list, and

tell how certain they are about their answer by entering a percentage in the box after the word-list.

Example:
declare – decline – declaim – incline – reclaim

Following the example of Matching Items by Read, the reception test in the present study is designed for the participants to choose three words (one target word along with two distracters) from the left column and properly match their numbers with their synonyms or definitions in the right column.

Example:

1. complicated
2. chemical _____ exceptional; higher
3. optimistic _____ difficult and complex
4. advanced _____ expecting good things
5. stable

Similar to Webb's test to assess the learners' productive knowledge of grammatical functions, the production test of this study involves some original sentences chosen from the listening text and presented with the target lexical items removed. Participants are asked to fill in the blanks to measure their ability to produce the words.

Example:
But we ended with stronger sales than we expected and I am very _____ for next year.

2.5 Summary of the Literature Review

It is clear from the literature reviewed above that metacognitive awareness, with its crucial role of planning, monitoring, and evaluation, is of great value in facilitating

the listening process and thus achieving improved comprehension. Nevertheless, it has always been a field where few Chinese EFL researchers have attempted to explore for instructional purposes. To be precise, the effects of metacognitive listening strategy training on Chinese EFL learners' listening comprehension are rarely studied and little is yet known about the relationship between the learners' metacognitive listening awareness and their listening comprehension.

The review also shows that incidental vocabulary acquisition is a major source of vocabulary gains and incidental vocabulary acquisition through listening, in addition to reading, is another promising source of vocabulary acquisition. However, it has received less attention from researchers. This is especially true in a Chinese context, for few attempts were made to investigate Chinese learners' EFL vocabulary acquisition from listening, neither was there research investigating the effects of different listening conditions on incidental vocabulary acquisition. What is more, the relationship between Chinese learners' EFL vocabulary acquisition and their metacognitive awareness from listening tasks was almost never studied. In this sense, the present study attempts to try a new approach in this research area.

Chapter Three

Pilot Study

3.1 Introduction

The pilot study was conducted in order to test the design, procedures and materials for the main study. This chapter reports the pilot study in such aspects as research questions, participants, design, materials, schedule and procedures, data collection and description, results, discussion, and problems and solutions.

3.2 Research Questions of the Study

The pilot study specifically addressed the following research questions:

1. What is the relationship between learners' metacognitive listening awareness and their listening comprehension under three different listening conditions:

a. when they listen to the text just once;

b. when they listen to the text three times at different speeds;

c. when they engage in a topic-familiarization activity before listening to the text three times at different speeds?

2. What is the relationship between learners' metacognitive listening awareness and their incidental vocabulary acquisition from listening tasks under the same three conditions as above?

3.3 Participants

The participants in the study were three intact classes of first-year Chinese students (N=120, aged 17 to 19) enrolled in an English course at a university in northeastern China. Before the pilot study, the participants had received at least 6 years of formal English education from middle schools and were therefore considered

to be at a pre-intermediate to intermediate level of language proficiency. English as a foreign language was a compulsory academic subject for all of them. All of the participants were studying in the same year at university, using the same course materials and following the same syllabus in their usual listening classes. The participants' listening scores from the previous semester's final exam were taken for reference to ensure of the homogeneity in the classes regarding the level of listening ability.

3.4 Design of the Study

This pilot study was both a correlational and an experimental one.

- The Correlational study

The study investigated the relationship between the learners' metacognitive listening awareness and their listening comprehension, and the study also investigated the relationship between the learners' metacognitive listening awareness and their incidental vocabulary acquisition. The measures of the learners' reported use of metacognitive listening awareness were correlated with the scores of listening comprehension and vocabulary acquisition. The measures of the learners' reported use of metacognitive listening awareness were obtained by using a Likert scale questionnaire. The measures of the learners' listening comprehension were obtained from two listening tasks, while measures of the learners' incidental acquisition of vocabulary were obtained from vocabulary post-tests.

- The Experimental study

In the experimental study, the effects of three conditions for performing the listening tasks on the participants' metacognitive listening awareness, listening comprehension and incidental vocabulary acquisition were investigated. The three listening conditions were:

1. listening texts presented once (Group A);
2. listening texts presented three times at different speeds (Group B);

3. pre-listening activity involving topic-familiarization plus listening texts presented three times at different speeds (Group C).

In other words, this design of the experimental study investigated the effect of the number of times the texts were presented and the effect of the pre-listening activity on the participants' metacognitive listening awareness, listening comprehension and incidental vocabulary acquisition.

3.5 Materials

The materials used in the study were a questionnaire, two listening tasks, a vocabulary selection test, and three types of vocabulary post-tests.

3.5.1 Questionnaire

To investigate the participants' metacognitive listening awareness at the initial phase of the study, Vandergrift *et al.*'s (2006) Metacognitive Awareness Listening Questionnaire (MALQ, see Appendix A) was employed as a standardized measure. The MALQ was a 21-item instrument devised to assess learners' metacognitive awareness in listening. It investigated such sub-sets as problem-solving, planning and evaluation, mental translation, person knowledge, and directed attention. The MALQ had a 6-point scale assessment (from strongly disagree to strongly agree), indicating the participants' metacognitive awareness. Data were collected and analysed in terms of the five different sub-sets.

To make sure that participants would fully understand the questionnaire, both English and Chinese versions of the questionnaire were prepared. The English version of the questionnaire was translated into Chinese by the researcher, and the Chinese version was then back-translated into English by an EFL lecturer. The two English versions were compared and any differences discussed in order to improve the quality of the Chinese translation.

3.5.2 Listening Tasks

The study involved two listening tasks, each of which consisted of a listening text followed by an information transfer task.

(a) Listening Texts

Two listening texts, *A Report of a Sales Manager* and *A Dialogue on a Conference Registration*, each approximately 450 words long, were written for the two listening tasks. Redundancy was purposefully involved in the text construction to achieve sufficient information exposure to the participants. The listening texts were read and recorded by two native English speakers who were EFL teachers in the university where the pilot study was carried out.

(b) Information Transfer Tasks

Similar to the design of Ellis (2003), two information-transfer tasks, i.e., using information in a text to complete a chart or table, were presented after the listening texts to check the participants' comprehension of the texts. The two tasks were: *Drawing a sales line on a company's yearly sales chart* and *Completing a registration form*. The highest possible score for each task was five marks. The participants got one mark for each correct answer on the chart or the registration form.

(c) Vocabulary Items

Each of the two listening texts contained five target words for the investigation of incidental vocabulary acquisition. Thus there were ten target words in total. These words were of relatively low frequency and each occurred twice in the same text. The target words were selected on the basis that they were unlikely to be known by the majority of the participants. According to Cobb's (2005) word list, five of the ten words were beyond the 2000 level and the Academic Word List (AWL); four words were in the AWL; and only one word belonged to the 1000-2000 level.

3.5.3 Vocabulary Tests

(a) **Vocabulary Knowledge Test**

To measure the participants' knowledge of the target words prior to the study, the researcher designed a list of twenty-five words (the ten target words and fifteen other words) for the participants to self-report their knowledge of the vocabulary items at the initial phase of the study. The purpose of this test was to identify words that were unknown to the participants. The participants were asked to circle a number on a five-point scale to indicate how well they knew the word (e.g. 4 = I know the word well and can use it correctly; 0 = I do not know the word at all). Table 7 gives an example of the vocabulary pre-test.

Table 7. Example of the Vocabulary Knowledge Test

Word	I know the word well and I can use it correctly.	I know the word but I'm not sure how to use it.	I know the word but I can't use it.	I only know the meaning of the word when it is in a sentence.	I do not know the word at all.
continue	4	3	2	1	0
talent	4	3	2	1	0
linguistics	4	3	2	1	0
harpsichord	4	3	2	1	0
reputation	4	3	2	1	0

To make sure that the participants' answers to the test were reliable, the target words were tested along with fifteen distracter words of different levels. Table 8 shows the distribution of words in each level according to the classification of Cobb (2005).

Table 8. Statistics of Words of Each Level

Scale	0-500	500-1000	1000-2000	Academic Word List (AWL)	Not in 2000 or AWL	Total
Distracters	2	3	3	5	2	15
Target Words	0	0	1	4	5	10
Total	2	3	4	9	7	25

(Source: Cobb, 2005)

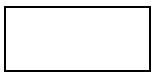
(b) Vocabulary Post-tests

After the participants finished each listening task, three types of vocabulary post-tests (a form test, a reception test, and a production test) were administered to check the students' incidental acquisition of the five target words through each listening task. Five questions were designed in each test and the highest possible score of each test was five marks. The participants got one mark with each correct answer in the test.

1. Form Test

In the form test, each of the five target words was put in a word list with four distracters, i.e., words similar in form. The participants were asked to circle the target word from the word list and then tell how certain they were about the one they circled by entering a percentage in the box after the word list.

Example: declare-decline-declaim-incline-reclaim



2. Reception Test

To check if the participants were able to recognize the meaning of the five target words, following the example of Read's (2000) Matching Items, a reception test was designed. The participants were asked to choose three words (one target word along with two distracters) from the left column and properly match their numbers with their synonyms or definitions in the right column. See the following example:

1. region
2. atlas ___5__set of bones in the body
3. statue ___1__part of a country
4. cell ___4__smallest part of living things
5. skeleton

(Source: Read, 2000, p. 172)

3. Production Test

The production test was a cued recall test in which five sentences were chosen from the listening text and presented with the five target words removed. The participants were asked to fill in the blanks to measure their ability to produce the words.

Example:

But we ended with stronger sales than we expected and I am very _____ for next year.

To avoid a learning effect from one test to another, the three vocabulary post-tests above were delivered separately to the participants.

3.6 Schedule and Procedures of the Study

The pilot study took three weeks, with the schedule as shown in Table 9 below.

Table 9. Schedule of the Pilot Study

Week No.	Contents	Time Spent
1	Questionnaire and Vocabulary Knowledge Test	30 Minutes
2	Listening Task One + Vocabulary Post-tests	23-35 Minutes (varied with groups)
3	Listening Task Two + Vocabulary Post-tests	23-35 Minutes (varied with groups)

The procedures for each listening week (week 2 and week 3) were:

Step 1: The teacher gave out an information transfer task sheet and asked the participants to enter their names (2 minutes);

Step 2: The participants listened to a listening text with the following varied procedures for different groups:

- The participants in Group A listened to the text just once at a moderate speed and accomplished the task sheet while listening (4 minutes);
- The participants in Group B listened to the text three times at different speeds and accomplished the task sheet while listening. The first time listening was at a slow speed; the second time at a moderate speed; and the third time at a fast speed. According to Griffiths (cited from Ellis, 1994, p. 274), a slow speech rate was 94-107 words per minute (wpm) or about 180 syllables per minute (spm); a moderate speech rate was 143-164 wpm or 270 spm; and a fast speech rate was 191-206 wpm or 360 spm. (11 minutes in total);
- The participants in Group C listened to the text three times and accomplished the task sheet while listening, just as Group B did. Also, before the listening, according to the clues from the information transfer task sheet and the topic of the upcoming listening task announced by the teacher, the participants spent 5 minutes working in pairs on a topic-familiarization activity, which included brainstorming, guessing, and discussion on the listening topic to produce a schema about the topic (16 minutes in total). It should be noted that in the topic-familiarization activity, the teacher did not expose the participants to any of the target words but only the topic of the listening text.

Step 3: The teacher collected the information transfer task sheet from the participants (2 minutes);

Step 4: The teacher gave out the Form Test sheets. The participants wrote their names and finished the test. The teacher collected the test sheets (5 minutes);

Step 5: The teacher gave out the Reception Test sheets. The participants wrote their names and finished the test. The teacher collected the test sheets (5 minutes);

Step 6: The teacher gave out the Production Test sheets. The participants wrote their names and finished the test. The teacher collected the test sheets (5 minutes).

3.7 Data Collection and Description

This section reports the method used to collect and calculate data and the

descriptive statistics from the pilot study.

3.7.1 Methods Used to Collect and Analyse the Data

- Measures of the participants' reported use of metacognitive listening strategies were obtained from the questionnaire (MALQ) in terms of Likert scales on sub-sets as the five groups of metacognitive listening awareness;
- Measures of the participants' listening comprehension were obtained from the scores on the two listening tasks;
- Measures of the participants' incidental vocabulary acquisition were obtained from the scores on the vocabulary post-tests;
- Pearson Product Moment Correlation was used and data were calculated to measure the relationship between the participants' scores on metacognitive listening awareness and their listening comprehension or incidental vocabulary acquisition in terms of form, reception and production;
- ANOVA were used to analyse the effects of the three listening conditions on the participants' listening comprehension and incidental vocabulary acquisition.

3.7.2 Descriptive Statistics

This section first presents results of the Vocabulary Knowledge Test and then the descriptive data of the two listening tasks. Table 10 presents the average scores of the participants' self-reported knowledge of the ten words targeted for incidental vocabulary acquisition.

Table 10. Average of the Participants' Knowledge of the Target Words in the Pilot Study

Word	Average	Word	Average
linguistics	0.1	abrupt	0.33
architecture	0.51	accommodation	0.54
domestic	0.67	permanent	1.36
decline	1.49	competitive	1.85
optimistic	2.03	available	3.33

As shown in the table above, two words, *available* and *optimistic*, reached an average of above 2 (4 = I know the word well and can use it correctly; 0 = I do not know the word at all), which meant half of the students might have already known these two words before the study, so the statistical data might not reflect the true acquisition. To achieve a more reliable analysis, in descriptive data the scores of the three vocabulary tests are presented in terms of percentage, with the already-known words subtracted from the total scores on the post-tests.

Another factor that had to be considered was the different amounts of time spent with each group. Group A (listening one time) took 4 minutes, Group B (listening three times) took 11 minutes, and Group C (listening three times + pre-listening discussion) took 16 minutes. Therefore, to counterbalance the effects of varying treatment times on listening comprehension and vocabulary post-tests in the three groups, Mean Words per minute and Standard Deviation per minute were also calculated in the descriptive statistics, as shown in Table 11 and Table 12 below.

Table 11. Descriptive Data in Listening Task One

Group		M Words	M Words/ minute	SD	SD/ minute	Range
A 4 ms	Listening Comprehension	2.55	0.64	1.131	0.283	0-5
	Form	33.38%	8.35%	0.284	0.071	0-80%
	Reception	51.95%	13.00%	0.269	0.067	0-100%
	Production	1.13%	0.28%	0.050	0.013	0-25%
B 11 ms	Listening Comprehension	3.21	0.29	1.559	0.142	0-5
	Form	45.33%	4.12%	0.233	0.021	0-80%
	Reception	50.56%	4.60%	0.239	0.022	0-100%
	Production	9.28%	0.84%	0.164	0.015	0-67%
C 16 ms	Listening Comprehension	4.26	0.27	1.293	0.081	0-5
	Form	57.23%	3.58%	0.258	0.016	20-100%
	Reception	52.84%	3.30%	0.271	0.017	0-100%
	Production	20.12%	1.26%	0.252	0.016	0-67%

Table 12. Descriptive Data in Listening Task Two

Group		M Words	M Words/ minute	SD	SD/ minute	Range
A 4 ms	Listening Comprehension	3.93	0.98	1.207	0.302	0-5
	Form	36.12%	9.03%	0.285	0.071	0-80%
	Reception	55.80%	13.95%	0.311	0.078	0-100%
	Production	5.45%	1.37%	0.133	0.033	0-60%
B 11 ms	Listening Comprehension	4.26	0.39	0.938	0.085	1-5
	Form	55.95%	5.09%	0.303	0.028	0-100%
	Reception	60.15%	5.47%	0.295	0.027	0-100%
	Production	14.26%	1.30%	0.249	0.023	0-80%
C 16 ms	Listening Comprehension	4.21	0.26	1.337	0.084	0-5
	Form	50.12%	3.13%	0.304	0.019	0-80%
	Reception	60.26%	3.77%	0.322	0.020	0-100%
	Production	15.63%	0.98%	0.261	0.016	0-60%

As might be expected, in both tasks, Group C achieved the highest mean scores on almost all items (listening comprehension, form, reception, and production tests). However, considering the length of time given to each group, Group A claimed the highest mean words per minute scores in all items except the production test of Listening Task One. Therefore, we can conclude Group A's listening comprehension was more efficient than the other two groups in terms of time given.

3.8 Results

This section reports findings in the correlational and experimental studies of the research by using mean words per minute.

3.8.1 The Correlational Study

The correlational study aimed to investigate the relationship between learner's metacognitive listening awareness and their listening comprehension as well as their

incidental vocabulary acquisition. This section reports the results in the order of relationship between learner's metacognitive listening awareness and their listening comprehension, and then the relationship between learners' metacognitive listening awareness and their incidental vocabulary acquisition.

3.8.1.1 Relationship between the Participants' Metacognitive Awareness (MA) and Their Listening Comprehension (LC)

Table 13. Pearson Correlations of the Participants' MA and LC in Task One

Listening Scores 1		Planning-Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem-Solving
Group A	Pearson Correlation	.265	.136	.416(**)	.079	.417(**)
	Sig. (2-tailed)	.098	.403	.008	.627	.007

** Correlation is significant at the 0.01 level (2-tailed).

Table 14. Pearson Correlations of the Participants' MA and LC in Task Two

Listening Scores 2		Planning-Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem-Solving
Group A	Pearson Correlation	.225	.492(**)	-.003	.286	.508(**)
	Sig. (2-tailed)	.163	.001	.987	.074	.001
Group B	Pearson Correlation	.300	.369(*)	.164	-.093	-.050
	Sig. (2-tailed)	.067	.023	.326	.578	.767

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The above two tables list the statistically significant Pearson correlations of participants' scores on the MALQ and the two listening comprehension tasks (see Table 1 and Table 2 in Appendix B for the full tables of Pearson Correlations of the Participants' MA and LC in Task One and Task Two). The correlations of Group A's scores on the two listening tasks and the metacognitive awareness of problem-solving were statistically significant. The double asterisks indicates that the estimate of 0.417 and 0.508 were statistically significant at the 0.01 level, a 99% degree of confidence. The correlations of Group A's person knowledge awareness and directed attention

awareness were also statistically significant respectively with listening task one and two at the 0.01 level. The correlations of Group B's scores on listening comprehension task two and the metacognitive awareness of directed attention were statistically significant. The one asterisk indicates that the estimate of 0.369 was statistically significant at the 0.05 level, a 95% degree of confidence.

One possible explanation of why problem-solving awareness was significantly and consistently correlated with listening comprehension scores in Group A only is that the differences in metacognitive awareness were negated when instructional treatments were provided in terms of listening three times, either with or without a pre-listening activity. Therefore, significance only occurred when students were given authentic type listening (listening for one time only). Thus, a conclusion can be drawn here that metacognitive strategies were more important and apparent when learners were engaged in authentic type listening tasks.

3.8.1.2 Relationship between Learners' Metacognitive Awareness (MA) and Incidental Vocabulary Acquisition (IVA)

(a) Relationship between MA and IVA for Group A

Table 15. Pearson Correlations of Group A Participants' MA and IVA in Task One

Task 1		Form	Reception	Production
Problem	Pearson Correlation	.367(*)	.329(*)	.166
-Solving	Sig. (2-tailed)	.020	.038	.307

* Correlation is significant at the 0.05 level (2-tailed).

Table 16. Pearson Correlations of Group A Participants' MA and IVA in Task Two

Task 2		Form	Reception	Production
Person	Pearson Correlation	.473(**)	.028	.218
Knowledge	Sig. (2-tailed)	.002	.864	.177
Problem	Pearson Correlation	.238	.336(*)	.074
-Solving	Sig. (2-tailed)	.139	.034	.650

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The two tables above list the statistically significant Pearson correlations of the participants in Group A's scores on metacognitive listening awareness and incidental vocabulary acquisition in the two tasks (see Table 3 and Table 4 in the Appendix B for the full tables of Pearson Correlations of the Participants' MA and IVA for Group A in Task One and Task Two). In both tasks, scores for problem-solving awareness were statistically significantly correlated with the reception test. When scores of awareness were compared with the vocabulary test in task two, the correlation between scores on person knowledge awareness and the form test was statistically significant at the 0.01 level. The general result showed that for the students who listened to the text just once, the more aware of problem-solving strategy they were, the higher their scores on the reception test. One possible conclusion is that in terms of vocabulary acquisition, the listening texts only aided vocabulary acquisition in form and meaning, but not in production. This can be interpreted to mean that oral input words were much easier to acquire for reception than for production.

(b) Relationship between MA and IVA for Group B

Table 17. Pearson Correlations of Group B Participants' MA and IVA in Task One

Task 1		Form	Reception	Production
Directed Attention	Pearson Correlation	.155	.036	.385(*)
	Sig. (2-tailed)	.351	.829	.017

* Correlation is significant at the 0.05 level (2-tailed).

Table 18. Pearson Correlations of Group B Participants' MA and IVA in Task Two

Task 2		Form	Reception	Production
Directed Attention	Pearson Correlation	.347(*)	.316	.307
	Sig. (2-tailed)	.033	.053	.061
Person Knowledge	Pearson Correlation	.438(**)	.093	.058
	Sig. (2-tailed)	.006	.581	.728

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The above tables list the statistically significant Pearson correlations of the participants in Group B's scores on metacognitive awareness and incidental

vocabulary acquisition in the two tasks (see Table 5 and Table 6 in the Appendix B for the full tables of Pearson Correlations of the Participants' MA and IVA for Group B in Task One and Task Two). For the students who listened to the text three times at different speeds, scores on five groups of metacognitive awareness were compared separately with scores of each vocabulary acquisition test. In Task One, only directed attention awareness was found to have a significant correlation with the production test. In Task Two the correlations between scores on directed attention awareness and form tests were statistically significant. Also in Task Two, person knowledge awareness was found to have significant correlation with the form test. However, the two tables failed to present any consistent findings, and we can not conclude that there is any relationship between metacognitive listening awareness and incidental vocabulary acquisition for students who listened three times.

(c) Relationship between MA and IVA for Group C

Table 19. Pearson Correlations of Group C Participants' MA and IVA in Task Two

Task 2		Form	Reception	Production
Directed	Pearson Correlation	.289	-.034	.325(*)
Attention	Sig. (2-tailed)	.064	.833	.036

* Correlation is significant at the 0.05 level (2-tailed).

Table 19 lists the statistically significant Pearson correlation of the participants in Group C's scores on metacognitive awareness and incidental vocabulary acquisition in Listening Task Two (see Table 7 and Table 8 in Appendix B for the full tables of Pearson Correlations of the Participants' MA and IVA for Group C in Task One and Task Two). For the students who had a topic-familiarization activity before listening to the text three times, scores on five groups of metacognitive awareness were compared separately with scores of each vocabulary acquisition test. However, almost no correlation was found. Only in Task Two was directed attention awareness found to have a significant correlation with the production test. We may then conclude that metacognitive awareness was not significantly related to incidental vocabulary

acquisition for students who listened three times with a pre-listening topic-familiarization activity.

3.8.1.3 Summary of the Correlational Study Results

The main finding of the relationship between learners' metacognitive listening awareness and their listening comprehension and incidental vocabulary acquisition can be summarized as follows.

(a) Problem-solving awareness was only significantly correlated with vocabulary acquisition scores in Group A. In other words, those students who listened to the text just once only achieved higher scores on listening comprehension when they were more aware of problem-solving strategies.

(b) Group A's problem-solving awareness scores were statistically significantly correlated with reception test scores in both of the listening tasks. The results showed that for the students who listened to the text just once, the more aware they were of problem-solving strategies, the better vocabulary acquisition they achieved as shown by their scores on the reception test.

(c) For the students in Group B and Group C, no overall relationships were found between their metacognitive awareness and incidental vocabulary **acquisition**.

3.8.2. The Experimental Study

The experimental study aimed to investigate the effects of the three listening conditions on learners' listening comprehension and incidental vocabulary acquisition. This section will first report the effects of listening conditions on the learners' listening comprehension and then the effects on the learners' incidental vocabulary acquisition.

3.8.2.1 Effects of the Three Different Conditions on Listening Comprehension

Table 20. ANOVA of the Participants' Listening Comprehension Scores of Task One under Three Listening Conditions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.487	2	1.743	49.914	.000
Within Groups	4.156	119	.035		
Total	7.643	121			

Table 21. ANOVA of the Participants' Listening Comprehension Scores of Task Two under Three Listening Conditions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.999	2	5.999	173.357	.000
Within Groups	4.118	119	.035		
Total	16.117	121			

The above ANOVA tables list whether the difference between groups is significantly higher than the deviations within each condition group. The significance value .000 in both tables indicates that listening comprehension scores varied significantly with the various listening conditions. We can thus infer that listening conditions affected the students' listening comprehension in both tasks. Differences between groups in terms of listening comprehension were further revealed by using Scheffe multiple comparison.

Table 22. Multiple Comparisons of the Participants' Listening Comprehension Scores of Task One under Three Conditions

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 1	Group A	Group B	.3461(*)	.04206	.000	.2419	.4504
	Group B	Group C	.0254	.04133	.828	-.0771	.1278
	Group C	Group A	-.3715(*)	.04105	.000	-.4733	-.2697

* The mean difference is significant at the .05 level.

Table 23. Multiple Comparisons of the Participants' Listening Comprehension Scores of Task Two under Three Conditions

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 2	Group A	Group B	.5943(*)	.04186	.000	.4905	.6981
	Group B	Group C	.1239(*)	.04114	.013	.0219	.2258
	Group C	Group A	-.7182(*)	.04087	.000	-.8195	-.6169

* The mean difference is significant at the .05 level.

Figure 2 and Figure 3 report Post hoc multiple comparison of the average listening comprehension scores of Task One and Task Two respectively under every two conditions which can determine which means differ.

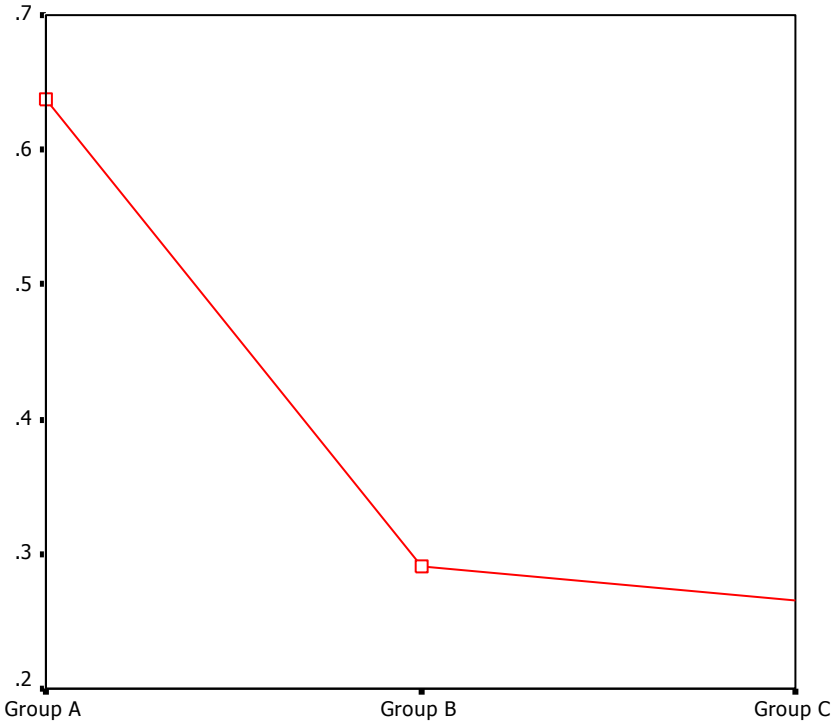


Figure 2. Test Mean Plots of Listening Comprehension Scores of Task One under Three Listening Conditions

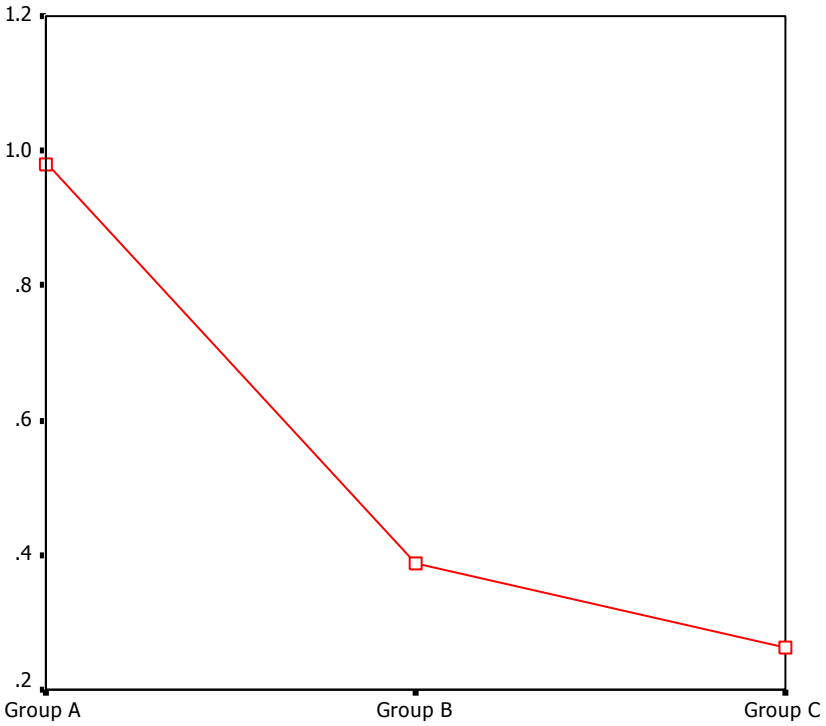


Figure 3. Test Mean Plots of Listening Comprehension Scores of Task Two under Three Listening Conditions

As the tables and figures show, the differences between groups in terms of listening comprehension were considerable, with dramatic significance between Group A and the other two groups. This indicates that when varying treatment times had been controlled for, the condition of listening only once is more efficient than listening three times in terms of listening comprehension.

3.8.2.2 Effects of Three Different Conditions on Incidental Vocabulary Acquisition

(a) ANOVA of Incidental Vocabulary Acquisition under Three Listening Conditions

Table 24. ANOVA of the Participants' Incidental Vocabulary Acquisition under Three Listening Conditions of Task One

Vocabulary Tests		Sum of Squares	df	Mean Square	F	Sig.
form	Between Groups	.055	2	.028	14.656	.000
	Within Groups	.224	119	.002		
	Total	.279	121			
reception	Between Groups	.225	2	.112	64.665	.000
	Within Groups	.207	119	.002		
	Total	.431	121			
production	Between Groups	.002	2	.001	4.727	.011
	Within Groups	.025	119	.000		
	Total	.027	121			
	Total	.107	121			

Table 25. ANOVA of the Participants' Incidental Vocabulary Acquisition under Three Listening Conditions of Task Two

Vocabulary Tests		Sum of Squares	df	Mean Square	F	Sig.
form	Between Groups	.074	2	.037	18.225	.000
	Within Groups	.242	119	.002		
	Total	.316	121			
reception	Between Groups	.242	2	.121	51.355	.000
	Within Groups	.281	119	.002		
	Total	.523	121			
production	Between Groups	.000	2	.000	.286	.752
	Within Groups	.074	119	.001		
	Total	.074	121			

The two tables above give ANOVA of the vocabulary acquisition test scores under the three listening conditions of each task. Apart from the production test scores in Task Two, values of each vocabulary acquisition test scores reach the significance level. Because scores from the form and reception vocabulary acquisition tests varied significantly with different listening conditions, the conclusion may then be safely drawn that listening conditions had an effect on incidental vocabulary acquisition, especially in terms of form and reception. It is unclear why no correlation was found between listening comprehension and production, and this phenomenon deserves closer analysis and discussion. By using Scheffe multiple comparison, differences

between groups in terms of form, reception and production were studied.

(b) Multiple Comparisons of Vocabulary Form Tests under Three Listening Conditions

Table 26. Multiple Comparisons of the Participants' Form Test Scores under Three Listening Conditions of Task One

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 1	Group A	Group B	.0422(*)	.00977	.000	.0180	.0664
	Group B	Group C	.0054	.00960	.852	-.0184	.0292
	Group C	Group A	-.0477(*)	.00954	.000	-.0713	-.0240

* The mean difference is significant at the .05 level.

Table 27. Multiple Comparisons of the Participants' Form Test Scores under Three Listening Conditions of Task Two

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 2	Group A	Group B	.0395(*)	.01015	.001	.0143	.0646
	Group B	Group C	.0195	.00998	.151	-.0052	.0443
	Group C	Group A	-.0590(*)	.00991	.000	-.0836	-.0344

* The mean difference is significant at the .05 level.

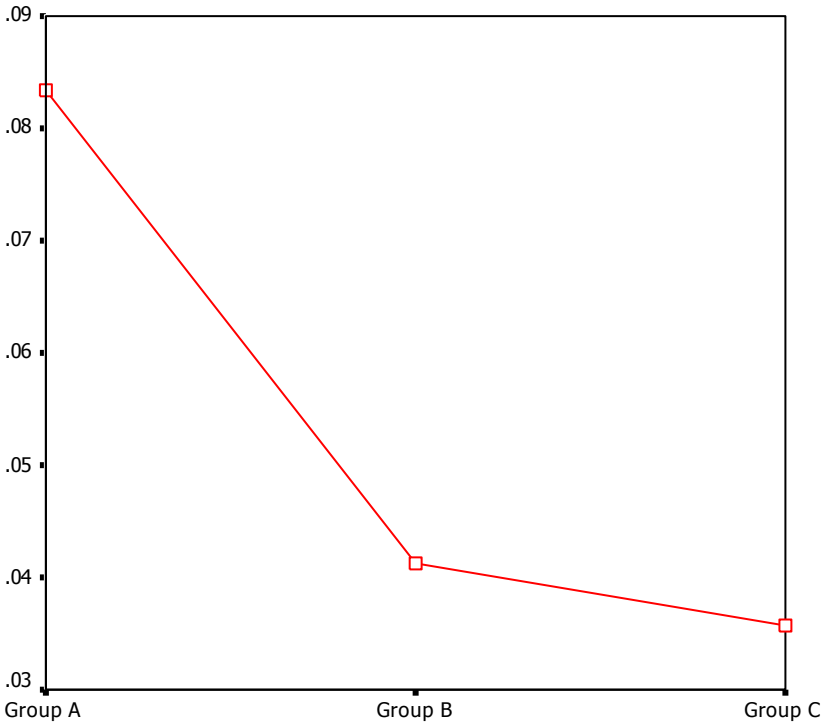


Figure 4. Test Mean Plots of Form Test Scores under Three Listening Conditions of Listening Task One

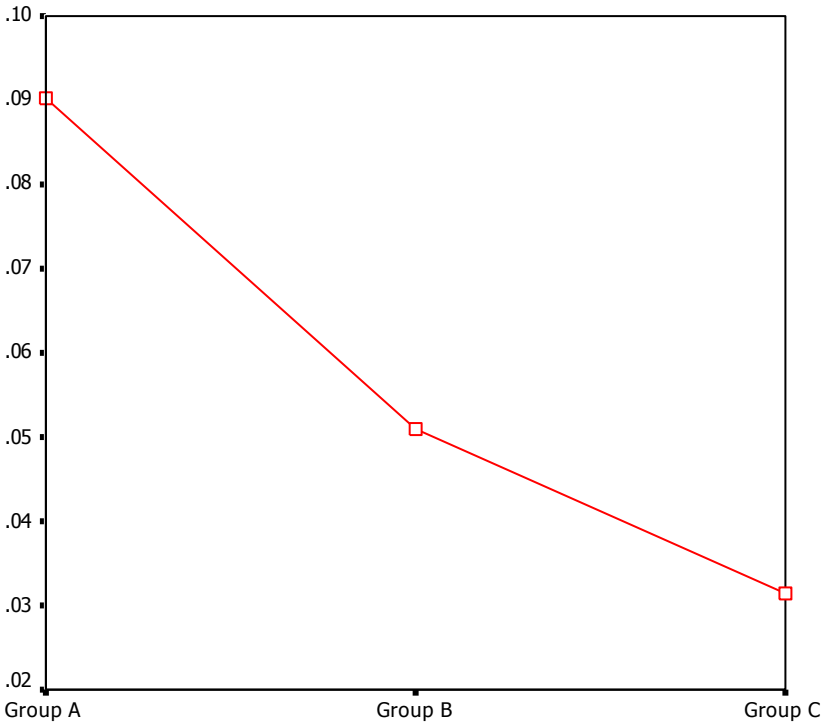


Figure 5. Test Mean Plots of Form Test Scores under Three Listening Conditions of Listening Task Two

Figure 4 and Figure 5 report Post hoc multiple comparison of the average from the form test scores of Task One and Task Two respectively under every two conditions which can determine which means differ.

In the above tables and figures, mean differences between Groups A and B, and Groups C and A were statistically significant, which shows that the students who listened only once had, in terms of vocabulary tests on form, outscored those who listened to the same texts three times. Mean differences between Groups B and C did not reach a significant level, which reveals that there was little difference in form acquisition between the students who listened three times and those who engaged in a topic-familiarization activity before listening three times.

(c) Multiple Comparisons of Vocabulary Reception Tests under Three Listening Conditions

Table 28. Multiple Comparisons of the Participants' Reception Test Scores under Three Listening Conditions of Task One

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 1	Group A	Group B	.0839(*)	.00938	.000	.0607	.1072
	Group B	Group C	.0129	.00921	.376	-.0099	.0358
	Group C	Group A	-.0969(*)	.00915	.000	-.1195	-.0742

* The mean difference is significant at the .05 level.

Table 29. Multiple Comparisons of the Participants' Reception Test Scores under Three Listening Conditions of Task Two

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 2	Group A	Group B	.0848(*)	.01093	.000	.0577	.1119
	Group B	Group C	.0170	.01074	.288	-.0096	.0436
	Group C	Group A	-.1018(*)	.01067	.000	-.1283	-.0754

* The mean difference is significant at the .05 level.

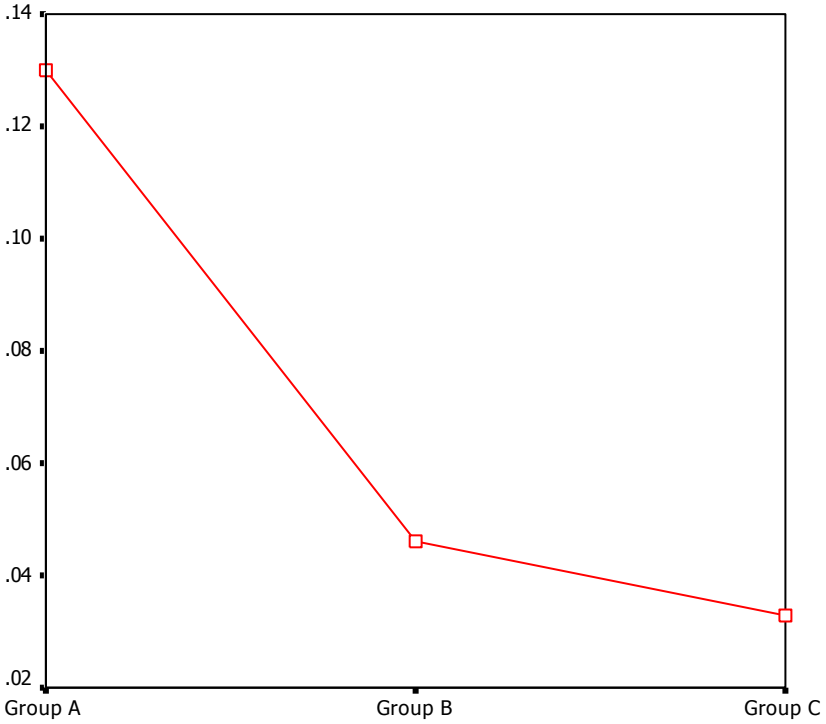


Figure 6. Test Mean Plots of Reception Test Scores under Three Listening Conditions of Listening Task One

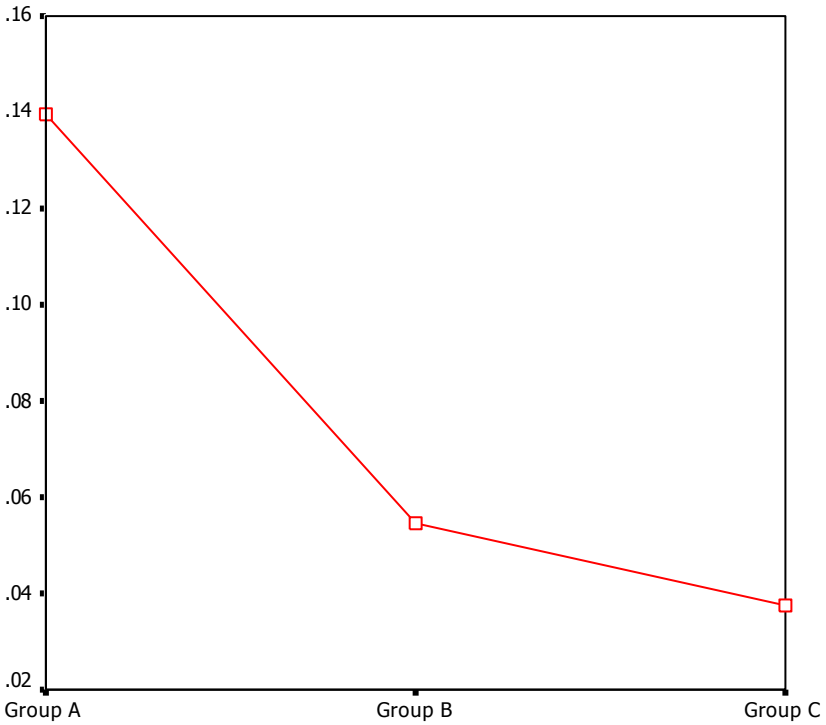


Figure 7. Test Mean Plots of Reception Test Scores under Three Listening Conditions of Listening Task Two

Figures 6 and 7 report Post hoc multiple comparison of the average from the reception test scores of Task One and Task Two respectively under every two conditions which can determine which means differ.

In the above tables, mean differences between Groups A and B, and Groups C and A were statistically significant, which shows that in terms of vocabulary tests in reception the students who listened only once had far outscored those who listened to the same texts three times. Mean differences between Groups B and C seemed less marked, which indicates not much difference in reception acquisition between those listening three times and those with a topic-familiarization activity before listening three times.

(d) Multiple Comparisons of Vocabulary Production Tests under Three Listening Conditions

Table 30. Multiple Comparisons of the Participants' Production Test Scores under Three Listening Conditions of Task One

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 1	Group A	Group B	-.0056	.00326	.230	-.0137	.0025
	Group B	Group C	-.0041	.00320	.437	-.0121	.0038
	Group C	Group A	.0098(*)	.00318	.011	.0019	.0176

Table 31. Multiple Comparisons of the Participants' Production Test Scores under Three Listening Conditions of Task Two

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Listening Comp. Scores 2	Group A	Group B	.0007	.00561	.993	-.0132	.0146
	Group B	Group C	.0032	.00551	.846	-.0105	.0169
	Group C	Group A	-.0039	.00548	.781	-.0174	.0097

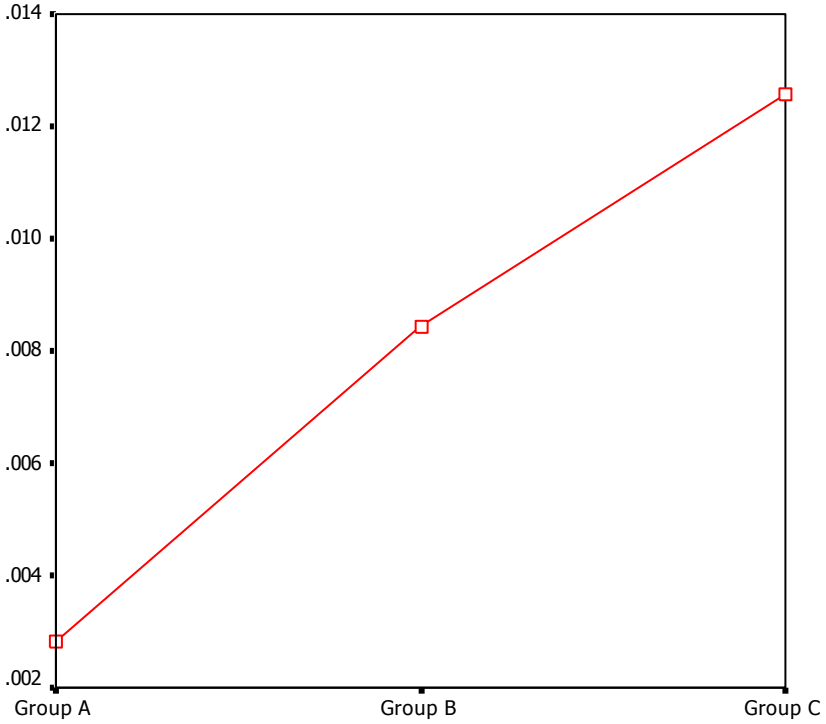


Figure 8. Test Mean Plots of Production Test Scores under Three Listening Conditions of Listening Task One

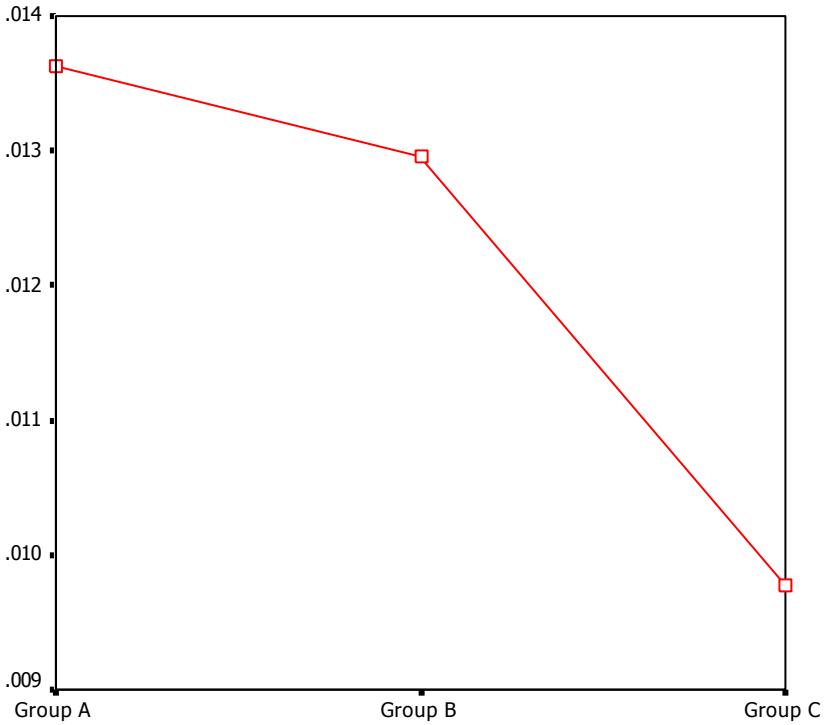


Figure 9. Test Mean Plots of Production Test Scores under Three Listening Conditions of Listening Task Two

Tables 30 and 31 show that mean differences between groups did not reach a

significant level except between Group C and A in listening Task One. Figures 8 and 9 report Post hoc multiple comparison of the average of the production test scores of Task One and Task Two respectively under every two conditions which can determine which means differ.

Just like the general findings from the form and reception tests, in Task Two the results showed that the students who listened only once outscored those students who listened to the same texts three times in reception vocabulary tests. Nevertheless, the findings of Task One were exactly the opposite, with reception performance strongly in favor of Group C, and the mean difference between Group C and Group A was statistically significant. This effect can also be clearly seen from the two figures.

It is interesting to see the contrasting production test results between Task One and Task Two. Why did not the multiple comparison scores of the production test maintain consistency in the two listening tasks just as those of the form and reception tests? Or, to be more specific, why in Task One were the multiple comparison scores of production in favor of Group C, when in Task Two, the favor shifted to Group A? Does it mean that in Task Two Group C performed worse, or Group A performed better? One reason for this may lie in the different orientation of the students in Group A, whose experience from Task One helped them to realize that they would be tested on vocabulary again after finishing Listening Task Two. Thus, chances were that during the second listening task the students would tend to purposefully prepare for the vocabulary tests that would follow. Therefore, students may have paid special attention to vocabulary while listening. The descriptive statistics have shown that students scored better in almost all the vocabulary tests with Listening Task Two than Task One, which might be a result of the purposeful focus on vocabulary that students had in Task Two. What should be specially noted here is that though the scores of all the participants might be improved in Task Two, due to the fact of listening time consumed, this effect applied most significantly to Group A. This may account for the discrepancy between production test results in Task One and Task Two. And if now we believe Figures 3-7 reflect the true picture of production under different listening conditions, we may draw the conclusion that listening three times with a pre-listening

activity aided vocabulary acquisition in production.

3.8.2.3 Summary of the Experimental Study Results

The main finding of the effects of the three listening conditions on the learners' listening comprehension and incidental vocabulary acquisition can be summarised as follows:

(a) Listening conditions had an effect on students' listening comprehension. Dramatic significance was found between Group A and the other two groups, with results in favor of Group A. This indicates that, considering repetition of listening, the condition of listening only once had absolute advantage over listening three times.

(b) Listening conditions had an effect on incidental vocabulary acquisition. Significance was found between Group A and the other two groups, with results in favor of Group A, especially in terms of form and reception.

(c) In terms of production vocabulary acquisition, significance was found in favor of Group C in Listening Task One, but no between-group significance was found in Listening Task Two.

3.9 Discussion

The pilot study was conducted with the main findings that Group A's problem-solving awareness were statistically significantly correlated with reception test scores in both listening tasks. This showed that for the students who listened to the text just once, the more aware of problem-solving strategies they were, the better they did in incidental vocabulary acquisition in terms of the reception test. With these findings, the following points deserve discussion.

(a) Problem-solving strategies were statistically significantly correlated with Group A only.

That problem-solving awareness was significantly correlated with vocabulary

test scores only in Group A can be explained by the assumption that the differences in metacognitive awareness were negated when instructional treatment was provided in terms of listening three times or listening three times with a pre-listening activity. The significant correlation between metacognitive awareness and listening comprehension occurred when students had authentic type listening (listening for only one time). The conclusion can be drawn that metacognitive strategies were more important when learners were engaged in an authentic type listening task.

(b) Problem-solving strategies were statistically significantly correlated with Group A's reception test only.

In both listening tasks, problem-solving awareness was statistically significantly correlated with the reception test scores. One possible conclusion we can draw here is that listening texts only aided vocabulary acquisition of form and meaning, but not in production. This can be interpreted to mean that words learned through oral input were much easier to acquire knowledge of in the aspect of reception rather than production.

(c) Group A almost always achieved the highest vocabulary acquisition per minute scores, but Group C reported the highest production scores.

In terms of receptive knowledge, the authentic listening tasks seemed to be more efficient than tasks involving instructional intervention. Concerning production, simply exposing learners to words and text had no effect. Nevertheless, giving learners more listening repetitions and pre-listening activities did have an effect on vocabulary acquisition in production.

(d) Results in production in Task One and Task Two were different.

It is interesting to see the difference in production between the two tasks. Why did the multiple comparison scores of the production test fail to reach consistency in the two tasks while the scores on the form and reception tests did? Or, to be more specific, why in Task One were the multiple comparison scores of production in favor

of Group C, whereas in Task Two, the advantage shifted to Group A? Does it mean Group C performed worse in Task Two, or Group A performed better?

One possible account is the different orientation of the students in Group A, whose experience from Task One had helped them to realize that they would be tested on vocabulary again in Task Two. Thus, chances were that when the second listening task came the students would tend to prepare for the vocabulary tests that would follow. In other words, students may have paid special attention to vocabulary while listening in Task Two. The descriptive statistics show that students scored better in almost all the vocabulary tests in Task Two than in Task One, which might be a result of the purposeful focus on vocabulary that students had.

3.10 Problems and Solutions

This section presents problems in the pilot study and discusses the solutions to these problems so as to avoid similar occurrence in the main study.

(a) Administration order of the vocabulary post-tests

The vocabulary post-tests were originally planned to be executed in the order of the production test, the form test, and the reception test. However, in an attempt to make the tests easier and the participants more confident, the researcher changed the test order and put the most difficult test (the production test) after the form and reception tests. Although this change in treatment was pedagogically reasonable, it brought statistically uncontrollable factors to the test results. After the participants finished the form and the reception Tests, they would either become familiar with the spelling and meaning of the words being tested or remember the words for further testing, and thus the participants were apt to work out the words in the production test better than they could have done if the production test was first.

To avoid pedagogical intervention in research administration, the main study will strictly administer the original order of the vocabulary post-tests, i.e., the production test, the form test, and the reception test.

(b) The participants' different orientation for Listening Task Two

As planned, when the participants finished Listening Task One, they were given the vocabulary post-tests to check their incidental vocabulary acquisition, and the same procedure was used the following week with Listening Task Two. After the participants received the first round of listening tasks and the vocabulary post-tests, they became aware of the "listening task + vocabulary post-tests" formula and perhaps realized that the same procedure would repeat in the next week. Thus, when Listening Task Two was administered, the participants would tend to prepare for the vocabulary post-tests after the listening task. The participants could pay special attention to the vocabulary items while listening, which would shift the "incidental" vocabulary acquisition to an "intentional" one. The statistics have shown that the participants scored higher in almost all the vocabulary post-tests after Listening Task Two than Task One, which might reflect the purposeful notice taken of vocabulary in Listening Task Two.

To deter the participants from focusing on a different task orientation, one possible solution is to ask the participants to first finish both of the two listening tasks in a row, and then do the vocabulary post-tests immediately.

(c) Unpredicted instrumental factors

With the aim of testing the participants' incidental vocabulary acquisition of the ten new words, the pilot study deliberately chose some words unlikely to be known by the participants. In the Vocabulary Knowledge Test, the students were asked to circle a number on a five-point scale to indicate how well they knew the targeted words (e.g. 4 = I know the word well and can use it correctly; 0 = I do not know the word at all). Table 32 shows the average of the participants' self-reported knowledge of the words targeted for incidental vocabulary acquisition. Unexpectedly, the average knowledge of two words (*available* and *optimistic*) was above 2, which means half of the students might have already known these two words before the pilot study, so the statistical data may not reflect the true vocabulary acquisition and thus resulted in

unreliable analysis.

Table 32. The Participants' Average Knowledge about the Target Words

Word	Average	Word	Average
linguistics	0.1	abrupt	0.33
architecture	0.51	accommodation	0.54
domestic	0.67	permanent	1.36
decline	1.49	competitive	1.85
optimistic	2.03	available	3.33

To solve this unexpected problem, the scores of the vocabulary post-tests were reported in terms of percentage, from which the already known words were subtracted. To avoid a similar problem in the main study, these familiar words were replaced with synonyms of lower word frequency.

(d) Lack of a delayed vocabulary post-test

A delayed vocabulary post-test can provide a better picture of the retention of the vocabulary acquisition. This was not in the design of the pilot study, because the time for the pilot study was rather limited. To reflect the retention of the vocabulary acquisition, some delayed vocabulary post-tests will be included in the design of the main study.

(e) Too few target words

The number of words targeted for the study of incidental vocabulary acquisition was only ten in the pilot study. The number of the target words will be doubled for the main study.

(f) Lack of a control group

The pilot study involved only three experimental groups and no control group. In the main study, four groups of participants will be engaged, with three groups acting as the experimental groups and one as the control group. The control group will

receive the Vocabulary Knowledge Test and the post-tests, but without any treatment.

(g) No point in listening at different speeds

The effects of listening three times at different speeds didn't seem to be related to the research questions. Because the original design of listening three times at different speeds did not yield any interesting results, all listening will be administered at normal speed in the main study.

Chapter Four

Methodology

4.1 Introduction

This chapter will discuss all aspects relating to the design and execution of the main study. It will start by presenting the research questions. Next it will describe in detail the research questions, the research design, the participants, the instruments, the schedule of the study, and the methods for data collection and analysis.

The pilot study, which is described in the previous chapter, shared a number of characteristics with the main study, one of which was that they were both correlational and experimental in nature and were mostly concerned with quantitative analysis. Van Lier (1988) defines quantitative research as involving measuring and controlling. Brown & Rodgers (2002) define experimental research as "studies that compare group behavior in probabilistic terms under controlled conditions using random assignment to groups" (p. 12). Brown (1988) viewed correlational research as studies "designed to investigate the nature and strength of functional relationships among the variables of interest to the researcher" (p. 126).

4.2 Research Questions

This study aims to find answers to the following four research questions:

Research Question One: What effects do different listening conditions have on learners' listening comprehension and incidental vocabulary acquisition?

The four different listening conditions are:

a. when they listen to the texts just once;
b. when they listen to the texts three times;
c. when they engage in a schema raising activity before listening to the texts three times;

and

d. when they engage in an inferencing strategy training before listening to the texts three times?

Research Question Two: What is the relationship between learners' listening comprehension and incidental vocabulary acquisition from listening tasks under the same conditions as above?

Research Question Three: What is the relationship between learners' metacognitive listening awareness and their listening comprehension from listening tasks under the same listening conditions as above?

Research Question Four: What is the relationship between learners' metacognitive listening awareness and incidental vocabulary acquisition from listening tasks under the same conditions as above?

4.3 Research Design

This study is both an experimental and a correlational study. In the experimental study, the effects of four conditions for performing the listening tasks on the students' listening comprehension and incidental vocabulary acquisition are investigated. The four listening conditions are described in the previous section. This design allows two listening conditions to be investigated: (1) the effects of number of times listening texts are presented to the students, and (2) the effects of the pre-listening activity and the pre-listening training.

In the correlational study, measures of the learners reported use of metacognitive strategies (i.e., their metacognitive listening awareness) are correlated with their scores on listening comprehension and vocabulary acquisition tests. Measures of the participants' reported use of listening metacognitive strategies are obtained using a Likert scale questionnaire. Measures of the participants' listening comprehension are obtained from four listening tasks. Measures of the participants' incidental vocabulary acquisition are obtained from three different types of vocabulary tests. These instruments are to be described in details in the upcoming section of this chapter.

4.4 Participants

The participants of the study are 172 first-year Chinese university students. They are at the age of seventeen to nineteen and enrolled in an English course at Shenyang Jianzhu University, China. English as a foreign language is a compulsory academic subject to all of the participants. Before entering university, the participants have received at least six years' formal English instruction and thus are considered to be at a pre-intermediate to intermediate level of language proficiency.

The participants are in the same year at university, using the same course materials and following the same syllabus in their usual listening classes. To be sure of the homogeneity in the classes regarding level of listening ability, the participants' listening scores from the College Entrance Exam are taken for reference.

4.5 Instruments

The instruments for the study are composed of four listening tasks, a questionnaire, and some vocabulary tests.

4.5.1 Listening Tasks

Two cycles of listening tasks are given to the participants, with two tasks in each cycle. Each listening task consists of a listening text and an information transfer task (see Appendix C).

(a) Listening Texts

Four approximately 450-word-long listening texts are designed for the listening tasks. These texts are *A Report of a Sales Manager*, *A Dialogue on a Conference Registration*, *A Telephone Call to a Sports Center*, and *A TV Program on Different Types of Working Dogs*. Each text involves five words for the study of incidental vocabulary acquisition. In order to enable the participants to be exposed to sufficient

information about the words under study, when the listening texts were written, sufficient context was provided in which concepts were purposefully repeated for clarification. See the following examples.

1. At the start of the year I felt very **optimistic** for our company. I felt we had a good chance of having an excellent year.
2. We are all already **registered**. We gave our names and paid our membership fees three weeks ago.

The listening texts were read and recorded at a moderate speed by two native English speakers, and all the listening texts were pre-checked by other EFL teachers who were native English speakers.

(b) Vocabulary Items

In total twenty words of low frequency were chosen as target words for the incidental acquisition study, selected on the basis that they were unlikely to be previously known by the participants. Each listening text contained five target words, with each word occurring twice in the same text.

(c) Information Transfer Task

Four information-transfer tasks (i.e., using information in a text to complete a chart or table), based on Ellis' (2003) task-based listening tasks, were designed to check the participants' comprehension of the listening texts. The four tasks were *Drawing a sales line on a company's yearly sales chart*, *Completing a conference registration form*, *Filling in a customer information sheet from a telephone conversation*, and *Completing a form with information on different types of workings dogs*. The highest possible score for each information transfer task was five marks. Participants got one mark for a correct answer in each part of the chart drawing or each blank filling in the form.

4.5.2 Questionnaire

At the initial phase of each listening cycle, Vandergrift *et al.*'s (2006) Metacognitive Awareness Listening Questionnaire (the MALQ, see Appendix A) is used to investigate the participants' metacognitive awareness. The MALQ is a 21-item instrument devised to assess learners' metacognitive listening awareness. It investigates such sub-sets as:

- Planning-Evaluation (i.e. strategies learners use to prepare themselves for listening and to evaluate the results of their listening efforts);
- Person Knowledge (i.e. learners' perceptions concerning the difficulty presented by L2 listening and their self-efficacy in L2 listening);
- Problem-Solving (i.e. strategies learners use to guess at what they do not understand [inference] and to monitor these inferences);
- Directed-Attention (i.e. strategies learners use to concentrate and to stay on task); and
- Mental Translation (i.e. online mental translation strategies).

The MALQ has a six-point scale assessment (1-6, with 1 representing strongly disagree and 6 representing strongly agree), indicating the participants' metacognitive awareness. Data were collected and analyzed in terms of the five different sub-sets described above.

To make sure that participants fully understand the questionnaire, both English and Chinese versions of the questionnaire were prepared. The English version of the questionnaire was translated into Chinese by the researcher. An EFL lecturer then back-translated the Chinese version into English. The two English versions were compared and any differences in the two versions were discussed in order to improve the quality of the Chinese translation version of the questionnaire.

4.5.3 Vocabulary Tests

Two types of vocabulary tests were administered in this study.

(a) Vocabulary Selection Test

The vocabulary selection test was administered to decide which target words were mostly unknown to the participants. In the test, a list of forty words (composed of the twenty target words for incidental vocabulary acquisition study and twenty distracters) was given for the participants to self-report their knowledge of the vocabulary items. To make sure that the participants' answers to the vocabulary selection test were reliable, the twenty target words were tested in mixture with twenty other words. The participants were asked to circle a number on a five-point scale to indicate how well they knew the word (4 = I know the word well and can use it correctly; 0 = I do not know the word at all). Table 33 shows a part of the vocabulary pre-test (see Appendix D for the complete Vocabulary Pre-test), and Table 34 shows the distribution of words of each word level according to Cobb's (2005) classification.

Table 33. Sample of the Vocabulary Selection Test

gym	4	3	2	1	0
traffic	4	3	2	1	0
reduction	4	3	2	1	0
harsh	4	3	2	1	0
international	4	3	2	1	0

Table 34. Distribution of Words of Each Level

Scale	0-500	500-1000	1000-2000	Academic Word List (AWL)	not in 2000 or AWL	Total
Distracters	5	1	3	3	8	20
Target Words	0	1	2	9	8	20
Total	5	2	5	12	16	40

(Classification source: Cobb, 2005)

(b) Vocabulary Post-tests

Three types of tests (i.e., a production test, a form test, and a reception test) were designed as vocabulary post-tests after each cycle of the listening tasks (see Appendix D). These tests were administered to the participants immediately after the listening tasks to check the participants' incidental vocabulary acquisition on the target words through listening. To examine the retention of vocabulary acquisition, the same vocabulary tests were administered again to the participants in the following week as the delayed vocabulary post-tests.

There were ten questions in each of the two vocabulary post-tests and the highest possible score was ten marks. The participants got one mark with each correct answer to the questions of the tests.

1. The Production Test

The production test was a cued recall test. To measure the participants' ability to produce the words, ten sentences were chosen from the listening texts and presented with the ten target words removed. In the test, the participants were asked to fill in the blanks with the exact words from the listening texts.

Example:

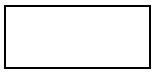
But we ended with stronger sales than we expected and I am very _____ for next year.

2. The Form Test

To check if the participants were able to recognize the form of the target words, each of the ten target words was put in a word list with four distracters, i.e., words similar in spelling. The participants were asked to circle from each word list the word that they heard from the listening texts. To see if the participants circled the answer simply from guessing, they were also asked to tell how certain they were about their answers by entering a percentage in the box after the word list.

Example:

declare-decline-declaim-incline-reclaim



3. The Reception Test

By following the example of Read's (2000) Matching Items, the reception test was designed to check if the participants were able to recognize the meaning of the target words. In the test, the participants were asked to choose three words (one target word along with two distracters) from the left column and properly match their numbers with their synonyms or definitions in the right column.

Example:

1. region
2. atlas ___5__set of bones in the body
3. statue ___1__part of a country
4. cell ___4__smallest part of living things
5. skeleton

(Source: Read, 2000:172)

To avoid a learning effect from one test to another, the three vocabulary post-tests were delivered separately to the participants in the order of the production test, the form test, and the reception test.

4.6 Schedule of the Study

The main study took five weeks. The schedule for each week is shown below in Table 35.

Table 35. Schedule of the Main Study

Week No.		Contents of the Study	Time Spent
1		Vocabulary Knowledge Test (functioning as a selection test)	10 minutes
1st cycle of the listening tasks	2	● Pre-Questionnaire on metacognitive listening awareness (10 minutes); ● Listening Task-1 (6-21minutes); ● Listening Task-2 (6-21minutes); ● Vocabulary post-tests on tasks 1 & 2 (24 minutes)	46-76 minutes (time varies with groups)
	3	Delayed vocabulary post-tests on tasks 1 & 2	24 minutes
2nd cycle of the listening tasks	4	● Pre-Questionnaire on metacognitive listening awareness (10 minutes); ● Listening Task-3 (6-21minutes); ● Listening Task-4 (6-21minutes); ● Vocabulary post-tests on tasks 3 & 4 (24 minutes)	46-76 minutes (time varies with groups)
	5	Delayed vocabulary post-tests on tasks 3 & 4	24 minutes

The first cycle of listening tasks 1 and 2 are executed in the following order:

Step 1: The participants fill in the Metacognitive Awareness Listening Questionnaire to report their general use of metacognitive listening awareness. (10 minutes)

Step 2: The teacher gives out information transfer activity sheet and asks the participants to enter their names. (1 minute)

Step 3: The participants listen to a listening text with the following varied procedures for different groups:

(a) The participants in Group A listen to the text just once and accomplish the activity sheet while listening. (4 minutes)

(b) The participants in Group B listen to the text three times. For the first time, they

just listen. The second time, they complete the activity sheet as they listen. They check their answers and make any necessary changes and corrections during the third time listening. (10 minutes)

(c) Just as for Group B, the participants in Group C listen to the text three times. But before the listening, according to the clues from the information transfer activity sheet and the topic of the upcoming listening task announced by the teacher, they spend five minutes working in pairs on a topic-familiarisation activity, i.e., brainstorming, guessing, and discussing on the listening topic, so as to produce a schema about the topic. (15 minutes) It should be noted that the teacher doesn't expose the participants to any of the target words in the topic-familiarisation activity, but only the topic of the listening text.

(d) As for the participants in Group D, they also listen to the text three times. But before the listening, they receive a five-minute strategy training on inferencing, i.e., guessing the meaning of an unknown word by using their general knowledge and clues they can find from the context. (15 minutes)

Step 4: The teacher collects the information transfer activity sheets from the participants. (1 minute)

Step 5: Steps 2-4 are conducted again with listening task 2.

Step 6: The teacher gives out the production test sheets. The participants write their names and finish the test. The teacher collects the test sheets. (8 minutes)

Step 7: The teacher gives out the form test sheets. The participants write their names and finish the test; the teacher collects the test sheets. (8 minutes)

Step 8: The teacher gives out the reception test sheets. The participants write their names and finish the test. The teacher collects the test sheets. (8 minutes)

Step 9: Steps 6-8 are conducted again in the following week as the delayed post-tests.

The above procedure (steps 1-9) is repeated for the second cycle of listening tasks 3 & 4 in the following two weeks.

4.7 Data Collection and Analysis

The following methods were used to collect data in the study:

(a) Measures of the participants' reported use of metacognitive listening awareness were obtained from the questionnaire (the MALQ) in terms of Likert scales on the five sub-sets of metacognitive listening awareness.

(b) Measures of the participants' listening comprehension were obtained from their scores on the listening tasks.

(c) Measures of the participants' incidental acquisition of vocabulary were obtained from their scores on the vocabulary post-tests.

The following methods were used to analyze data of variables in the study:

(a) Pearson Product Moment Correlation was used and data were calculated to measure the relationship between the participants' metacognitive listening awareness and their listening comprehension as well as their incidental vocabulary acquisition.

(b) Listening comprehension scores were compared separately with each vocabulary acquisition test scores.

(c) ANOVA were used to examine the effects of the four listening conditions on the participants' listening comprehension and incidental vocabulary acquisition.

Chapter Five

Results — the Effects of Different Listening Conditions on Listening Comprehension and Incidental Vocabulary Acquisition

5.1 Introduction

This chapter will report the results for two research questions.

Research Question One is: What effects do different listening conditions have on learners' a) listening comprehension and b) incidental vocabulary acquisition?

Research Question Two is: What is the relationship between learners' listening comprehension and incidental vocabulary acquisition?

The key independent variables to be examined in Research Question One are the four different listening conditions as:

1. listening to a text one time only (Group A);
2. listening to a text three times (Group B);
3. engaging in schema-raising training before listening to a text three times (Group C)
4. receiving inferencing training before listening to a text three times (Group D).

The dependent variables to be examined in this chapter are:

1. listening comprehension
   and
2. vocabulary acquisition.

The instruments and procedures used to measure these variables are described in detail in Chapter Four (Methodology). However, to facilitate processing of the results reported below each variable is briefly described here again.

(a) Listening Conditions

Four different listening conditions were designed as instructional treatments to four different groups of learners to examine the effect of listening conditions on learners' listening comprehension and their incidental acquisition of new vocabulary.

- Group A listened to each text just once and filled in the task answer sheet while listening (4 minutes);
- Group B listened to the text three times. The first time they just listened and completed the task answer sheet as they listened the second time. When they listened the third time, they checked their answers and made changes to their answers (10 minutes);
- Group C listened to the text three times as had Group B, but before listening, they spent 5 minutes working in pairs on a topic-familiarisation activity to activate schema relevant to the topic by brainstorming/guessing/discussing, etc. (15 minutes);
- Group D also listened to the text three times like Group B, but before listening, they received 5-minute training in the use of inferencing strategies to help them raise awareness of the importance in guessing the meaning of unknown words and to develop their ability to practise this strategy (15 minutes).

It should be noted that the teacher did not present the target words to any of the groups. The words were only introduced in the context of the listening tasks.

(b) Listening Comprehension

The learners completed two cycles of listening tasks. Within each listening cycle, the students were asked to listen and complete some tables with information. They were awarded one mark for each correct piece of information they provided. The total score for each listening cycle was 10 marks.

(c) Incidental Vocabulary Acquisition

The learners' incidental vocabulary acquisition was measured by means of vocabulary post-tests after each listening task. The immediate post-tests were administered immediately after each cycle of tasks, and the delayed post-tests, identical to the immediate post-tests, were administered one week later. The purpose of the tests was to measure the learners' vocabulary acquisition. There were three different vocabulary tests – a production test, a test for the recognition of the form of

words and a test of receptive knowledge. The total score of each post-test was 10 marks.

The study involved two separate cycles of listening activities. Therefore, first, this chapter will consider to what extent the learners' performance in these two cycles was similar or different in order to decide whether to present results for the cycles separately or combined. Next, results for listening comprehension and vocabulary acquisition will be presented. A discussion of the results follows. Finally, a conclusion section summarizes the main findings.

5.2 Comparison of the Two Cycles of Listening Activities

5.2.1 Comparison of the Two Cycles of Listening Comprehension (LC) Scores

To determine whether there was any statistically significant difference in the learners' performance on the measures of listening comprehension for Cycle 1 and Cycle 2, the two sets of scores for the whole sample were compared using a paired t-test (see Table 36). The results showed that the students' level of comprehension on the listening tasks in the two cycles was statistically different (p = .000). For this reason it was decided not to combine the scores for the two cycles but to conduct separate analyses for Cycle 1 and Cycle 2.

Table 36. T-test of LC Scores for Cycle 1 and Cycle 2 (whole sample, N=172)

	Paired Differences				Sig.
	M	SD	t	df	(2-tailed)
C1 Listening Comprehension - C2 Listening Comprehension	1.61	1.896	11.033	168	.000

Note. C = cycle; M = mean; SD = standard deviation

5.2.2 Comparison of the Two Cycles of Vocabulary Acquisition (VA) Scores

In order to establish whether to combine the two cycles in the analyses involving

the measures of vocabulary acquisition, t-tests were used to compare the vocabulary acquisition scores for Cycle 1 and Cycle 2. First total vocabulary scores (obtained by averaging the scores on the separate tests) were compared. The results are shown in Table 37. The differences for both immediate and delayed vocabulary post-tests reached significance level (p =.016 and .001). Next, the scores obtained for the different vocabulary acquisition sub-tests were compared. The results, as shown in Table 38, indicate that except for the vocabulary form sub-tests, the learners' scores differed significantly in all the tests in the two cycles of listening. Given that the learners clearly differed in their ability to learn vocabulary from the listening tasks of the two cycles, a decision was taken to conduct separate analyses for each cycle.

Table 37. T-tests of VA Scores for Cycle 1 and Cycle 2 (whole sample, N=172)

	Paired Differences				Sig.
	M	SD	t	df	(2-tailed)
C1 Vocabulary Acquisition Imm - C2 Vocabulary Acquisition Imm	.57	3.045	2.436	170	.016
C1 Vocabulary Acquisition Del - C2 Vocabulary Acquisition Del	.73	2.833	3.348	170	.001

Table 38. T-tests of Three Vocabulary Sub-test Scores for Cycle 1 and Cycle 2 (whole sample, N=172)

	Paired Differences				Sig.
	M	SD	t	df	(2-tailed)
C1 Vocabulary Production Imm - C 2 Vocabulary Production Imm	.11	.452	3.207	171	.002
C 1 Vocabulary Form Imm - C 2 Vocabulary Form Imm	-.08	1.926	-.515	171	.607
C 1 Vocabulary Reception Imm - C 2 Vocabulary Reception Imm	.60	2.178	3.606	171	.000
C 1 Vocabulary Production Del - C 2 Vocabulary Production Del	.09	.448	2.715	172	.007
C 1 Vocabulary Form Del - C 2 Vocabulary Form Del	.01	2.141	.071	171	.943
C 1 Vocabulary Reception Del - C 2 Vocabulary Reception Del	.64	1.928	4.350	171	.000

Note. C = cycle; M = mean; SD = standard deviation; Imm = immediate post-tests; Del = delayed post-tests

5.2.3 Summary of Comparison of the Two Cycles of Listening Activities

To sum up, given that the students' performance in Cycle 1 and Cycle 2 differed in both listening comprehension and vocabulary acquisition, it was decided that all the subsequent analyses will be conducted separately for the two listening cycles.

5.3 Results for Research Question One

One of the aims of the research reported in this chapter is to examine the effect of different listening conditions on learners' listening comprehension and their incidental acquisition of new vocabulary. This section will examine to what extent the different listening conditions affected the learners' listening comprehension and incidental vocabulary acquisition.

First, descriptive statistics and the results of separate analyses of ANOVAs and Scheffe tests are reported below for listening comprehension and vocabulary acquisition for each instructional group in each listening cycle.

5.3.1 Results for Listening Comprehension

Table 39. Descriptive Statistics for Listening Comprehension Scores of Two Cycles

Group	Cycle 1			Cycle 2		
	M	SD	Range	M	SD	Range
A (N=44)	4.87	2.052	2-10	4.07	1.827	1-8
B (N=43)	8.09	1.597	3-10	6.00	1.864	0-9
C (N=45)	7.24	2.423	0-10	5.39	1.732	0-9
D (N=40)	7.68	1.650	3-10	6.13	1.542	3-8
Whole Sample (N=172)	6.95	2.325	0-10	5.39	1.913	0-9

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; M = mean; SD = standard deviation

As Table 39 shows, the range in scores was considerable (i.e. 0-10) and the groups varied in mean scores (i.e. 4.07-8.09), indicating substantial variance in the sample as a whole. Also, the means show that all groups scored higher in Cycle 1 than in Cycle 2, which indicates that the tasks in Cycle 2 were more difficult. Groups B, C, and D scored markedly higher than Group A (three-time listening vs. one-time listening). Within the three-time listening groups, the mean scores of Group C in both listening cycles were lower than those of Groups B and D. Whereas Group B outscored Groups C and D on listening comprehension in Cycle 1, this advantage was lost to Group D in listening Cycle 2.

ANOVA shows there was an overall statistically significant difference among the four groups in listening Cycle 1, $df = 3$, $F = 23.980$, $p = .000$ (see Table 1 in Appendix E for the ANOVA table of listening comprehension scores in Cycle 1). A post hoc Scheffe test (Table 40) shows that Group A scored significantly lower than Groups B, C and D. However, the difference among these three-time listening groups was not statistically significant.

Table 40. Scheffe Test of Differences in Listening Comprehension Scores among the Four Groups in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Listening comprehension scores 1	Group A	Group B	-3.22(*)	.417	.000
	Group A	Group C	-2.38(*)	.415	.000
	Group A	Group D	-2.82(*)	.425	.000
	Group B	Group C	.85	.417	.253
	Group B	Group D	.41	.427	.822
	Group C	Group D	-.44	.425	.785

The same phenomenon was observed in listening Cycle 2. There was also an overall statistically significant difference among the four groups, $df = 3$, $F = 12.009$, $p = .000$ (see Table 2 in Appendix E for the ANOVA table of listening comprehension scores in Cycle 2). A post hoc Scheffe test (Table 41) also shows that Group A scored significantly lower than the other three groups. Again, the differences among Groups

B, C and D were not statistically significant.

Table 41. Scheffe Test of Differences in Listening Comprehension Scores among the Four Groups in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Listening comprehension scores 2	Group A	Group B	-1.93(*)	.380	.000
	Group A	Group C	-1.32(*)	.373	.007
	Group A	Group D	-2.06(*)	.389	.000
	Group B	Group C	.61	.371	.444
	Group B	Group D	-.13	.387	.991
	Group C	Group D	-.74	.381	.294

5.3.2 Results for Incidental Vocabulary Acquisition

The descriptive statistics for vocabulary post-tests from the two listening cycles are shown separately in Table 42 and Table 46. Scores are presented for each instructional group and each vocabulary sub-test (i.e. production, form and reception), and also for both the immediate and delayed post-tests of each listening cycle.

Twenty words (with ten words for each cycle of listening tasks) were originally designated as potential target items of the study. It was anticipated that the participants would not know these target words initially. To establish this was in fact the case, the Vocabulary Knowledge Test (as a selection test) was administrated before Cycle 1 listening commenced. All the participants were asked to self-report their knowledge on 40 English words which included the 20 target words, some distracter words and a number of basic words likely to be already known by the participants. Results of the self-reports showed that two designated words in Cycle 1 were already known by more than 20% of the participants and thus were eliminated from the dataset, which reduced the total target number of words for Cycle 1 from 10 to 8. However, the total number of target words for Cycle 2 remained 10. For the sake of inter-cycle comparison, both raw scores and percentages are shown in Tables 42 and 46.

Table 42. Descriptive Statistics for Vocabulary Post-tests of Cycle 1

Group	Test	Immediate			Delayed		
		M	SD	Range	M	SD	Range
A	Production	0 (0%)	0.000	0-0 (0-0%)	0.04 (0.56%)	0.208	0-1 (0-12.5%)
(N=44)	Form	2.11 (26.39%)	1.369	0-5 (0-62.5%)	2.6 (32.5%)	1.372	0-5 (0-62.5%)
	Reception	3.47 (43.33%)	1.804	0-7 (0-87.5%)	3.42 (42.78%)	1.948	0-7 (0-87.5%)
B	Production	0.11 (1.42%)	0.321	0-1 (0-12.5%)	0.11 (1.42%)	0.493	0-3 (0-37.5%)
(N=43)	Form	2.95 (36.93%)	1.446	0-5 (0-62.5%)	3.14 (39.20%)	1.622	0-8 (0-100%)
	Reception	4.32 (53.98%)	1.537	2-8 (25-100%)	3.89 (48.58%)	1.603	0-7 (0-87.5%)
C	Production	0.2 (2.56%)	0.509	0-2 (0-25%)	0.13 (1.67%)	0.405	0-2 (0-25%)
(N=45)	Form	2.64 (33.06%)	1.448	0-7 (0-87.5%)	2.69 (33.61%)	1.635	0-6 (0-75%)
	Reception	4.4 (55%)	1.814	0-7 (0-87.5%)	3.56 (44.44%)	1.972	0-8 (0-100%)
D	Production	0.27 (3.35%)	0.672	0-3 (0-37.5%)	0.28 (3.44%)	0.599	0-2 (0-25%)
(N=40)	Form	3.12 (39.02%)	1.778	0-8 (0-100%)	3.33 (41.56%)	1.953	0-7 (0-87.5%)
	Reception	4.12 (51.52%)	1.778	1-8 (12.5-100%)	3.75 (46.88%)	1.765	0-8 (0-100%)
Whole Sample	Production	0.14 (1.80%)	0.452	0-3 (0-37.5%)	0.14 (1.72%)	0.448	0-3 (0-37.5%)
	Form	2.70 (33.71%)	1.548	0-8 (0-100%)	2.93 (36.57%)	1.662	0-8 (0-100%)
(N=172)	Reception	4.07 (50.93%)	1.762	0-8 (0-100%)	3.65 (45.62%)	1.824	0-8 (0-100%)

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; M = mean; SD = standard deviation

As can be seen from Table 42, the maximum mean score for Cycle 1 is 8 (i.e. 100% correct). The range in scores was considerable (0-8/0-100%) and the groups varied in the mean scores for different sub-tests (0-4.4/0-55%), indicating substantial

variance in the sample as a whole. Also, all the means of the different sub-tests for Groups B, C, and D were clearly higher than those of Group A.

In Cycle 1, ANOVA realized a statistically significant difference among the four groups in all the Immediate Tests — Production Test, $df = 3$, $F = 2.979$, $p <. 05$; Form Test, $df = 3$, $F = 3.774$, $p <. 05$, and Reception Test, $df = 3$, $F = 2.662$, $p =. 05$ (see Table 3 in Appendix E for the ANOVA table of vocabulary acquisition under different listening conditions in Cycle 1). Post hoc Scheffe tests (as shown in Tables 43, 44 and 45) found Group A scored significantly lower than Group D in the Form Test ($p =. 025$), and there was a strong tendency toward significance for the difference between Group A and Group D in the Production Test ($p =. 054$). Nevertheless, the differences among the other groups were not statistically significant (see Tables 4, 5 and 6 in Appendix E for the full tables of Scheffe tests of Production, Form and Reception Test Scores in Cycle 1).

Table 43. Scheffe Test of Production Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Immediate test scores	Group A	Group B	-.11	.094	.694
	Group A	Group C	-.20	.094	.199
	Group A	Group D	-.27	.096	.054
	Group B	Group C	-.09	.095	.821
	Group B	Group D	-.15	.097	.466
	Group C	Group D	-.06	.097	.933

Table 44. Scheffe Test of Form Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Immediate form test scores	Group A	Group B	-.84	.321	.078
	Group A	Group C	-.53	.319	.426
	Group A	Group D	-1.01(*)	.326	.025
	Group B	Group C	.31	.321	.817
	Group B	Group D	-.17	.328	.967
	Group C	Group D	-.48	.326	.545

Table 45. Scheffe Test of Reception Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Immediate test scores	Group A	Group B	-.85	.368	.152
	Group A	Group C	-.93	.366	.094
	Group A	Group D	-.66	.375	.386
	Group B	Group C	-.08	.368	.997
	Group B	Group D	.20	.377	.965
	Group C	Group D	.28	.375	.908

Table 46. Descriptive Statistics for Vocabulary Post-tests of Cycle 2

Group	Test	Immediate			Delayed		
		M	SD	Range	M	SD	Range
A	Production	0.07		0-2	0.02		0-1
		(0.67%)	0.33	(0-20%)	(0.22%)	0.149	(0-10%)
(N=44)	Form	2.47		0-5	2.4		0-7
		(24.67%)	1.618	(0-50%)	(24.00%)	2.157	(0-70%)
	Reception	3.27		1-7	2.78		0-6
		(32.67%)	1.372	(10-70%)	(27.78%)	1.491	(0-60%)
B	Production	0.05		0-1	0.02		0-1
		(0.45%)	0.211	(0-10%)	(0.23%)	0.151	(0-10%)
(N=43)	Form	2.74		0-7	3.09		0-8
		(27.44%)	1.840	(0-70%)	(30.93%)	1.525	(0-80%)
	Reception	3.67		0-9	3.14		0-8
		(36.74%)	1.782	(0-90%)	(31.40%)	1.641	(0-80%)
C	Production	0		0-0	0.07		0-2
		(0%)	0.000	(0-0%)	(0.65%)	0.327	(0-20%)
(N=45)	Form	2.52		0-5	2.91		1-7
		(25.22%)	1.225	(0-50%)	(29.13%)	1.561	(10-70%)
	Reception	3.02		0-8	2.85		0-6
		(30.22%)	1.782	(0-80%)	(28.48%)	1.549	(0-60%)
D	Production	0.03		0-1	0.08		0-1
		(0.26%)	0.160	(0-10%)	(0.75%)	0.267	(0-10%)
(N=40)	Form	3.36		1-7	3.35		0-7
		(33.59%)	1.495	(10-70%)	(33.5%)	1.929	(0-70%)
	Reception	3.95		0-6	3.38		1-7
		(39.49%)	1.621	(0-60%)	(33.75%)	1.480	(10-70%)
Whole	Production	0.03		0-2	0.05		0-2
Sample		(0.34%)	0.212	(0-20%)	(0.46%)	0.235	(0-20%)
	Form	2.75		0-7	2.93		0-8
(N=172)		(27.51%)	1.582	(0-70%)	(29.25%)	1.828	(0-80%)
	Reception	3.46		0-9	3.02		0-8
		(34.57%)	1.672	(0-90%)	(30.23%)	1.547	(0-80%)

As shown in Table 46, the maximum mean score for Cycle 2 is 9 out of a total of 10. The range in scores was considerable (0-9/0-90%) and the groups varied in mean scores for the different sub-tests (0-3.95/0-39.49%), which, as in Cycle 1, indicates substantial variance in the sample as a whole.

In Cycle 2, ANOVA realized statistically significant differences among the four groups in the Immediate Form and Reception Tests. Form Test, $df = 3$, $F = 2.814$, $p <. 05$, and Reception Test, $df = 3$, $F = 2.676$, $p <. 05$ (see Table 7 in Appendix E for the ANOVA table of vocabulary acquisition under different listening conditions in Cycle 2). However, in the post hoc Scheffe tests (as shown in Tables 47 and 48) no difference between any two groups was found to be statistically significant (see Tables 8, 9 and 10 in Appendix E for the full tables of Scheffe tests of Production, Form and Reception Test Scores in Cycle 2).

Table 47. Scheffe Test of Form Test Scores in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Immediate test scores	Group A	Group B	-.28	.332	.873
	Group A	Group C	-.06	.327	.999
	Group A	Group D	-.89	.341	.081
	Group B	Group C	.22	.330	.929
	Group B	Group D	-.61	.344	.367
	Group C	Group D	-.84	.339	.111

Table 48. Scheffe Test of Reception Test Scores in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.
Immediate test scores	Group A	Group B	-.41	.351	.719
	Group A	Group C	.24	.346	.918
	Group A	Group D	-.68	.361	.314
	Group B	Group C	.65	.350	.326
	Group B	Group D	-.27	.364	.904
	Group C	Group D	-.93	.359	.087

5.3.3 Summary of the Results for Research Question One

Overall the groups that had had the opportunity to listen three times outscored the group that listened only once in both listening comprehension and vocabulary acquisition. However, among the three-time listening groups, no significant group differences were observed, and the one-time listening group was only found to score significantly lower than Group D (i.e. inferencing training plus three-time listening) in the case of one of the post-tests (Immediate Form Test in Cycle 1).

5.4 Results for Research Question Two

Another aim of the research reported in this chapter is to examine the relationship between the learners' listening comprehension and their incidental acquisition of new vocabulary. This section will examine to what extent the learners' listening comprehension scores were correlated with their incidental vocabulary acquisition scores.

Given that the groups differed significantly in terms of both listening comprehension and vocabulary acquisition scores, the correlations reported below will examine the relationship between each group's listening comprehension scores and their vocabulary acquisition scores in each sub-test as well as the correlations for the whole sample. In addition, as explained earlier, it will be necessary to report correlations for Cycle 1 and Cycle 2 separately.

5.4.1 Correlations between Listening Comprehension (LC) and Incidental Vocabulary Acquisition (IVA) for Cycle 1

To investigate the relationship between the learners' listening comprehension and incidental vocabulary acquisition for Cycle 1, the participants' listening comprehension and vocabulary acquisition scores were correlated. The results are reported in Table 49.

Table 49. Correlations between LC and IVA for Cycle 1

Listening Comprehension		Vocabulary Acquisition					
		Form		Reception		Production	
		Imm	Del	Imm	Del	Imm	Del
A (N=44)	Correlation	-.067	-.100	-.130	-.060	.(a)	.439(**)
	Sig.	.660	.513	.394	.698	.	.003
B (N=43)	Correlation	.405(**)	.175	.121	.213	.297	.075
	Sig.	.006	.257	.435	.165	.050	.627
C (N=45)	Correlation	-.046	.248	.210	.269	.260	.224
	Sig.	.765	.104	.166	.077	.088	.144
D (N=40)	Correlation	.252	.214	.252	.381(*)	.146	.271
	Sig.	.112	.185	.112	.015	.361	.090
Whole Sample (N=172)	Correlation	.214(**)	.191(*)	.192(*)	.202(**)	.238(**)	.236(**)
	Sig.	.004	.012	.011	.008	.002	.002

Note. Group A = listening one time; Group B = listening three times; Group D = inferencing training + listening three times; PE = Planning-Evaluation; PS = Problem-Solving; Imm = immediate post-tests; Del = delayed post-tests; *$p < .05$; **$p < .01$; a = cannot be computed because at least one of the variables is constant.

For the whole sample, significant correlations were witnessed between listening comprehension and all six vocabulary sub-tests. For the immediate form test ($r = .214$), delayed reception test ($r = .202$) and both immediate and delayed production tests ($r = .238$; $r = .236$), the correlations were statistically significant at the 0.01 level, with a 99% degree of confidence. For the delayed form test ($r = .191$) and immediate reception test ($r = .192$), the correlations were statistically significant at the 0.05 level, with a 95% degree of confidence.

For Group A, listening comprehension was significantly correlated with the delayed production test ($r = .439$). For Group B, listening comprehension was significantly correlated with the immediate form test ($r = .405$). The correlations were statistically significant at the 0.01 level, with a 99% degree of confidence. For Group D, listening comprehension was significantly correlated with the delayed reception test ($r = .381$). The correlation was statistically significant at the 0.05 level, with a 95% degree of confidence.

5.4.2 Correlations between Listening Comprehension (LC) and Incidental Vocabulary Acquisition (IVA) for Cycle 2

To investigate the relationship between the learners' listening comprehension and incidental vocabulary acquisition for Cycle 2, the participants' listening comprehension and vocabulary acquisition scores for this cycle were correlated and the results were presented in Table 50.

Table 50. Correlations between LC and IVA for Cycle 2

Listening Comprehension		Vocabulary Acquisition					
		Form		Reception		Production	
		Imm	Del	Imm	Del	Imm	Del
A (N=44)	Correlation	-.139	.206	.522(**)	.425(**)	-.006	.(a)
	Sig.	.380	.190	.000	.005	.969	.
B (N=43)	Correlation	.146	.090	.416(**)	.180	.240	.167
	Sig.	.351	.570	.006	.253	.122	.283
C (N=45)	Correlation	.059	.038	.141	.271	.(a)	.072
	Sig.	.698	.804	.349	.068	.	.636
D (N=40)	Correlation	.185	.203	.308	.195	.199	.292
	Sig.	.260	.216	.057	.234	.223	.072
Whole Sample (N=172)	Correlation	.122	.213(**)	.345(**)	.288(**)	.131	.154(*)
	Sig.	.114	.005	.000	.000	.088	.045

Note. Group A = listening one time; Group B = listening three times; Group D = inferencing training + listening three times; PE = Planning-Evaluation; PS = Problem-Solving; Imm = immediate post-tests; Del = delayed post-tests; *p < .05; **p < .01; a = cannot be computed because at least one of the variables is constant.

For the whole sample, significant correlations were witnessed between listening comprehension and four out of the six vocabulary sub-tests. For the delayed form test (r = .213), and both immediate and delayed reception tests (r = .345; r = .288), the correlations were statistically significant at the 0.01 level, with a 99% degree of confidence. For the delayed production test (r = .154), the correlation was statistically significant at the 0.05 level, with a 95% degree of confidence.

For Group A, listening comprehension was significantly correlated with both immediate and delayed reception tests (r = .522; r = .425). For Group B, listening

comprehension was also significantly correlated with the immediate reception test (*r* = .416). The correlations were statistically significant at the 0.01 level, with a 99% degree of confidence.

5.5 Discussion of the Results

5.5.1 Effects of Different Listening Conditions on Listening Comprehension

The research question concerned the effect of different listening conditions on learners' listening comprehension. The results of the study indicate that, by averaging the comprehension scores from the two listening cycles, comprehension occurred in all four listening conditions. Though learners in the one-time listening group had a poor mean comprehension score of 45%, the mean scores of those in the three-time listening groups all achieved more than 60%, specifically Group B gained 75%, Group C 63%, and Group D 69%. These results suggest that the listening tasks designed for the study can lead to fair level of comprehension even when they involve unfamiliar words. Some learners could still achieve a score of almost 50% when they listened only one time. Not surprisingly, the participants who listened three times outperformed those who listened only once. Listening three times equips listeners with abundant repetition of information and enough time for processing and checking the information and thus facilitates comprehension.

Among the three-time listening groups, no significant group differences in comprehension were found. Groups C and D (training plus listening three times) showed no comprehension advantage over Group B (listening three times with no training). Instead, Group C had the lowest comprehension scores in both listening cycles within the three-time-listening groups. Thus a conclusion can be drawn that pre-listening schema-raising and metacognitive strategy (inferencing) training resulted in no gain in comprehension in comparison to simply listening three times.

The comprehension score distribution of each group in the two listening cycles is

listed in Table 51. It is not difficult to see that some individual learners of Group A reached 10 (the full mark) in Cycle 1, and in Cycle 2 also equaled the best scores of Group D and were only 1 mark lower than the highest of Group B and Group C. This indicates that though listening three times benefits the majority of learners, there was not much difference between listening one time and listening three times for those learners in Group A with advanced listening proficiency.

Table 51. Listening Score Distribution of Each Group in the Two Listening Cycles

	Cycle 1					Cycle 2				
	0-4	5-7	8	9	10	0-4	5-7	8	9	10
Group A (N=44)	23	15	2	2	2	25	18	1	0	0
Group B (N=43)	1	12	10	11	9	9	26	7	1	0
Group C (N=45)	7	11	12	9	6	11	28	5	1	0
Group D (N=40)	2	14	11	8	5	7	15	8	0	0

5.5.2 Effects of Different Listening Conditions on Incidental Vocabulary Acquisition

The research question in this chapter also asked about the effect of different listening conditions on learners' vocabulary acquisition. The post-test scores from the two listening cycles were averaged to give a clearer picture of the participants' vocabulary acquisition. Table 52 lists the percentage of each group's vocabulary scores.

As Table 52 shows, the learners in all the four listening conditions demonstrated vocabulary acquisition, especially in terms of receptive and form knowledge. However, it should be noted that vocabulary acquisition was under 50% in every case and in the case of production the scores were very low.

Table 52. Vocabulary Acquisition of Each Group in Terms of Percentage

Group	Production		Form		Reception	
	Immediate	Delayed	Immediate	Delayed	Immediate	Delayed
A (N=44)	0.3%	0.4%	25.5%	28.3%	38%	35.3%
B (N=43)	0.9%	0.8%	32.2%	35.1%	45.4%	40%
C (N=45)	1.3%	1.2%	29.1%	31.4%	42.6%	36.5%
D (N=40)	1.8%	2.1%	36.3%	37.6%	45.5%	40.4%

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times

The low production scores are not surprising given that the learners were only exposed to the target items a limited number of times (only once in the case of Group A) and that what was being measured was incidental rather than intentional learning. As Nation (2001, p. 28) pointed out "productive learning is more difficult because it requires extra learning of new spoken or written output patterns. If productive use is needed, there must be productive learning." However, the exposure was sufficient to achieve a degree of receptive ability, which precedes productive ability. That the participants who listened three times outperformed their peers who listened only once can be explained by the fact that the former were exposed to more input and had ample time to process the listening texts where the new vocabulary items were embedded. Time-on-task does seem to have been a factor. The learners in Groups B, C and D were given multiple opportunities to hear the new vocabulary items, which may have helped them develop auditory images of the new items. The learners in these groups enjoyed a considerable time advantage over the learners in Group A and clearly outperformed them in vocabulary acquisition. In short, the results show that the greater the input, the more vocabulary acquisition there was.

Though comprehending input does not guarantee acquisition of productive knowledge of new words, it can facilitate the acquisition of receptive knowledge. This is especially true where form acquisition is concerned, as there is clear evidence that the participants were able to better recognise the target words. The vocabulary form

test required the learners to select the correct word from a number of written choices. To do this they must have been able to construct a phonological-graphological mapping of the target words. This shows that the exposure to words orally can assist their retention and also their subsequent recognition in written form.

There is some evidence that the inferencing training before three-time listening group (Group D) experienced the most beneficial listening condition. This group scored significantly higher than the one-time listening group (Group A) in the case of the immediate form post-test in Cycle 1. On the other hand, though the other two groups which listened three times (Groups B and C) also outperformed the one-time listening group in vocabulary acquisition in all the post-tests, no statistically significant advantage was found. The finding that the inferencing strategy training was especially facilitative of vocabulary acquisition (especially in terms of recognition of word form) can be explained by the fact that the repetition of the listening texts in which the target words were embedded provided the participants in Group D with sufficient exposure to the target items while the five-minute strategy training helped them to attend to the form of these items.

Where acquisition of the meaning of the target words is concerned, the following two examples (two original sentences extracted from the listening texts) illustrate how the linguistic contexts may have helped the learners in Group D to infer the meanings of the unknown words. The linguistic contexts provide clear clues that would have enabled the students to make use of their inferencing training.

Example 1: We could sell our own computers both overseas in the international market and at home in the **domestic** market.
Example 2: My address will change when I graduate. So I don't have a **permanent** address right now except the university.

The five-minute strategy training may have encouraged the learners in Group D to make an attempt to guess the unfamiliar words (such as the two target words in the examples above) when they encountered them. It can be hypothesized that they

rehearsed the words mentally as they listened and this helped to familiarise them with the form of the words. The other two groups who listened to the texts three times may have been less inclined to employ inferencing strategies and focused more on simply trying to understand the general content of the texts in order to complete the listening tasks and thus attended less to the form of the words. Where incidental vocabulary acquisition is concerned, then, inferencing training does appear to have some effect.

5.5.3 Relationship between the Learners' Listening Comprehension and Incidental Vocabulary Acquisition

In the discussion that follows, I will not attempt to explain each significant correlation but instead focus on the patterns of relationships between listening comprehension and incidental vocabulary acquisition.

For the whole sample, 10 out of a possible 12 correlations (6 sub-tests X 2 cycles) reached the level of statistical significance. Therefore, it can be concluded that by and large, those learners who were successful in carrying out the listening tasks were also successful in incidentally acquiring the target words embedded in the listening text. The obvious explanation for this is that the learners needed to process the target words in order to complete the tasks. In other words, the design of the tasks induced attention to the words. However, the correlations were all very moderate (i.e. the shared variance between listening comprehension scores only exceeded 10% in one case). Overall, then, listening comprehension was only weakly related to vocabulary acquisition.

Very few of the correlations for the different groups reached statistical significance. In Cycle 1 listening comprehension was related to delayed productive knowledge of the target items in Group A, to immediate knowledge of form in Group B and to delayed receptive knowledge in Group D. In Cycle 2, listening comprehension was related to both immediate and delayed receptive vocabulary scores in Group A. There was only one other significant correlation in Cycle 2 (i.e. for immediate receptive knowledge in Group B). In other words, the relationship between

listening comprehension and vocabulary acquisition was not influenced at all by schema-raising and only in a very limited way by inferencing training.

5.6 Conclusion

The key findings of this study are:

(a) Three-time listening resulted in better listening comprehension than one-time listening, but there was no additional benefit for either schema raising or inferencing training. Repetition of the information provided enough time for processing and checking the information and facilitated listening comprehension.

(b) Overall the treatments resulted in relatively low levels of vocabulary acquisition. A greater effect was evident on the acquisition of lexical form and on receptive knowledge than on production. The low levels of vocabulary acquisition are not surprising, given that the learners were exposed to the target items only through listening and that what was being measured was incidental rather than intentional learning. It is also not surprising that the listening activities benefited receptive knowledge and form more than production as receptive knowledge and that recognition of form precedes productive knowledge of vocabulary.

(c) There were few group differences regarding vocabulary acquisition. In Cycle 1 inferencing training benefited immediate production of the target items and also acquisition of the form of the target items when compared to the one-time listening condition. However, no other group differences reached statistical significance. Inferencing training plus the opportunity to listen three times may have helped the students to guess the unfamiliar words and thus aided acquisition. The three-time listening group and the schema-raising group did not acquire more words than the one-time listening group, possibly because they focused more on the general content of the texts in order to complete the listening tasks rather than the individual words.

(d) Listening comprehension was only found to be significantly related to vocabulary acquisition in both cycles for the whole sample but the correlations were

generally weak (i.e. the shared variance ranged only from a minimum of 1.5% and a maximum of 12%). When the relationship between listening comprehension and vocabulary acquisition for the individual groups was investigated, very few significant correlations were found in either cycle. The weak relationship between listening comprehension and vocabulary acquisition can be explained by the fact that listening-for-comprehension and listening-to-learn involve different mental processes (Faerch and Kasper, 1986).

Chapter Six

Results — the Relationships between Learners' Metacognitive Listening Awareness and Their Listening Comprehension and Incidental Vocabulary Acquisition

6.1 Introduction

One of the aims of the research reported in this thesis is to examine the relationships between learners' metacognitive listening awareness and their listening comprehension and their incidental acquisition of new vocabulary. This chapter will consider the results relating to this aim.

The key variables to be examined in this chapter are:

a) Metacognitive listening awareness

b) Listening comprehension

c) Vocabulary acquisition

Except for the Metacognitive Awareness Listening Questionnaire, the instruments and procedures used to measure these variables were described in detail in Chapter 4 (Methodology) and the previous chapter. To facilitate processing of the results reported below, Metacognitive Listening Awareness is briefly described here again.

The learners' metacognitive listening awareness was measured by means of Vandergrift *et al.*'s (2006) Metacognitive Awareness Listening Questionnaire (the MALQ), which consists of 21 items designed to measure five aspects of metacognitive listening awareness as:

1. Planning-Evaluation (strategies learners use to prepare themselves for listening and evaluate the results of their listening efforts);
2. Directed-Attention (strategies learners use to concentrate and to stay on task);
3. Person Knowledge (learners' perceptions concerning the difficulty presented by L2 listening and their self-efficacy in L2 listening);
4. Mental Translation (online mental translation strategies);

and

5. Problem-Solving (strategies learners use to guess at what they do not understand [inference] and to monitor these inferences).

The MALQ has a 6-point scale assessment (1-6, from strongly disagree to strongly agree), and the learners' metacognitive listening awareness is indicated by the number on the scale they chose from the questionnaire.

As the descriptive data of listening comprehension and vocabulary acquisition were reported in the previous chapter, only the descriptive data for metacognitive listening awareness will be presented in this chapter. The results for Research Questions Three and Four follow. There is then a discussion of the results.

6.2 Results of the Metacognitive Awareness Listening Questionnaire

Table 53. Pearson Correlation of MALQ for Cycles 1 and 2 (whole sample)

C1 vs. C2	N	Correlation	Sig.
Metacognitive Awareness Listening Questionnaire	172	.652(**)	.000

Note. C = cycle; $^{**}p < .01$.

In order to establish the reliability of the MALQ, the scores on the two administrations of the questionnaire (i.e. before Cycle 1 and before Cycle 2) were correlated. Table 53 lists the Pearson Product Moment Correlation of the participants' total scores on the Metacognitive Awareness Listening Questionnaire at the two times of administrations. The correlation (r = .652), although statistically significant, represents a relatively low shared variance, i.e., 43%. For this reason it was decided to use the scores obtained from the two separate administrations of the MALQ for the analyses of the two cycles.

6.2.1 Descriptive Statistics for Metacognitive Listening Awareness for Cycle 1

The descriptive statistics for metacognitive listening awareness for Cycle 1 are

shown in Table 54. Scores are presented for each instructional group (i.e. Groups A to D) and for the groups as a whole, as well as for each aspect of Vandergrift's metacognitive listening awareness construct and for total metacognitive listening awareness scores. As can be seen from the table, the possible maximum mean score for each aspect is 6.0, and all the groups scored close to a mean of 4.0 (the mean for the whole sample was 3.96). It should be noted that the range in scores was considerable (1.00-6.00), indicating substantial variance in the sample as a whole.

Table 54. Descriptive Statistics for Metacognitive Listening Awareness for Cycle 1

		PE	DA	PK	MT	PS	Total
Group A	M	4.00	4.66	3.34	3.65	4.66	4.06
(N=44)	SD	0.67	0.81	1.35	0.80	0.71	0.53
	Range	2.40-5.80	3.25-6.00	1.00-5.67	2.00-5.33	3.17-6.00	2.88-5.54
Group B	M	3.78	4.69	3.44	3.74	4.41	4.01
(N=43)	SD	0.64	0.74	1.10	1.10	0.63	0.40
	Range	2.60-5.60	2.75-6.00	1.00-5.67	1.00-6.00	3.17-6.00	3.11-5.45
Group C	M	3.61	4.34	3.41	3.67	4.34	3.88
(N=45)	SD	0.84	0.92	1.14	0.90	0.81	0.46
	Range	2.00-5.20	2.00-6.00	1.00-6.00	1.67-6.00	2.67-6.00	2.95-5.02
Group D	M	3.66	4.40	3.24	3.79	4.29	3.88
(N=40)	SD	0.97	0.92	1.19	0.96	0.81	0.56
	Range	1.40-5.60	2.00-5.75	1.00-6.00	1.00-5.00	2.00-6.00	2.51-5.19
Whole	M	3.76	4.52	3.36	3.71	4.43	3.96
Sample	SD	0.79	0.85	1.19	0.94	0.75	0.49
(N=172)	Range	1.40-5.80	2.00-6.00	1.00-6.00	1.00-6.00	2.00-6.00	2.51-5.54

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving; M = mean; SD = standard deviation.

To establish whether there were any significant group differences in terms of each aspect of metacognitive listening awareness in Cycle 1, a two-way ANOVA was computed (see Table 1 in Appendix F). The groups were not found to be significantly different in any aspect of metacognitive listening awareness ($p > 0.1$ in all conditions).

6.2.2 Descriptive Statistics for Metacognitive Listening Awareness for Cycle 2

The descriptive statistics for metacognitive listening awareness for Cycle 2 are shown in Table 55. Scores are presented for each instructional group and for the groups as a whole, as well as for each aspect of Vandergrift *et al.*'s (2006) metacognitive listening awareness construct and for total metacognitive listening awareness scores. As can be seen from the table, the possible maximum mean score for each aspect is 6.0, and all the groups scored close to a mean of 4.0 (the mean for the whole sample was 3.90). It should be noted that the range in scores was considerable (1.00-6.00), indicating substantial variance in the sample as a whole.

To establish whether there were any significant group differences in terms of each aspect of metacognitive listening awareness in Cycle 2, a two-way ANOVA was computed (see Table 2 in Appendix F). The groups were not found to be significantly different in any aspect of metacognitive listening awareness ($p > 0.1$ in all conditions).

Table 55. Descriptive Statistics for Metacognitive Listening Awareness for Cycle 2

		PE	DA	PK	MT	PS	Total
Group A	M	3.89	4.59	3.34	3.49	4.16	3.89
(N=44)	SD	0.86	0.89	1.11	0.94	0.73	0.59
	Range	1.40-6.00	2.25-6.00	1.00-5.67	1.00-6.00	2.83-6.00	2.61-5.35
Group B	M	4.03	4.44	3.46	3.60	4.14	3.93
(N=43)	SD	0.69	0.90	1.15	0.90	0.79	0.49
	Range	2.40-5.60	2.00-6.00	1.00-5.67	1.00-5.33	2.50-6.00	2.86-5.10
Group C	M	4.04	4.39	3.41	3.51	4.16	3.90
(N=45)	SD	0.84	0.83	1.20	1.10	0.72	0.54
	Range	2.60-6.00	2.00-6.00	1.00-6.00	1.00-6.00	2.83-5.50	2.56-5.25
Group D	M	3.88	4.31	3.38	3.71	4.06	3.87
(N=40)	SD	0.75	0.84	1.20	0.93	0.84	0.51
	Range	2.20-5.40	2.00-6.00	1.33-6.00	1.67-6.00	2.33-5.83	2.84-5.10
Whole	M	3.96	4.44	3.40	3.57	4.13	3.90
Sample	SD	0.79	0.86	1.16	0.97	0.76	0.53
(N=172)	Range	1.40-6.00	2.00-6.00	1.00-6.00	1.00-6.00	2.33-6.00	2.56-5.35

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + three times; Group D = inferencing training + three times; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving; M = mean; SD = standard deviation.

6.3 Results

In this section the results for Research Question Three of the study will be presented. Research Question Three asked: What is the relationship between learners' metacognitive listening awareness and their listening comprehension under the different listening conditions:

a. when they listened to some texts for only one time (Group A);

b. when they listened to the texts three times (Group B);

c. when they engaged in schema-raising training before listening to the texts three times (Group C);

and

d. when they engaged in inferencing training before listening to the texts three times (Group D)?

Given that the group scores for listening comprehension differed significantly, the correlations reported below will examine the relationship between each group's metacognitive awareness scores and their listening comprehension scores. In addition, as explained earlier, it will be necessary to report correlations for Cycle 1 and Cycle 2 separately.

It should be noted that only significant correlations are reported here. The full correlation matrix can be found in Appendix F.

6.3.1 The Relationship between Metacognitive Listening Awareness (MA) and Listening Comprehension (LC)

6.3.1.1 The Relationship between Learners' MA and LC for Cycle 1

To investigate the relationship between learners' metacognitive listening awareness and their listening comprehension for Cycle 1, the participants'

metacognitive listening awareness scores and their listening comprehension scores for this cycle (as reported in the previous chapter) were correlated. Table 56 lists the significant Pearson Product Moment Correlations obtained from this analysis. (See Table 3 in Appendix F for the full correlation matrix of the participants' metacognitive listening awareness and their listening comprehension for Cycle 1.)

No overall significant relationship between the metacognitive awareness of the whole sample and listening comprehension (r = .043, p = .571) was found. Nevertheless, mental translation awareness in Groups B and C was found to be negatively related to listening comprehension (r = -.326, p = .031 and r = -.315, p = .035). The correlations were statistically significant at the 0.05 level, with a 95% degree of confidence. No other correlations reached the .05 level of significance.

Table 56. Significant Pearson Correlations of the Participants' MA and LC for Cycle 1

Group	Variables	Correlation	Sig.
B (N=43)	MT and LC	-.326(*)	.031
C (N=45)	MT and LC	-.315(*)	.035
Whole Sample (N=172)	MA and LC	.043	.571

Note. Group B = listening three times; Group C = schema raising + listening three times; MT = Mental Translation; MA = Metacognitive Awareness; LC = Listening Comprehension; *p < .05.

6.3.1.2 The Relationship between Learners' MA and LC for Cycle 2

To investigate the relationship between learners' metacognitive listening awareness and their listening comprehension for Cycle 2, the participants' metacognitive listening awareness scores and their listening comprehension scores (as reported in the previous chapter) were correlated. Table 57 lists the significant Pearson Product Moment Correlations obtained for Cycle 2. (See Table 4 in Appendix F for the full correlation matrix of the participants' metacognitive listening awareness and their listening comprehension for Cycle 2.)

Again, no overall significance was found between the metacognitive awareness of the whole sample and listening comprehension (r = .113, p = .143). Nevertheless,

person knowledge awareness in Groups A and B was found to be positively related to their listening comprehension (r = .318, p = .040; r = .337, p = .027), and mental translation awareness in Group C was found to be negatively related to the listening comprehension(r = -.321, p = .029). These correlations were statistically significant at the 0.05 level, with a 95% degree of confidence. No other correlations reached the .05 level of significance.

Table 57. Significant Pearson Correlations of the Participants' MA and LC in Cycle 2

Group	Variables	Correlation	Sig.
A (N=44)	PK and LC	.318(*)	.040
B (N=43)	PK and LC	.337(*)	.027
C (N=45)	MT and LC	-.321(*)	. 029
Whole Sample (N=172)	MA and LC	.113	.143

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; PK = Person Knowledge; MT = Mental Translation; MA = Metacognitive Awareness; LC = Listening Comprehension; *p < .05.

6.3.1.3 Summary of Results of the Relationship between Learners' MA and LC

- For Group A (one-time listening), reported person knowledge was found to be significantly related to listening comprehension in listening Cycle 2.
- For Group B (three-time listening), reported mental translation was found to be negatively related to listening comprehension in Cycle 1 and person knowledge was found to be positively related to listening comprehension in Cycle 2;
- For Group C (schema-raising training before three-time listening), mental translation was found to be negatively related to listening comprehension in both of the two listening cycles.
- For Group D (inferencing training before three-time listening), no significant correlation was found between metacognitive listening awareness and listening comprehension.

In this section the results for Research Question Four of the study will be presented. Research Question Four asked: What is the relationship between learners' metacognitive listening awareness and incidental vocabulary acquisition from listening tasks under the same four conditions as in Research Question Three?

Results are presented here for the three types of vocabulary sub-test (i.e. Form, Reception, and Production tests). The descriptive statistics for each sub-test in the two listening cycles were reported in the previous chapter. First presented in this section are the correlations between metacognitive listening awareness and each vocabulary sub-test scores in each listening cycle. This is followed by a summary of the main findings. It should be noted that again only significant correlations are presented in this section, and the full correlation matrix of each group's metacognitive listening awareness and their vocabulary post-test scores can be found as Tables 5-12 in Appendix F. Given that the group scores for vocabulary tests differed significantly, the correlations reported below will examine the relationship between each group's metacognitive awareness scores and their vocabulary tests scores. In addition, as explained earlier, it will be necessary to report correlations for Cycle 1 and Cycle 2 separately.

6.3.2 The Relationship between MA and IVA (Form)

To investigate the relationship between learners' metacognitive listening awareness and their vocabulary acquisition in terms of form, the participants' metacognitive listening awareness scores and their form post-test scores were correlated. Tables 58 and 59 list the significant Pearson Product Moment Correlations obtained for Cycle 1 and Cycle 2.

In Cycle 1, for Group A (one-time listening), metacognitive awareness of planning-evaluation was negatively related with their immediate form post-test scores (r = -.298). Problem-solving awareness of Group B (three-time listening) was also

found to be positively correlated with the immediate form post-test scores (r = .355). For Group D (inferencing training before three-time listening), problem-solving and planning-evaluation awareness were negatively correlated with their immediate form post-test scores (r = -.342; r = -.314). These correlations were statistically significant at the 0.05 level, with a 95% degree of confidence.

Also for Group D, problem-solving awareness was negatively correlated with the delayed form post-test scores (r = -.434), and the correlation was statistically significant at the 0.01 level, with a 99% degree of confidence.

Table 58. Significant Pearson Correlations of the Participants' MA and IVA (Form) in Cycle 1

Group	Variables	Correlation	Sig.
A (N=44)	PE and Form (Imm)	-.298(*)	.047
B (N=43)	PS and Form (Imm)	.355(*)	.018
D (N=40)	PS and Form (Imm)	-.342(*)	.029
	PE and Form (Imm)	-.314(*)	.046
	PS and Form (Del)	-.434(**)	.005

Note. Group A = listening one time; Group B = listening three times; Group D = inferencing training + listening three times; PE = Planning-Evaluation; PS = Problem-Solving; Imm = immediate post-tests; Del = delayed post-tests; *p < .05; **p < .01.

Table 59. Significant Pearson Correlations of the Participants' MA and IVA (Form) in Cycle 2

Group	Variables	Correlation	Sig.
A (N=44)	PK and Form (Del)	-.395(**)	.007
	PS and Form (Imm)	.450(**)	.002
D (N=40)	PS and Form (Del)	.321(*)	.046

Note. Group A = listening one time; Group D = inferencing training + listening three times; PK = Person Knowledge; PS = Problem-Solving; Imm = immediate post-tests; Del = delayed post-tests; *p < .05; **p < .01.

In Cycle 2, Group A's (one-time listening) person knowledge awareness was found to be negatively correlated with the delayed form test scores (r = -.395), and metacognitive awareness of problem solving was positively correlated with the immediate form post-test scores (r = .450). These correlations were statistically significant at the 0.01 level, with a 99% degree of confidence.

For Group D (inferencing training and three-time listening), problem-solving awareness was found to be correlated with delayed form post-test scores (r = .321). The correlation was statistically significant at the 0.05 level, with a 95% degree of confidence.

6.3.3 The Relationship between MA and IVA (Reception)

To investigate the relationship between learners' metacognitive listening awareness and their vocabulary acquisition in terms of reception, the participants' metacognitive listening awareness scores and their reception post-test scores were correlated. Tables 60 and 61 list the significant Pearson Product Moment Correlations obtained for Cycle 1 and Cycle 2.

Table 60. Significant Pearson Correlations of the Participants' MA and IVA (Reception) in Cycle 1

Group	Variables	Correlation	Sig.
B (N=43)	DA and Reception (Imm)	.368(*)	.014
	MT and Reception (Imm)	-.400(**)	.007
	PS and Reception (Imm)	.529(**)	.000
C (N=45)	DA and Reception (Imm)	.366(*)	.013
D (N=40)	MT and Reception (Imm)	-.403(**)	.009

Note. Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; DA = Directed Attention; MT = Mental Translation; PS = Problem-Solving; Imm = immediate post-tests; *p < .05; **p < .01.

In Cycle 1, directed attention metacognitive awareness was significantly correlated with the immediate reception post-test scores of both Group B (three-time listening) and Group C (schema-raising before three-time listening, r = .368; r = .366), and the correlations were statistically significant at the 0.05 level, with a 95% degree of confidence.

Mental translation was found to be negatively correlated with the immediate reception post-test scores of both Group B and Group D (inferencing training before three-time listening, r = -.400; r = -.403), and the correlations were statistically

significant at the 0.01 level, with a 99% degree of confidence. Also for Group B, problem-solving was positively correlated with the immediate reception post-test (*r* = .529), also at the 0.01 level, a 99% degree of confidence.

Table 61. Significant Pearson Correlations of the Participants' MA and IVA (Reception) in Cycle 2

Group	Variables	Correlation	Sig.
A (N=44)	DA and Reception (Imm)	.452(**)	.002
B (N=43)	PS and Reception (Imm)	.346(*)	.023
	PS and Reception (Del)	.418(**)	.006
	DA and Reception (Del)	.354(*)	.022
D (N=40)	PS and Reception (Imm)	.378(*)	.018
	PK and Reception (Del)	. 417(**)	.008

Note. Group A = listening one time; Group B = listening three times; Group D = inferencing training + listening three times; DA = Directed Attention; PS = Problem-Solving; PK = Person Knowledge; Imm = immediate post-tests; Del = delayed post-tests; *$p < .05$; **$p < .01$.

In Cycle 2, for Group A (one-time listening) directed attention was significantly correlated with the immediate reception post-test scores (*r* = .452). For Group B (three-time listening), problem-solving was significantly correlated with the delayed reception post-test scores (*r* = .418). For Group D (inferencing training before three-time listening), person knowledge was significantly correlated with the delayed reception post-test scores (*r* = .417). These correlations were statistically significant at the 0.01 level, with a 99% degree of confidence.

Also for Group B, problem-solving was significantly correlated with the immediate reception post-test scores (*r* = .346), and directed attention was significantly correlated with the delayed reception post-test scores (*r* = .354). And for Group D, problem-solving was significantly correlated with the immediate reception post-test scores (*r* = .378). These correlations were statistically significant at the 0.05 level, with a 95% degree of confidence.

6.3.4 The Relationship between MA and IVA (Production)

To investigate the relationship between learners' metacognitive listening awareness and their vocabulary acquisition in terms of production, the participants' metacognitive listening awareness scores and their production post-test scores were correlated. Tables 62 and 63 list the significant Pearson Product Moment Correlations obtained for Cycle 1 and Cycle 2.

Table 62. Significant Pearson Correlations of the Participants' MA and IVA (Production) in Cycle 1

Group	Variables	Correlation	Sig.
B (N=43)	PE and Production (Imm)	.350(*)	.020
	PS and Production (Imm)	.366(*)	.015
	PK and Production (Imm)	.336(*)	.026
D (N=40)	MT and Production (Del)	-.391(*)	.013

Note. Group B = listening three times; Group D = inferencing training + listening three times; PE = Planning-Evaluation; PS = Problem-Solving; PK = Person Knowledge; MT = Mental Translation; Imm = immediate post-tests; Del = delayed post-tests; *$p < .05$.

In Cycle 1, the metacognitive awareness of planning-evaluation, problem-solving, and person knowledge of Group B (three-time listening) were found to be significantly related to the immediate production post-test scores ($r = .350$; $r = .366$; $r = .336$). For Group D (inferencing training before three-time listening), mental translation awareness was also found to be negatively correlated with the delayed production post-test ($r = -.391$). These correlations were statistically significant at the 0.05 level, with a 95% degree of confidence.

Table 63. Significant Pearson Correlation of the Participants' MA and IVA (Production) in Cycle 2

Group	Variables	Correlation	Sig.
B (N=43)	PE and Production (Imm)	.377(*)	.013

Note. Group B = listening three times; PE = Planning-Evaluation; Imm = immediate post-tests; *$p < .05$.

In Cycle 2, only the metacognitive awareness of planning-evaluation of Group B

(three-time listening) was significantly correlated with immediate production post-test scores (r = .377). The correlation was significant at the 0.05 level, with a 95% degree of confidence.

6.3.5 Summary of the Main Results of the Relationship between Learners' Metacognitive Awareness and Incidental Vocabulary Acquisition

(a) For Group A (one-time listening), negative correlations were found between the awareness of planning-evaluation strategies and immediate form test scores in Cycle 1 and between the awareness of person knowledge strategies and delayed form test scores in Cycle 2. Also in Cycle 2, positive correlations were found between the awareness of directed attention strategies and immediate reception test scores in Cycle 1 and between the awareness of person knowledge strategies and immediate form test scores.

(b) For Group B (three-time listening), there was a consistent and positive correlation between the reported use of problem solving strategies and the immediate reception test scores in both cycles, and also between planning evaluation strategies and immediate production test scores in both cycles. For this group, there are positive correlations between the reported use of directed attention strategies and scores in the immediate reception test in Cycle 1 and scores in the delayed reception test in Cycle 2. And there are also positive correlations between the reported use of problem solving strategies and the immediate form test and production test scores in Cycle 1 and the delayed reception test scores in Cycle 2. Besides, in Cycle 1, a positive correlation was found between the awareness of person knowledge strategies and immediate production test scores and negative correlation was found between the awareness of mental translation strategies and immediate reception test scores.

(c) For Group C (schema-raising training before three-time listening), the only significant correlation evident was between the reported use of directed attention strategies and the immediate reception test scores in Cycle 1.

(d) For Group D (inferencing training before three-time listening), negative correlations were found between the awareness of problem solving strategies and both immediate and delayed form test scores in Cycle 1, but positive correlations were found between this awareness and delayed form test and immediate reception test scores in Cycle 2. Also in Cycle 1, negative correlations were found between the awareness of mental translation strategies and immediate reception test and delayed production test scores, as well as between the awareness of planning-evaluation strategies and scores in the immediate form test. Also in Cycle 2, a positive correlation was found between the awareness of person knowledge strategies and delayed reception test scores.

6.3.6 Summary of the Main Results for Research Questions Three and Four

In order to present a clearer picture of the results for the two research questions, the significant correlations of each group in terms of the five metacognitive awareness aspects for the two listening cycles are listed in Tables 64 and 65.

Table 64. Summary Table in Terms of Metacognitive Awareness Aspects (Cycle 1)

MA Aspects	LC	IVA					
		Form		Reception		Production	
		Imm	Del	Imm	Del	Imm	Del
PE		A -.298*				B .350*	
		D -.314*					
DA				B .368*			
				C .366*			
PK						B .336*	
MT	B -.326*			B -.400**			D -.391*
	C -.315*			D -.403**			
PS		B .355*	D -.434**	B .529*		B .366*	
		D -.342*					

Note. MA = Metacognitive Awareness; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving; LC = Listening Comprehension; IVA = Incidental Vocabulary Acquisition; Imm = immediate post-tests; Del = delayed post-tests; (Group) A = listening one time; (Group) B = listening three times; (Group) C = schema raising + listening three times; (Group) D = inferencing training + listening three times; *$p < .05$; **$p < .01$.

Table 65. Summary Table in Terms of Metacognitive Awareness Aspects (Cycle 2)

MA Aspects	LC	IVA					
		Form		Reception		Production	
		Imm	Del	Imm	Del	Imm	Del
PE						B .377*	
DA				A .452**	B .354*		
PK	A .318*		A -.395**		D .417**		
	B .337*						
MT	C -.321*						
PS		A .450**	D .321*	B .346*	B .418**		
				D .378*			

Note. MA = Metacognitive Awareness; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving; LC = Listening Comprehension; IVA = Incidental Vocabulary Acquisition; Imm = immediate post-tests; Del = delayed post-tests; (Group) A = listening one time; (Group) B = listening three times; (Group) C = schema raising + listening three times; (Group) D = inferencing training + listening three times; *$p < .05$; **$p < .01$.

6.4 Discussion

6.4.1 Discussion of the Results for Research Question Three

Research Question Three asked: What is the relationship between learners' metacognitive listening awareness and listening comprehension under the four different listening conditions?

The only study that has examined the relationship between learners' reported use of metacognitive awareness strategies and listening comprehension ability is the study carried out by Vandergrift (2003a). In order to compare the results of the present study with those of Vandergrift, a brief summary of the results of Vandergrift's study is reported here (see Chapter Two for a more detailed account of the study).

36 junior high school students studying French as a second language took a listening comprehension test consisting of three short, authentic texts, and were classified as either more skilled or less skilled listeners according to their scores obtained from the test. Think-aloud data from the students were recorded for the three different listening tasks and were transcribed and analyzed using a predefined

taxonomy of listening comprehension strategies (Vandergrift, 1997b). Each coded report of a strategy was tabulated, and a listening strategy profile was created for each student. The results showed that almost all previously identified metacognitive strategies were used by the participants in his study (planning, directed attention, problem solving, etc.). Only evaluation strategies did not appear to be used, which may have been due to the language level of the students under study, as only the more advanced learners reported using these strategies (though even their use of them was minimal). Overall, more skilled listeners used metacognitive strategies more frequently than less skilled listeners, and the difference between the two groups was significant. Also, the more skilled listeners used more problem solving strategies, i.e. they were more likely to verify and correct their comprehension (if necessary) as they were listening. On the other hand, less skilled listeners reported using translation more than the more skilled listeners, a difference that also reached significance.

In order to discuss the results for Research Question Three, it is useful to schematize the differences between the four groups. This is done in Figure 10 below. It shows that Group A differs from the other three groups in that it listened to the text only once. Group B, like Groups C and D, listened three times, but did not receive any listening training. Groups C and D differed in the kind of training they received — Group C received schema-raising training and Group D inferencing training.

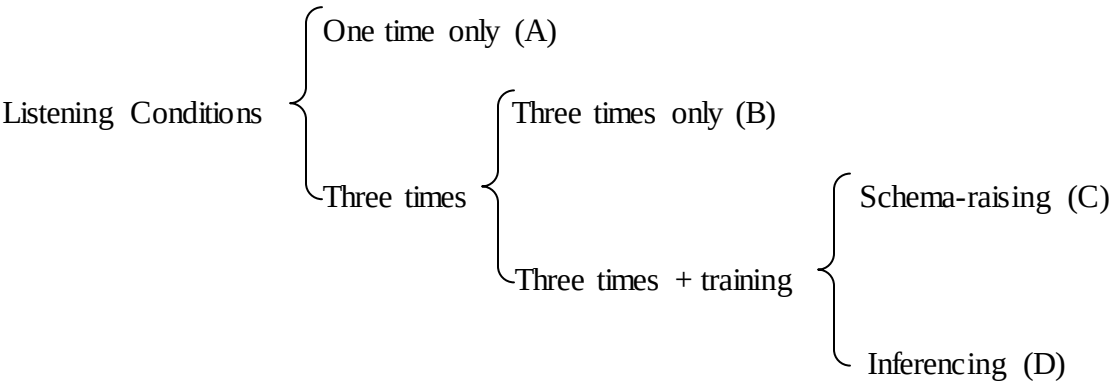


Figure 10. Listening Conditions for the Four Groups

Overall, the correlations between reported use of metacognitive awareness strategies and listening comprehension, as shown from Tables 64 and 65, were on the low side. Only 5 out of a possible of 40 correlations (i.e., 5 aspects x 4 groups x 2

cycles) reached statistical significance in listening comprehension. The maximum variance in the listening comprehension scores accounted for by any one aspect of metacognitive awareness was 11% (.337 for Group B in Cycle 2, as in Table 65). This can be explained by the fact that the MALQ, which measures learners' overall use of metacognitive strategies and can be expected to have an impact over time on their listening comprehension, may not necessarily impact on their performance of specific listening comprehension activities, especially if they are quite challenging for the learners, as was the case in this study.

In order to have a clearer picture of the general pattern of correlations found for Research Question Three, Table 66 is presented.

Table 66. General Pattern of Correlations between MA and LC

Metacognitive Aspect	Cycle 1	Cycle 2
Planning-Evaluation	None	None
Directed Attention	None	None
Person Knowledge	None (Group B close)	Groups A and B
Mental Translation	All Groups negative; Groups B and C significant; Group A near zero	Groups B, C and D negative; Group C significant; Group A positive (NS)
Problem Solving	None	None

Note. MA = Metacognitive Awareness; LC = Listening Comprehension; Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; NS = not significant.

The following points have emerged from Table 66:

(a) Reported use of planning-evaluation, directed attention and problem solving awareness were not related to listening comprehension.

It can be clearly seen from the table that planning-evaluation strategies, directed attention strategies and problem solving strategies were not related to listening comprehension scores. The explanation might lie in the fact that the learners had little opportunity to prepare themselves for the listening task, to evaluate the results of their

listening or to undertake inferencing in the kinds of listening tasks used in this study. In other words, even if students generally had a preference for such strategies they had no real chance to apply them in tasks of such a short duration. This has implications for the testing of listening comprehension as in many standard tests (such as the TOEFL) the listening tasks are also of a very short duration.

(b) Person knowledge was related to listening comprehension scores but only for Groups A and B.

In Cycle 1, the correlation for person knowledge and listening comprehension approached significance (r = .297) in Group B. The correlation for Group A was not significant but was positive (r = .176). Person knowledge awareness was significantly correlated with listening comprehension for both of these groups in Cycle 2. In the case of the other two groups (C and D) no relationship between person knowledge and listening comprehension was evident. What distinguishes Groups A and B from Groups C and D is whether or not they received any kind of listening training. Thus it is possible that, with no training, learners are influenced by their perceptions of the difficulty of second language learning and of their own self-efficacy, but that training compensates for perceived self-efficacy.

(c) Mental translation awareness is negatively related to Groups B, C and D, but not a factor for group A.

In Cycle 1 mental translation awareness was negatively correlated with listening comprehension for all groups. In other words, learners who reported using mental translation in the MALQ were likely to be less successful in carrying out the listening activity.

It should be noted, however, that the relationship between mental translation and listening comprehension varied among the groups. In Cycle 1, the correlations for Groups B and C were significant (r = -.326 and -.315), but for Group A it was near zero (r = -.033). In Cycle 2 mental translation awareness was negatively correlated with listening comprehension for all the three-time listening groups and the

correlation for Group C was significant (r = -.321), but for Group A the correlation, though not significant, became positive (r = .257).

Groups B, C and D all differed from Group A in that they involved listening to the text three times. It can then be summarised that learners in all the three-time listening groups who reported using mental translation in the MALQ were likely to be less successful in carrying out the listening activity. In the case of Group A in Cycle 1 none of the learners might have been able to make use of mental translation even if they had been inclined to do so because they were under pressure to comprehend the text immediately. In Cycle 2, possibly because they were more familiar with the type of listening task, there was a stronger tendency to try to make use of mental translation and this helped them in some limited way.

Overall though, the results show that mental translation did not assist listening comprehension; rather it was related to the listening comprehension of the less successful learners. Translation arguably involves only surface mapping between languages and generally fails to activate conceptual processes (Swaffar, 1988) and thus those learners who used this strategy may have been able to only interact with the text very superficially. Vandergrift (2003a) found that his less skilled listeners reported using mental translation significantly more than the more skilled listeners. O'Bryan and Hegelheimer (2009) also found that the lowest-proficiency students demonstrated an increase in the use of mental translation strategies after a one semester's listening course, a result that matches Vandergrift's (1997b) finding. When they translate on-line, less skilled listeners are incapable of keeping up with the incoming input, and they experience greater difficulty holding meaning in memory, a problem also noted by Goh (2000). To address this problem they resort to mental translation but, as the results of Vandergrift's and this study both show this does not assist their comprehension.

6.4.2 Discussion of the Results for Research Question Four

Research Question Four asked: What is the relationship between learners'

metacognitive awareness and incidental vocabulary acquisition under the four different listening conditions?

In Cycle 1 there were a total of 14 significant correlations out of a total of 120 (i.e., 5 aspects x 4 groups x 6 tests) between different aspects of metacognitive awareness and vocabulary acquisition. In Cycle 2 there were a total of 10 significant correlations (again out of a possible 120). Overall this indicates that the learners' reported awareness of metacognitive strategies was not strongly related to the acquisition of words as a result of performing the listening tasks. In the discussion that follows, I will not attempt to explain each significant correlation but instead focus on the patterns of relationships between the different aspects of metacognitive awareness and incidental vocabulary acquisition.

- Planning-evaluation

There was a positive correlation between Group B's reported use of planning evaluation strategies and their scores in the immediate production test in both Cycles (r = .350 in Cycle 1 and r = .377 in Cycle 2). Planning evaluation was negatively related to Group A's and Group D's scores in the immediate form test in Cycle 1 (r = -.298 and -314 respectively).

Group B differed from Group A in that it listened three times to the listening texts and from Groups C and D in that it received no training. The learners in Group A had little opportunity to either carry out any preparation or to evaluate as they listened, even if they were so inclined. Thus, the treatment condition of this group precluded any effective use of planning evaluation strategies. Indeed, the negative correlation between Group A's planning evaluation and vocabulary form scores in Cycle 1 suggests that the attempt to make use of strategies relating to this aspect of metacognitive awareness may have had a negative effect on vocabulary acquisition.

Groups C and D received strategy training. It is possible that the training that these groups received interfered with the learners' preferred use of strategies. Indeed in the case of Group D, the inferencing training they received is negatively related to their acquisition of form in Cycle 1. Both kinds of training may have had the effect of

focusing the learners on executing the strategies they were trained to use. Neither type of training encouraged the use of planning evaluation strategies. It is hypothesized therefore that for planning evaluation strategies to have an influence on vocabulary acquisition from listening texts, two conditions need to apply: (1) the listening task must ensure adequate opportunity for learners to prepare and to evaluate, and (2) learners must be free to determine what strategies they wish to use in a listening task. These conditions were met only for Group B. Those learners in this group who had reported greater use of planning evaluation strategies demonstrated greater productive control of the target words than those learners who reported less use.

- Directed attention

All the significant correlations for directed attention were positive and they all involved receptive knowledge of the target items. In other words, those learners who reported using strategies to concentrate and stay on task demonstrated a greater ability to work out the meanings of the words they did not know from context and to remember them, especially when completing the immediate post-test.

However, the positive correlations between directed attention and receptive vocabulary knowledge were only evident for Groups A, B and C. No significant correlations were found for Group D. Again, the explanation may lie in the training Group D received. Inferencing training may have led the learners in this group as a whole to direct their attention to understanding the meanings of the words. In other words, the training may have negated the inherent differences in learner's use of directed attention strategies. If this explanation is correct it suggests that inferencing training may encourage even those learners who are not naturally inclined to use directed attention strategies to do so.

One further point is worth making. Directed attention strategies are related to receptive vocabulary learning even when the listening task affords only one opportunity to listen to text. Whether the listening text is repeated or not does not appear to be a factor determining the utility of directed attention strategies. In this respect the results for directed attention are different to those for planning evaluation.

- Person knowledge

Person knowledge refers to the learners' evaluation of the difficulty of listening in an L2 and their perceptions of their own ability. Few significant correlations between person knowledge and vocabulary acquisition were found in this study. One explanation for this is that all the learners, irrespective of how they evaluated their listening comprehension ability, experienced difficulty in acquiring the target words in the kind of demanding listening tasks used in the study.

Group A's person knowledge scores were negatively related to their vocabulary form scores in the delayed test in Cycle 2. Group D's person knowledge scores were positively related to receptive word knowledge also in the delayed test in Cycle 2. In both cases, these significant correlations were only found in the delayed tests. These correlations are difficult to interpret without further research and I will not attempt to do so.

- Mental translation

The significant correlations involving mental translation were all negative. That is, those learners who reported using mental translation strategies were less likely to acquire new words. However, this was only the case for the learners in Groups B and D and only in Cycle 1.

As for comprehension, mental translation does not appear to be an effective strategy. Using the L1 to understand the meanings of unknown words in a listening text does not promote either receptive or productive knowledge of the words. Rather it interferes with vocabulary acquisition. There is plenty of evidence (O'Malley and Chamot, 1990; Watanabe, 1997; Schneider, Healy, & Bourne, 2002; Manyak, 2004) that translation is an effective strategy in intentional vocabulary learning. But this study investigated incidental acquisition of vocabulary. Mental translation may have been ineffective because it is not efficient in the kind of online processing that the listening tasks in this study required. It may interfere with the execution of strategies that are more effective for incidental acquisition in online processing tasks. It is

possible that the learners became aware of this after Cycle 1 and therefore limited their use of mental translation in Cycle 2, where no negative correlations were found.

Mental translation was negatively related to vocabulary acquisition only in Groups B and D. In the case of Group A (one time listening only), the learners might have found it difficult to make use of mental translation even if they had been inclined to do so because they were under pressure to comprehend the text immediately. In the case of Group C (schema-raising), the pre-listening activity may have minimised the necessity for on-line translation. In contrast, Group B was freer to use whatever strategies they were inclined to. The inferencing training of Group D focused learners' attention on vocabulary and may have caused some of them to attempt to use mental translation to compensate for the difficulty they may have experienced in trying to infer the meanings of the words from context.

- Problem solving

This aspect of metacognitive knowledge produced the most correlations (10 in the two cycles out of a total of 24). It was particularly strongly implicated in vocabulary acquisition for Group B (5 positive correlations). Interestingly, problem solving was negatively related to vocabulary acquisition in Group D.

The crucial aspects of Group B's treatment were (1) the opportunity to listen three times and (2) no strategy training. Under such conditions it would seem that those learners who report a high use of inferencing strategies are likely to be successful in incidentally acquiring receptive and productive knowledge of new words. Note that in this treatment condition learners were free to act in accordance with their preferred strategies.

Group D received training in the use of inferencing strategies. The effect of this mediation appears to have been to cause those learners who reported regular use of problem solving strategies to be less successful in remembering the form of the target words. Again then, we see evidence of intervention in learners' natural choice of strategies affecting how they process input for acquisition. Such intervention is designed to enhance their processing ability but it would seem that this is not always

the case. Where Group B (no training) manifested positive correlations between problem solving and vocabulary acquisition, Group D manifested negative correlations in Cycle 1. However, in Cycle 2, the correlations involving Group D are also now positive. Perhaps second time round they were less influenced by the training they received and more inclined to rely on their own preferred strategies.

6.5 Conclusion

The key findings relevant to this research question are:

(a) In general only weak correlations between reported metacognitive listening awareness and listening comprehension and incidental vocabulary acquisition were found. One possible explanation for this is that the learners' reported use of metacognitive strategies did not actually correspond closely to their actual use of them while performing the listening tasks. In order for learners to act on their preferred metacognitive strategies, they may need time to implement them. It is also possible that any relationship between reported preferred strategy use and listening comprehension will only become evident over time and may not be evident in particular short listening tasks.

(b) One of the clearest findings was the negative relationship between reported use of mental translation and listening comprehension and incidental vocabulary acquisition. Though mental translation was a favoured strategy by the less proficient learners in the sample, it assisted neither listening comprehension nor incidental vocabulary acquisition in the kinds of on-line input-processing tasks required by the instructional tasks used in this study.

(c) The relationships between reported use of metacognitive strategies and listening comprehension and incidental vocabulary acquisition were most clearly evident in Group B, the three-time listening group, which received no training. One possible explanation for this is that the students in this group were free to use their preferred strategies. In contrast, the students in Group C and Group D may have felt the need to use strategies relevant to the training they had received.

Chapter 7

Conclusion

This chapter first summarises the main findings of the study, next presents the implications and limitations of the study, then recommends directions of further research, and finally presents the conclusion. Before summarising the rese 冂 arch findings, it is necessary to first briefly review the aim, background and methodology of the study.

7.1 The Aim, Background and Methodology of the Study

The current study aimed to investigate the differential effects of four listening conditions on Chinese university EFL learners' listening comprehension and their incidental vocabulary acquisition from listening. It also aimed to examine the relationships between Chinese university EFL learners' metacognitive listening awareness, listening comprehension, and incidental vocabulary acquisition.

The participants of the study were 172 first-year Chinese university students. The four different listening conditions were: a) listening texts presented only one time; b) listening texts presented three times; c) five-minute schema-raising training before listening three times, and d) five-minute inferencing training before listening three times.

Four listening texts along with four tasks were designed to check the participants' comprehension. Each text contained five target words in order to investigate incidental vocabulary acquisition. To check the participants' incidental acquisition of the target words, immediate and delayed vocabulary post-tests were administered to the participants in the order of production, form, and reception. The participants' metacognitive listening awareness was measured by means of Vandergrift *et al.*'s (2006) Metacognitive Awareness Listening Questionnaire (MALQ). This measures five aspects of metacognitive listening awareness: planning-evaluation, directed attention, person knowledge, mental translation and

problem solving. ANOVAs were employed to examine the effects of the different listening conditions on the participants' listening comprehension and incidental vocabulary acquisition. Pearson Correlations were run to investigate the relationships between the participants' metacognitive listening awareness, listening comprehension, and incidental vocabulary acquisition.

7.2 Summary of the Main Findings

In this section, the main findings of the study are summarised based on the results of the statistical tests and data analysis reported in Chapter 5 and Chapter 6.

Chapter 5 reported the results for the effects of the four different listening conditions on the participants' listening comprehension and incidental vocabulary acquisition. The main findings were:

(a) All the groups of three-time listening significantly outscored the one-time listening group in comprehension, but no significant group differences were observed among the three-time listening groups.
(b) The participants in all four listening conditions acquired some vocabulary knowledge, especially receptive and form knowledge.
(c) The participants who listened three times outperformed their one-time peers in vocabulary acquisition.
(d) The inferencing training group outperformed the other groups in vocabulary acquisition from listening. However the advantages were quite slight and showed only in terms of recognition of word form.

Chapter 6 reported the results for the relationships between the participants' metacognitive listening awareness, listening comprehension, and incidental vocabulary acquisition. The main findings were:

(a) The correlations between the participants' metacognitive listening awareness, listening comprehension, and their incidental vocabulary acquisition were generally on the low side.

(b) With regard to the relationship between the participants' metacognitive listening awareness and listening comprehension, only person knowledge was related to listening comprehension in Cycle 2 for those who listened without training (either listening one time or three times); only mental translation awareness was negatively related to listening comprehension of those who listened three times with schema-raising training or without training; reported use of planning-evaluation, directed attention and problem solving awareness were not found to be related to listening comprehension.

(c) Regarding the relationships between the participants' metacognitive listening awareness and incidental vocabulary acquisition, few significant correlations were found. Reported use of planning-evaluation strategies was positively related to the immediate production tests and receptive tests for those learners who listened three times without training; mental translation was negatively related to the immediate receptive tests in listening Cycle 1 for those learners who listened three times either with inferencing training or without training and also to the delayed production test of those who listened three times with inferencing training. The relationship between person knowledge awareness and incidental vocabulary acquisition was most evident in the receptive tests for those who listened three times without training.

7.3 Implications

This section provides a summary of the principal theoretical and pedagogical implications of the research findings.

7.3.1 Theoretical Implications

All three-time listeners significantly outscored their one-time peers in listening comprehension in the study. This finding implies that learners need time to process input for listening comprehension. For skilled listeners, one time input may be

sufficient if the listening text is easy, but for less skilled listeners (such as those in this study) their listening comprehension is poor even after several repetitions of the texts, and this is particularly true when the text is difficult or the listeners are unfamiliar with the content. Listeners with limited linguistic skills tend to make use of bottom-up processing when listening and thus focus more on the sounds, syllables and words to build up information from the input. To achieve this, time is the crucial factor. Learners of the kind investigated in this study clearly need adequate listening time and this can be achieved by presenting them with repetitions of the listening texts. O'Bryan and Hegelheimer (2009) argued that repeated listening allows learners "to build up to more complex bottom-up processing strategies, namely using lexical and grammatical relationships to comprehend the input and utilize the information gained from the text to make meaning… having the opportunity to repeat the text is what facilitated the creation of a framework that resulted in a more coherent summary the second time" (p. 26). With more exposure to the listening texts, learners are able to carry out the bottom-up processing on which they rely for comprehension.

Schmitt (2008, p. 339) argued that frequency of exposure and adequate time to process lexical items will facilitate vocabulary learning. The finding in the present study that the learners who listened three times outperformed the one-time listeners in vocabulary acquisition suggests that time is also a crucial factor for processing input for incidental vocabulary acquisition. The availability of processing time enables learners to attend to the linguistic aspects of the input, which is a necessary condition for learning new words. Especially when vocabulary is acquired as a by-product, learners have limited time to attend to lexical items as they are primarily concerned with meaning rather than form. Moreover, in an incidental learning context, the number of exposures to the target words may be very limited (only six exposures in this study) making it very difficult for the learners to establish form-meaning mapping. According to Barcroft (2002), the mind has a finite processing capacity, and any attention given to meaning will diminish the resources available for attention to form, and vice-versa. Webb's (2007) study of incidental acquisition from reading showed that "if learners meet unknown words ten times in context, sizable learning gains may

occur. However, to develop full knowledge of a word more than ten repetitions may be needed" (p. 64). Incidental learning from listening tasks may require even greater word exposure.

That no significant group differences were observed among the three-time listening groups in the study indicates that the metacognitive awareness training was not effective. Though learners may feel the need to use the strategies immediately after the training, it takes time for them to be able to implement them. In fact, one of the three key principles for successful metacognitive instruction identified by Veenman *et al.* (2006: 9) was "prolonged training to guarantee the smooth and guaranteed maintenance of metacognitive activity". Long-term training allows learners opportunities to proceduralize the learned strategies. In order to achieve automatic strategy use, learners need to apply the taught strategies regularly, outside the classroom as well as inside.

7.3.2 Pedagogical Implications

The findings of this study suggest the following pedagogical implications.

Text repetition in listening comprehension is clearly helpful in facilitating learners' listening comprehension. In an authentic communicative setting, however, repetition of oral input may only happen when requested by the listener. Therefore, in order for learners to develop the competence needed for listening in a real communicative context, teachers need to reduce repetition over time. In other words, repetition of listening texts may suit the needs of beginners, but the final goal of listening teaching is to enable learners to be able to comprehend input in authentic listening settings. It is suggested therefore that for less skilled listeners, EFL teachers should start with providing opportunities for repeated listening and then gradually move toward the final state of one-time listening. With regard to the difficulty level of the listening texts, instruction should aim only to provide input that is slightly above the learners' current level of competence. As argued by Rost (2011, p. 152), "By receiving input that is progressively more complex, the learner naturally acquires

listening ability". Therefore, EFL teachers should choose reasonably challenging listening materials to suit the level of learners, and as their competence develops, the listening texts can gradually increase in linguistic difficulty.

Listening texts not only serve learners as a tool for practicing listening but also as a source of incidental vocabulary acquisition. When designing listening texts for the purpose of incidental vocabulary learning, EFL teachers should keep the following issues in mind.

- New words to be learned incidentally in the listening texts should be limited to a very small percentage of the total words in the text. As noted by Read (2004, p. 150), "the vocabulary learning goals for minimum levels of both listening and reading comprehension need to be set somewhat higher than 95 percent coverage". Hu & Nation (2000) also argued that learners need to know at least 98% of the words in order to read independently. "However, there is simply not enough evidence to confidently establish a coverage requirement for listening at the moment" (Schmitt, 2008, p. 331). The primary aim should be to ensure that learners are able to comprehend the text. Only when the percentage of new words is low can learners possibly attend to unknown words and guess their meanings effectively.
- EFL teachers should maximize meaning-focused exposure as well as providing explicit vocabulary instruction. Repetition of the target words is an important condition for incidental vocabulary acquisition to occur. Considering that what is retained by the listener is the encoded information in memory (Danks & End, 1987), words which leave more traces in memory (such as frequently repeated words) may be more easily understood than those leaving fewer traces in memory during listening comprehension. As described previously, the exposure to the target words in this study were only six, which probably only left very slight traces of word form in memory that were not sufficient for form-meaning mapping by the learners. According to Webb (2007: 64), when "learners meet unknown words ten times in context,

sizable learning gains may occur". Schmitt (2008) suggested that 8-10 reading exposures may give learners a reasonable chance of acquiring an initial receptive knowledge of words. Therefore, it is advised that each target word should occur several times in different contexts in the listening tasks. As argued by Huckin & Coady (1999, p. 185) "there are so many variables involved in learning a word that it is impossible to determine any one threshold for number of exposures. Much depends on such factors as the word's salience in a given text, its recognizability as a cognate, its morphology, the learner's interest, and the availability and richness of context clues".

- The linguistic properties of the listening texts:

  a. The content of texts should be familiar to the learners. Nassaji (2003: 655) found that the most frequently used knowledge source for lexical inferencing in reading comprehension is world knowledge and this finding suggests that clues residing in background knowledge will assist comprehension. EFL teachers should use or devise listening texts that have content related to the learners' background knowledge.
  b. The sentences in which the targets words are embedded should provide clues for learners to infer the meanings. Previous studies (e.g., Bengeleil & Paribakht, 2004) revealed that when using contextual clues, learners tend to use local co-text clues (words whose meanings could be inferred by using the immediate sentence context) to infer word meaning. They found that learners first study the sentence containing the target word to infer the meaning and only later resort to the co-text beyond the target word sentence if necessary.
  c. Words which contribute to the understanding of the topic of texts in a listening task are more likely to be understood than words describing factual details in the same listening task. Therefore, the target words should occur in the sentences relating the topic of the text.

d. One of the most effective ways of improving incidental learning is by reinforcing it afterwards with intentional learning tasks. Therefore, follow-up work is necessary to promote awareness of the unfamiliar lexical items in order to deepen and extend the learners' partial knowledge. Some after-listening vocabulary work (e.g., pronunciation help, reconstruction activities, etc.) should be devised to consolidate and maintain the partial and vague vocabulary knowledge that learners gain from listening tasks.

EFL teachers should recognize that, even though it may be time-consuming to prepare listening texts and follow-up tasks, they can serve for both listening comprehension and vocabulary acquisition.

Metacognitive awareness training needs to be conducted over a period of time, and learners also need time to gradually act on the metacognitive strategies they have received training in. The metacognitive listening strategy training in the study was conducted for only five minutes, and it was clearly too short for the learners to automatize strategy use. Learners also need to apply the taught strategies beyond the classroom listening contexts. Long-term training can provide learners with more opportunities to apply the learned strategies in real life listening activities. L2 research on the effect of training on inferencing meaning in listening comprehension is extremely scarce. The use of the lexical inferencing strategy has been mostly examined in reading comprehension research but has been shown to not be always effective. For instance, Hamada (2009) examined 5 Japanese college-level ESL learners' meaning inferencing behaviors over a 4 week period, and found the learners did not show a considerable change. Although some studies (e.g., Fraser, 1999) proved L2 lexical inferencing strategy training to be helpful in reading comprehension, the generalizability of their findings to listening is unclear. Therefore, in order to draw pedagogically useful conclusions, more research regarding the effect of L2 word-meaning inference training is needed. Moreover, inferencing in listening may be problematic and EFL teachers should be cautious about encouraging students to infer

word meaning in listening comprehension, for they may experience difficulty in using appropriate knowledge sources to infer word meaning, and once an incorrect inference is made, it may harm their understanding of the text. Field (2008) recommended that listeners should check their interpretations against incoming information. So EFL teachers can instruct students to listen to texts embedded with unknown words by asking them to identify unknown words, report what they think the meanings of the words are, and how they arrived at the meanings of the words. Then the teacher can ask the students to listen again and encourage them to check if their inference matches the existing textual information (Lee & Cai, 2010).

7.4 Limitations

The results of the current study should be interpreted in light of the following three major limitations.

(a) The metacognitive listening strategy training was limited to a relatively short period of time (five minutes), and furthermore it occurred independently of the students' curriculum. It might be that the effect of metacognitive strategy training will only emerge weeks or months later when the learners are able to employ strategies on their own. Therefore, it is suggested that, in future, studies design longer training to detect effects in learners' actual use of the strategies and the application of strategy training should be incorporated into the instruction.

(b) It is very difficult for students to report doing something that they have not been consciously monitoring. Regarding the data gathered on the participants' metacognitive listening awareness, the study only employed a questionnaire with no observation of the learners' actual listening performance. The questionnaire may only reflect what the participants thought they should do instead of what they actually do. However, as Lynch and Mendelsohn remarked:

> "The fact that listening comprehension occurs largely unobserved means that it can be very difficult to establish the 'process' by which listeners reach their interpretations, even if we have the evidence of the 'product' " (Lynch & Mendelsohn, 2002, p. 202).

(c) The difference in the listening comprehension results for the two cycles revealed that the level of difficulty of the listening tasks in the two listening cycles were different. The fact that one of the two tasks in cycle 2 was a monologue while the other tasks were all dialogues may have made the tasks in Cycle 1 easier and the participants consequently scored higher than they did in Cycle 2. Because dialogues include negotiation between the speakers and contain more redundant information, they may be easier to understand than monologues. In addition to the topic of the monologue (various types of working dogs) may have been unfamiliar to the students, which also increased the difficulty of this task.

(d) Another limitation of this study concerns the reliability of the vocabulary delayed post-tests. Because the participants were engaged in recycling recently met vocabulary, they may have studied some of the target words outside of the context of the experiment in the one-week interval between the immediate and delayed post-tests. Although this probably did not occur to any great degree, it is nevertheless, a possibility that must be acknowledged.

7.5 Further Research

The results obtained in this study suggest that the approach used deserves further research.

(a) Will more than three times of listening lead to better listening comprehension and incidental vocabulary acquisition? If yes, will there be a threshold of listening times for the success of EFL learners' listening comprehension and incidental vocabulary acquisition?

(b) Will longer training of the metacognitive strategies result in a clearer pattern

of relationship between EFL learners' metacognitive awareness, listening comprehension, and incidental vocabulary acquisition?

(c) Will the training of other strategies (such as directed attention and person knowledge, etc.) reveal relationships between EFL learners' metacognitive awareness, listening comprehension, and incidental vocabulary acquisition? If yes, which strategy training will be most helpful for EFL learners to achieve listening comprehension and incidental vocabulary acquisition?

(d) What effect does the learners' L2 proficiency have on their ability to acquire words incidentally through listening comprehension? For instance, will EFL learners of higher language proficiency be better able to acquire receptive and productive knowledge of new words?

7.6 Conclusion

In conclusion, the present study adds to the previous research regarding the importance of listening conditions. The findings of the current study indicate that multiple times of listening offers a better condition over a single time of listening in facilitating both listening comprehension and incidental vocabulary acquisition. It contributes to our understanding of how to improve EFL learners' listening and vocabulary knowledge by identifying those listening conditions that are optimal.

Besides, retrospectively, the finding that listening comprehension and incidental vocabulary acquisition are not significantly related to short pre-listening metacognitive strategy training raises the issue of whether learners benefit more if they use strategies that are personally applicable. It shows that strategy training is 'a sword with double edge' if learners are not given enough time to implement the strategy they have been taught.

Appendix A:

Metacognitive Awareness Listening Questionnaire (MALQ)

Type scale		Strategy or belief/perception	
Planning-evaluation	1.	Before I start to listen, I have a plan in my head for how I am going to listen.	1 2 3 4 5 6
Directed attention	2.	I focus harder on the text when I have trouble understanding.	1 2 3 4 5 6
Personal knowledge	3.	I find that listening in English is more difficult than reading, speaking, or writing in English.	1 2 3 4 5 6
Mental translation	4.	I translate in my head as I listen.	1 2 3 4 5 6
Problem-solving	5.	I use the words I understand to guess the meaning of the words I don't understand.	1 2 3 4 5 6
Directed attention	6.	When my mind wanders, I recover my concentration right away.	1 2 3 4 5 6
Problem-solving	7.	As I listen, I compare what I understand with what I know about the topic.	1 2 3 4 5 6
Personal knowledge	8.	I feel that listening comprehension is a challenge for me.	1 2 3 4 5 6
Problem-solving	9.	I use my experience and knowledge to help me understand.	1 2 3 4 5 6
Planning-evaluation	10.	Before listening, I think of similar texts that I may have listened to.	1 2 3 4 5 6
Mental translation	11.	I translate key words as I listen.	1 2 3 4 5 6
Directed attention	12.	I try to get back on track when I lose concentration.	1 2 3 4 5 6
Problem-solving	13.	As I listen, I quickly adjust my interpretation if I realize that it is not correct.	1 2 3 4 5 6
Planning-evaluation	14.	After listening, I think back to how I listened, and about what I might do differently next time.	1 2 3 4 5 6
Personal knowledge	15.	I don't feel nervous when I listen to English.	1 2 3 4 5 6
Directed attention	16.	When I have difficulty understanding what I hear, I give up and stop listening.	1 2 3 4 5 6
Problem-solving	17.	I use the general idea of the text to help me guess the meaning of the words that I don't understand.	1 2 3 4 5 6
Mental translation	18.	I translate word by word as I listen.	1 2 3 4 5 6
Problem-solving	19.	When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess makes sense.	1 2 3 4 5 6
Planning-evaluation	20.	As I listen, I periodically ask myself if I am satisfied with my level of comprehension.	1 2 3 4 5 6
Planning-evaluation	21.	I have a goal in mind as I listen.	1 2 3 4 5 6

1=strongly disagree; 2=disagree; 3=slightly disagree; 4=partly agree; 5=agree; 6=strongly agree

Source: Vandergrift, L. et al (2006). *Language Learning* Vol.56, No.3

听力元认知意识问卷(MALQ)

	策 略 / 观 念	
1.	听之前，我在头脑中对即将进行的听力活动有计划。	1 2 3 4 5 6
2.	我在听不懂时对文章更加集中注意力。	1 2 3 4 5 6
3.	我感觉在英语中听力比其他的（说、读、写）都难。	1 2 3 4 5 6
4.	听时我在头脑中翻译。	1 2 3 4 5 6
5.	我用已知词汇去推断不认识的词义。	1 2 3 4 5 6
6.	当思想走神时，我马上恢复我的注意力。	1 2 3 4 5 6
7.	我把所听到的内容同自己对本话题的已知知识进行比较。	1 2 3 4 5 6
8.	我感觉英语听力对我是个挑战。	1 2 3 4 5 6
9.	我利用自己的经历和已知知识帮助理解。	1 2 3 4 5 6
10.	听之前，我回想以往听过的类似文章。	1 2 3 4 5 6
11.	听时我在头脑中把关键词翻译成汉语。	1 2 3 4 5 6
12.	当我发现注意力分散时，我努力回到所听内容上来。	1 2 3 4 5 6
13.	在意识到自己的理解不对时，我迅速调整自己的理解。	1 2 3 4 5 6
14.	听之后，我回想自己听的过程，并思考下次再听的时候会在哪里使用不同的方式。	1 2 3 4 5 6
15.	我在听英语时并不感觉紧张。	1 2 3 4 5 6
16.	当我听不懂时，我放弃，不再听。	1 2 3 4 5 6
17.	我利用文章的大意帮助自己推断词汇的含义。	1 2 3 4 5 6
18.	听英语时，我在头脑中逐字翻译。	1 2 3 4 5 6
19.	我回想前面听到的内容，帮助自己确认现在所猜测的词汇意义准确。	1 2 3 4 5 6
20.	听的过程中，我间歇性地停下来问自己是否满意当前的理解。	1 2 3 4 5 6
21.	我在听时头脑中有目标。	1 2 3 4 5 6

1=完全不同意; 2=不同意; 3=有点不同意; 4=部分同意; 5=同意; 6=完全同意

引自: Vandergrift, L. et al (2006). *Language Learning* Vol.56, No.3

谢谢合作!

姓名：_____

Appendix B: Tables of the Pilot Study

Table 1. Pearson Correlations of the Participants' MA and LC in Task One

Listening Scores 1		Planning -Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem -Solving
Group A	Pearson Correlation	.265	.136	.416(**)	.079	.417(**)
	Sig. (2-tailed)	.098	.403	.008	.627	.007
	N	40	40	40	40	40
Group B	Pearson Correlation	.016	.301	.127	-.184	-.006
	Sig. (2-tailed)	.923	.066	.447	.270	.971
	N	38	38	38	38	38
Group C	Pearson Correlation	.046	.126	.224	-.046	.086
	Sig. (2-tailed)	.770	.426	.154	.770	.588
	N	42	42	42	42	42

** Correlation is significant at the 0.01 level (2-tailed).

Table 2. Pearson Correlations of the Participants' MA and LC in Task Two

Listening Scores 2		Planning -Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem -Solving
Group A	Pearson Correlation	.225	.492(**)	-.003	.286	.508(**)
	Sig. (2-tailed)	.163	.001	.987	.074	.001
	N	40	40	40	40	40
Group B	Pearson Correlation	.300	.369(*)	.164	-.093	-.050
	Sig. (2-tailed)	.067	.023	.326	.578	.767
	N	38	38	38	38	38
Group C	Pearson Correlation	.179	.194	.157	-.190	-.084
	Sig. (2-tailed)	.258	.219	.320	.228	.595
	N	42	42	42	42	42

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Pearson Correlations of the Participants' MA and IVA for Group A in Task One

Task 1		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	.092	.062	.130
	Sig. (2-tailed)	.574	.702	.425
	N	40	40	40
Directed Attention	Pearson Correlation	.146	.007	.157
	Sig. (2-tailed)	.370	.965	.333
	N	40	40	40
Person Knowledge	Pearson Correlation	.068	-.147	.140
	Sig. (2-tailed)	.676	.365	.390
	N	40	40	40
Mental Translation	Pearson Correlation	.231	.203	-.064
	Sig. (2-tailed)	.151	.209	.694
	N	40	40	40
Problem -Solving	Pearson Correlation	.367(*)	.329(*)	.166
	Sig. (2-tailed)	.020	.038	.307
	N	40	40	40

* Correlation is significant at the 0.05 level (2-tailed).

Table 4. Pearson Correlations of the Participants' MA and IVA for Group A in Task Two

Task 2		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	.123	.209	.303
	Sig. (2-tailed)	.450	.195	.058
	N	40	40	40
Directed Attention	Pearson Correlation	.214	.304	.083
	Sig. (2-tailed)	.184	.056	.612
	N	40	40	40
Person Knowledge	Pearson Correlation	.473(**)	.028	.218
	Sig. (2-tailed)	.002	.864	.177
	N	40	40	40
Mental Translation	Pearson Correlation	-.208	-.056	-.020
	Sig. (2-tailed)	.197	.730	.905
	N	40	40	40
Problem -Solving	Pearson Correlation	.238	.336(*)	.074
	Sig. (2-tailed)	.139	.034	.650
	N	40	40	40

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 5. Pearson Correlations of the Participants' MA and IVA for Group B in Task One

Task 1		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	-.085	.235	-.177
	Sig. (2-tailed)	.610	.155	.288
	N	38	38	38
Directed Attention	Pearson Correlation	.155	.036	.385(*)
	Sig. (2-tailed)	.351	.829	.017
	N	38	38	38
Person Knowledge	Pearson Correlation	.124	-.142	-.025
	Sig. (2-tailed)	.460	.394	.882
	N	38	38	38
Mental Translation	Pearson Correlation	.179	.059	-.214
	Sig. (2-tailed)	.283	.724	.198
	N	38	38	38
Problem -Solving	Pearson Correlation	.074	.163	.191
	Sig. (2-tailed)	.657	.329	.251
	N	38	38	38

* Correlation is significant at the 0.05 level (2-tailed).

Table 6. Pearson Correlations of the Participants' MA and IVA for Group B in Task Two

Task 2		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	-.030	-.038	-.223
	Sig. (2-tailed)	.858	.821	.178
	N	38	38	38
Directed Attention	Pearson Correlation	.347(*)	.316	.307
	Sig. (2-tailed)	.033	.053	.061
	N	38	38	38
Person Knowledge	Pearson Correlation	.438(**)	.093	.058
	Sig. (2-tailed)	.006	.581	.728
	N	38	38	38
Mental Translation	Pearson Correlation	-.215	-.069	-.049
	Sig. (2-tailed)	.194	.683	.772
	N	38	38	38
Problem -Solving	Pearson Correlation	-.018	.188	.231
	Sig. (2-tailed)	.917	.257	.163
	N	38	38	38

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 7. Pearson Correlations of the Participants' MA and IVA for Group C in Task One

Task 1		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	.055	.100	-.085
	Sig. (2-tailed)	.729	.528	.592
	N	42	42	42
Directed Attention	Pearson Correlation	.232	.060	.148
	Sig. (2-tailed)	.140	.708	.348
	N	42	42	42
Person Knowledge	Pearson Correlation	-.071	-.259	-.088
	Sig. (2-tailed)	.657	.098	.581
	N	42	42	42
Mental Translation	Pearson Correlation	.059	.085	-.041
	Sig. (2-tailed)	.708	.594	.797
	N	42	42	42
Problem -Solving	Pearson Correlation	.160	.109	-.004
	Sig. (2-tailed)	.310	.492	.981
	N	42	42	42

Table 8. Pearson Correlations of the Participants' MA and IVA for Group C in Task Two

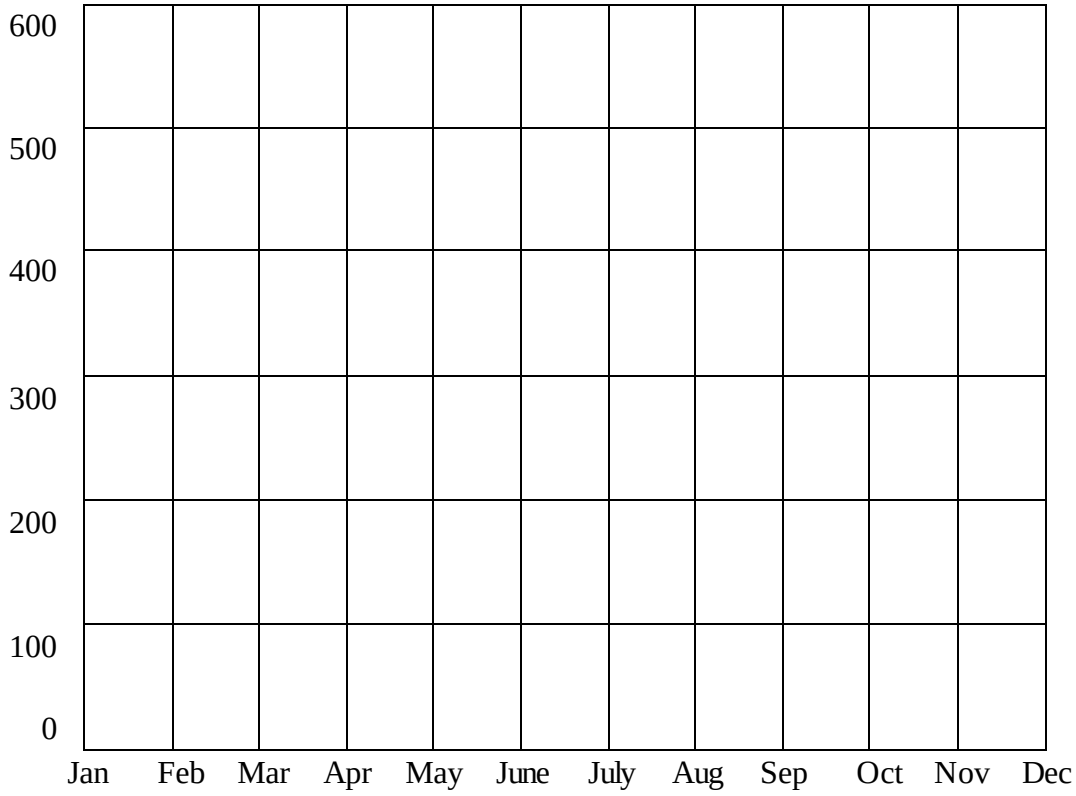
Task 2		Form	Reception	Production
Planning -Evaluation	Pearson Correlation	.062	.057	.054
	Sig. (2-tailed)	.694	.719	.736
	N	42	42	42
Directed Attention	Pearson Correlation	.289	-.034	.325(*)
	Sig. (2-tailed)	.064	.833	.036
	N	42	42	42
Person Knowledge	Pearson Correlation	-.064	.076	.049
	Sig. (2-tailed)	.687	.634	.758
	N	42	42	42
Mental Translation	Pearson Correlation	.025	-.296	.035
	Sig. (2-tailed)	.874	.057	.824
	N	42	42	42
Problem -Solving	Pearson Correlation	.089	-.113	.062
	Sig. (2-tailed)	.574	.477	.695
	N	42	42	42

* Correlation is significant at the 0.05 level (2-tailed).

Appendix C: Listening Tasks and Texts

Listening Task 1:

Listen to the following report of a sales manager and draw a sales line in the chart below.



Listening Text 1:

Good morning, ladies and gentlemen! Now, I'd like to report on this year's sales of computers by our company. At the start of the year I felt very **optimistic** for our company. I felt we had a good chance of having an excellent year. But sales were not quite as I expected.

Overall it wasn't a bad year for sales but our performance was very uneven. We had some good periods when sales were excellent and some bad periods when sales were much weaker. I am going to report on our overall sales. That is, I won't give sales separately for the **domestic** market here in China and our international sales to overseas countries. I'll just report on total sales.

The first quarter was not very good. Sales actually dropped during the first three months of the year. There was a big **decline**. In January, we sold a total of 500 computers but in March we only sold 100 computers. Thus there was a big fall in

sales during this period. The fall was **abrupt** – it took place over just three months. The problem here was our competitor – the Johnson Company. This company's prices were very **competitive** in the first quarter of the year – they were able to sell their computers at a much cheaper price than we could sell our own computers both overseas in the international market and at home in the **domestic** market. Another problem we faced was that the interest rates we were paying on our loans from the bank were very high.

However, by April our sales had stopped falling and sales were at the same level in the second quarter as in the first quarter. Sales in June were the same as the sales for March – 100 computers. This was not a very good performance but at least we had stopped the **decline** in sales.

Then in the third quarter there was an **abrupt** improvement. Sales started to improve in July and by the end of September had reached the same level as January – we sold a total of 500 computers in September.

In the fourth quarter we were able to maintain sales at the September level. In fact there was a gradual increase over this period, reaching a total of 550 computers in December. As you can see by the end of the year we had become much more **competitive** again**.** This is because we were able to lower the price of our computers whereas Johnson Company had actually increased theirs.

So you can see this was a difficult year. But we ended with stronger sales than we expected and I am very **optimistic** for next year. I expect sales to go on increasing by and by.

(Total: 455 words)

Listening Task 2:

Listen to the following dialogue and fill in the registration form below.

Conference Registration Form for Student

Name	David ___
Address	Room ____, Dormitory Building No.3, Shenyang Jianzhu University, Shenyang
Department	_____ Studies
Student No.	_____ LS
Conference Fee	$_____

Listening Text 2:

Student: Good morning!
Woman: Good morning! Can I help you?
Student: Yes, please. Is this where we register for the *5th International Conference of Language Studies*?
Woman: Yes! What's your name?
Student: Well… Actually, I haven't registered yet. My friends told me the registration form is **available** here. And I just arrived this morning, so I hope I could get registered here.
Woman: Well. We have advised everyone attending the conference that they should register beforehand. This is important so we know what **accommodation** they want. We need to know whether they want to stay at the conference centre or just attend daily. We also need to know whether they want lunch.
Student: Oh, I'm sorry I didn't know about this. Is it possible to register now? I won't need any **accommodation** at the conference centre.
Woman: Are you a Language Studies student?
Student: Yes, I am. My major is **Linguistics**.
Woman: OK, then I guess we can register you alright.
Student: Ah, that's great! Thank you.
Woman: Now, I'll need to take your details, so that I can fill in this form. So, can I have your full name?
Student: Yes, sure. It's David Li.
Woman: Yes, D-a-v-i-d, David, and L-e-e, Lee.
Student: No, it's L-i, Li.
Woman: OK, L-i, Li. And where do you live? What's your **permanent** address, David?
Student: I'm a student. I live in the university, so I don't have a long-term address.

My address will change when I graduate. So I don't have a **permanent** address right now except the university.

Woman: OK, then. Give me your current dormitory address, please.

Student: Yes. My present address is Room 426, Dormitory Building No.3, Shenyang Jianzhu University, Shenyang.

Woman: Room 426, Dorm Building No.3, Shenyang Jianzhu University. Why is the name of the university "Jianzhu"? What does it mean?

Student: Jianzhu in Chinese means 'construction'. Most students in my university study **Architecture**.

Woman: Really? So I guess there are a lot of beautiful buildings in your university.

Student: Yes, indeed! And many of the buildings were actually designed by the students from the **Architecture** Department of my university.

Woman: Wonderful! But you are not in that department. You said you were studying **Linguistics**.

Student: Yes, that's right. I am in the Department of Language Studies. I am very interested in language and my university also specializes in this subject as well.

Woman: Right! Now, I need your student number to make sure that you're a student that is still at school.

Student: Yes, sure. Here it is. My student number is … 24690685 LS.

Woman: 24690685 LS. Now, the Conference fee is $65, David.

Student: OK. Here you are!

Woman: Thank you, David. That's fine. Now, I'm sorry but we have just run out of conference bags, but one will be **available** later if you want to come by the registration desk.

Student: Okay.

Woman: The main lecture room is right down the hall there on your left. Enjoy your time here with us!

Student: I'm sure I will! Thank you very much. Bye!

Woman: Bye-bye!

(Total: 475 words)

Listening Task 3:

You will hear a man telephoning a sports center. Fill in the customer form with what you hear.

Ace Sports Center — Customer Form	
Customer Name	*Charles Baker*
Company Name	_____*Company*
Membership Number	_____
Date of Group Tour	_____*November*
Discount Offered	_____*%*
Contact Number	23987413
Email Address	*info@_____.com*

Listening Text 3:

Woman: Good afternoon. Ace Sports Center. Can I help you?
Man: I hope so. We're members of the sports center, but I've just seen from the newspaper that the opening date has been delayed.
Woman: Oh, er … could you give me your name, please?
Man: Yes, my name is Charles Baker.
Woman: Charles Baker. And you are an **individual** member, sir?
Man: No. I'm not just speaking for myself. Actually, I'm phoning on behalf of a group of us who have joined the center. I'm the Human Resources manager at RKS Company.
Woman: That's the letters R-K-S?
Man: Yes, that's right. We've got twenty members who have joined your Sports Center.
Woman: Were you given a membership number?
Man: Yes, our membership number is 6-4-4-5-3.
Woman: 6-4-4-5-3. Yes. I've got you here in my computer.
Man: But I need to know when we can start using your **facilities.** I am right, aren't I – these include the swimming pool, basketball court, and gym?
Woman: Yes – we have all these **facilities**. We're so sorry about the delay, Mr. Baker. But we're arranging to show **registered** members around the center.

Man: Oh, well that's good – we are all already **registered**. We gave our names and paid our membership fees three weeks ago.

Woman: Okay, we'll arrange for all your members to tour the Sports Center this month and show you to basketball courts, swimming pool and gym.

Man: When would that be?

Woman: There is one tour on this Thursday … Could some of you come on Thursday the 17th?

Man: That would be difficult, but next Thursday the 24th would be ok with us.

Woman: Er, what about the 25th?

Man: The 25th should be fine. But I shall have to speak to our **individual** members first.

Woman: Please try to come in a group.

Man: I see.

Woman: Is it OK if we start the tour at 6pm?

Man: I'll have to check if that time is okay. Then I will get back to you to **confirm** the date and time.

Woman: I am sorry for the delay in opening, and I'd like to offer you a **reduction** in the membership fee.

Man: Do you mean you will offer a discount?

Woman: Yes. I'd be happy to offer you a discount.

Man: Do you have an exact amount in mind?

Woman: Well, how about a fifteen per cent **reduction** from the full fee?

Man: That seems very reasonable … thanks.

Woman: Can I just **confirm** your number so I don't call the wrong telephone? Is it 136- 229- 829- 87?

Man: Please use my direct line. It's 239 -874 - 13. I'm always in my office during the day.

Woman: Or maybe email?

Man: Yes, that's better. It's info-at-cullers-dot-com.

Woman: At cullers?

Man: Yes, C-U-L-L-E-R-S dot com.

Woman: Very good. Thank you, Mr. Baker.

Man: Thanks.

Woman: Once again, I'm sorry for the delay in our opening date.

Man: It's ok.

Woman: Bye!

Man: Bye!

(453 words)

Listening Task 4:

You will hear a TV program. Complete the table below with the information from the program.

TYPE OF WORKING DOG	ADDITIONAL INFORMATION ABOUT THE DOG
Sheep dogs	Farmers say these dogs are so _____ that they can even count the sheep.
Guide dogs/ Labradors	They can lead their owner through _____ and crowds.
Guard dogs/ German shepherds	They also serve as search and _____ dogs working in disaster places.
Detector dogs	They can find _____, fresh fruit, meat and even live animals hidden in people's bags.
Transport dogs/ Huskies	Huskies have been used for many years as a means of transport on_____.

Listening Text 4:

Welcome to this week's program of *Animal World*. Today we will take a look at some different types of working dogs.

For many years, dogs have been popular with people because they are extremely **obedient** to their owners. They will almost do anything their owners ask them to, so they can be trained to do a number of very valuable jobs.

Perhaps the most well known of working dogs is the sheep dog. Sheep dogs are smart and **obedient** in nature. Working together with their masters, they can **herd** sheep. They collect them together and then protect them by watching over them carefully. Some farmers say that their dogs are so smart that they not only **herd** sheep together, they can count the sheep, too.

Another much-loved working dog is the guide dog, trained to work with the blind people. Guide dogs, usually Labradors, need to be well-trained enough to lead their owners through traffic and crowds, but they must also be of a gentle nature.

Another kind of common working dog is the German shepherd dog. German shepherd dogs make very excellent guard dogs and also serve as search and rescue dogs working in disaster areas after earthquakes. These dogs must be tough and brave so that they can cope with the **harsh** conditions of their work. They are used to working in such difficult conditions. They can be sent anyplace where there is a disaster to **sniff** out lives and help save them.

Many countries **prohibit** people from importing things like drugs, fresh fruit or meat. This is why you will find detector dogs in many airports. These dogs have great sense of smell and so are trained to **sniff** out drugs, fresh fruit, meat and even live animals hidden in people's bags. At Sydney airport, for example, there are ten detector

dogs working full time.

Another famous working dog is the husky. Huskies, which came from Siberia a long time ago, have been used for many years as a means of transport on snow, particularly in Antarctica where they have played an important role. Huskies are known for being able to live under **harsh** conditions such as places that are very cold or snowy, and they enjoy working in a team. But the huskies have all left Antarctica now because the International Antarctica Treaty **prohibits** their use because they are not native animals in the region.

Working dogs can help people in so many ways; no wonder they have always been a close friend to us. Ok, so much for the *Animal World* this week. Thank you for watching, and I'll see you next week. Bye!

(439 words)

Appendix D: Vocabulary Tests

Vocabulary Pre-test

There are 25 words in the list below. Circle a number after each word to tell how well you know the word.

4 = I know the word well and can use it correctly
3 = I know the word quite well but would have difficulty in using it.
2 = I know the meaning of the word but cannot use it.
1 = I would only know the meaning of the word if I saw it in a sentence.
0 = I do not know the word at all.

conclusion	**4**	**3**	**2**	**1**	**0**
prefer	**4**	**3**	**2**	**1**	**0**
domestic	**4**	**3**	**2**	**1**	**0**
classical	**4**	**3**	**2**	**1**	**0**
permanent	**4**	**3**	**2**	**1**	**0**
distance	**4**	**3**	**2**	**1**	**0**
narrow	**4**	**3**	**2**	**1**	**0**
abrupt	**4**	**3**	**2**	**1**	**0**
generally	**4**	**3**	**2**	**1**	**0**
accommodation	**4**	**3**	**2**	**1**	**0**
respect	**4**	**3**	**2**	**1**	**0**
available	**4**	**3**	**2**	**1**	**0**
hostile	**4**	**3**	**2**	**1**	**0**
competitive	**4**	**3**	**2**	**1**	**0**
popular	**4**	**3**	**2**	**1**	**0**
serenade	**4**	**3**	**2**	**1**	**0**
optimistic	**4**	**3**	**2**	**1**	**0**
audience	**4**	**3**	**2**	**1**	**0**
different	**4**	**3**	**2**	**1**	**0**
architecture	**4**	**3**	**2**	**1**	**0**
decline	**4**	**3**	**2**	**1**	**0**
concentrate	**4**	**3**	**2**	**1**	**0**
appreciate	**4**	**3**	**2**	**1**	**0**
linguistics	**4**	**3**	**2**	**1**	**0**
relax	**4**	**3**	**2**	**1**	**0**

Name:

Vocabulary Post-tests 1:

A. Production Test

Fill in the blanks with words from the passages you have just heard.

1. The fall was _____ – it took place over just three months.
2. The Johnson Company's prices were very _____ in the first quarter of the year.
3. This was not a very good performance but at least we had stopped the _____ in sales.
4. They were able to sell their computers at a much cheaper price than we could sell our own computers both overseas in the international market and at home in the _____ market.
5. But we ended with stronger sales than we expected and I am very _____ for next year.
6. This is important so we know what _____ they want. We need to know whether they want to stay at the conference centre or just attend daily.
7. Many of the buildings were actually designed by the students from the _____ Department of my university.
8. I'm sorry but we have just run out of conference bags, but one will be _____ later if you want to come by the registration desk.
9. My major is _____. I am very interested in language and my university also specializes in this subject as well.
10. My address will change when I graduate. So I don't have a _____ address right now except the university.

B. Form Test

One of the words in each of the lists below occurred in the listening passages you have just heard. Circle the word. Below each list say how certain you are by entering a percentage in the box (e.g. if you were totally certain put 100%, but if you are very unsure you might put 20%).

1. abroad - corrupt - about - alright - abrupt

2. declare - decline - declaim - incline - reclaim

3. compare - complete - repetitive - receptive - competitive

4. horrific - dormitory - domestic -dominant - mystic

5. optional - statistic – optimistic – mysterious – opportunity

6. archaeology - technique - architecture - manufacture - texture

7. available - manageable - alienate – alligned - advantageous

8. accompany – accommodation – accomplish – accumulation - combination

9. lingual - linguistics – logistics – statistics - linguist

10. pregnant - permanent – perpetual – dominant – eminent

C. Reception Test
Match the words with appropriate meanings.

1 complicated
2 chemical _____ exceptional; higher
3 optimistic _____ difficult and complex
4 advanced _____ expecting good things
5 stable

1 slight
2 competitive _____ annoying
3 solemn _____ contesting and challenging
4 steady _____ developing and growing gradually
5 irritating

1. foam
2. seesaw _____ decrease
3. monarch _____ bubbles; cream
4. decline _____ emperor; majesty
5. hammock

1 convenient
2. positive _____ home-made
3 domestic _____ at hand; feasible
4. scholarly _____ absolute; affirmative
5. stuffy

1 abrupt
2 flabby _____ unwilling; hesitant
3 reluctant _____ cheerless; dull
4 gloomy _____ quick; sudden
5. joyful

1. earnest
2. callous _____ aimless; drifting
3. available _____ devoted; diligent
4. shrewd _____ can be found
5. vagrant

1. rapture
2. architecture _____ arrangement; chart
3. kiosk _____ booth
4. scheme _____ study of buildings
5. repertoire

1. forum
2. souvenir _____ study of language
3. linguistics _____ gift; memento
4. bronze _____ meeting; assembly
5. ghetto

1. phonetic
2. permanent _____ lasting
3. shaggy _____ motherly; affectionate
4. reticent _____ hairy; furry
5. maternal

1. accommodation
2. mulberry _____ being alone
3. pilgrim _____ place to live or stay
4. academy _____ institution; military school
5. solitude

Vocabulary Post-tests 2:

A. Production Test

Fill in the blanks with words from the passages you have just heard.

1. But I need to know when we can start using your _____. I am right, aren't I – these include the swimming pool, basketball court, and gym?
2. We're so sorry about the delay, Mr. Baker. But we're arranging to show _____ members around the center.
3. The 25th should be fine. But I shall have to speak to our _____ members first.
4. I am sorry for the delay in opening, and I'd like to offer you a _____ in the membership fee.
5. I'll have to check if that time is okay. Then I will get back to you to _____ the date and time.
6. For many years, dogs have been popular with people because they are extremely _____ to their owners.
7. Working together with their masters, they can _____ sheep. They collect them together and then protect them by watching over them carefully.
8. These dogs must be tough and brave so that they can cope with the _____ conditions of their work.
9. They can be sent anyplace where there is a disaster to _____ out lives and help save them.
10. Many countries _____ people from importing things like drugs, fresh fruit or meat.

B. Form Test

One of the words in each of the lists below occurred in the listening passages you have just heard. Circle the word. Below each list say how certain you are by entering a percentage in the box (e.g. if you were totally certain put 100%, but if you are very unsure you might put 20%).

1. indivisible - individual - industrial - indispensable - indelible

2. repulsion - reaction - reduction – redemption - restriction

3. confine – confound – confuse – confer - confirm

4. register – regent – regiment –region - refrigerator

5. familiarities – fantasies - facilities - fatalities – faculties

6. hark - half - harm - harsh - hard

7. sneak - sniff - sneer - snip - sneeze

8. herb – herd – hurl – hurt – hertz

9. obedient – ingredient – orient – deviant - gradient

10. exhibit – habit – prohibit – orbit – profit

C. Reception Test
Match the words with appropriate meanings.

1. linger
2. murmur _____ write one's name down for something
3. petrify _____ remain behind
4. register _____ make very frightened
5. muddle

1. shark
2. reduction _____ a type of fierce, flesh-easting fish
3. passage _____ a solemn ceremony
4. magnet _____ a smaller payment
5. rite

1. magpie
2. slipper _____ services provided by an organization
3. picnic _____ a black-and-white bird
4. quartet _____ a very informal meal in the open air
5. facilities

1. edible
2. individual _____ showing kindness to guests
3. moral _____ fit to be eaten
4. judicial _____ single
5. hospitable

1. motivate
2. govern _____ give a loud, deep cry
3. hover _____ make sure
4. confirm _____ remain in the air without moving
5. roar

1. fascinating
2. peaceful _____ difficult
3. flat _____ very interesting
4. harsh _____ level
5. robust

1. mutter
2. sniff _____ doze or sleep lightly
3. resent _____ feel annoyed about something
4. grasp _____ draw air into nose to smell something
5. snooze

1. herd
2. invade _____ collect together
3. press _____ look very quickly
4. glance _____ enter with army
5. presume

1. gobble
2. prohibit _____ promise
3. groan _____ leave or withdraw from a place
4. evacuate _____ forbid
5. pledge

1. obscure
2. conscious _____ willing to do what one is told to do
3. hollow _____ not clear; difficult to see
4. obedient _____ having an empty space inside
5. mature

Appendix E: Appendix Tables of Chapter Five

Table 1. ANOVA of Listening Comprehension Scores in Cycle 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	278.512	3	92.837	23.980	.000
Within Groups	662.026	171	3.871		
Total	940.537	174			

Table 2. ANOVA of Listening Comprehension Scores in Cycle 2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	110.275	3	36.758	12.009	.000
Within Groups	508.101	166	3.061		
Total	618.376	169			

Table 3. ANOVA of VA under Different Listening Conditions in Cycle 1

Vocabulary Tests		Sum of Squares	df	Mean Square	F	Sig.
Production (Immediate)	Between Groups	1.768	3	.589	2.979	.033
	Within Groups	33.640	170	.198		
	Total	35.408	173			
Form (Immediate)	Between Groups	25.894	3	8.631	3.774	.012
	Within Groups	391.055	171	2.287		
	Total	416.949	174			
Reception (Immediate)	Between Groups	24.099	3	8.033	2.662	.050
	Within Groups	515.936	171	3.017		
	Total	540.034	174			
Production (Delayed)	Between Groups	1.172	3	.391	1.981	.119
	Within Groups	33.518	170	.197		
	Total	34.690	173			
Form (Delayed)	Between Groups	15.627	3	5.209	1.915	.129
	Within Groups	462.401	170	2.720		
	Total	478.029	173			
Reception (Delayed)	Between Groups	5.594	3	1.865	.556	.645
	Within Groups	570.021	170	3.353		
	Total	575.615	173			

Table 4. Scheffe Test of Production Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	-.11	.094	.694	-.38	.15
	Group A	Group C	-.20	.094	.199	-.47	.06
	Group A	Group D	-.27	.096	.054	-.54	.00
	Group B	Group C	-.09	.095	.821	-.36	.18
	Group B	Group D	-.15	.097	.466	-.43	.12
	Group C	Group D	-.06	.097	.933	-.34	.21
Delayed test scores	Group A	Group B	-.07	.094	.910	-.34	.20
	Group A	Group C	-.09	.094	.825	-.35	.18
	Group A	Group D	-.23	.096	.131	-.50	.04
	Group B	Group C	-.02	.094	.998	-.29	.25
	Group B	Group D	-.16	.097	.431	-.44	.11
	Group C	Group D	-.14	.096	.542	-.41	.13

Table 5. Scheffe Test of Form Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	-.84	.321	.078	-1.75	.06
	Group A	Group C	-.53	.319	.426	-1.43	.37
	Group A	Group D	-1.01(*)	.326	.025	-1.93	-.09
	Group B	Group C	.31	.321	.817	-.60	1.22
	Group B	Group D	-.17	.328	.967	-1.09	.76
	Group C	Group D	-.48	.326	.545	-1.40	.44
Delayed test scores	Group A	Group B	-.54	.350	.504	-1.52	.45
	Group A	Group C	-.09	.348	.996	-1.07	.89
	Group A	Group D	-.73	.358	.256	-1.74	.29
	Group B	Group C	.45	.350	.652	-.54	1.43
	Group B	Group D	-.19	.360	.965	-1.21	.83
	Group C	Group D	-.64	.358	.372	-1.65	.38

Table 6. Scheffe Test of Reception Test Scores in Cycle 1

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	-.85	.368	.152	-1.89	.19
	Group A	Group C	-.93	.366	.094	-1.97	.10
	Group A	Group D	-.66	.375	.386	-1.71	.40
	Group B	Group C	-.08	.368	.997	-1.12	.96
	Group B	Group D	.20	.377	.965	-.87	1.26
	Group C	Group D	.28	.375	.908	-.78	1.34
Delayed test scores	Group A	Group B	-.46	.388	.699	-1.56	.63
	Group A	Group C	-.13	.386	.989	-1.22	.96
	Group A	Group D	-.33	.398	.878	-1.45	.80
	Group B	Group C	.33	.388	.867	-.77	1.43
	Group B	Group D	.14	.400	.990	-.99	1.27
	Group C	Group D	-.19	.398	.971	-1.32	.93

Table 7. ANOVA of VA under Different Listening Conditions in Cycle 2

Vocabulary Tests		Sum of Squares	df	Mean Square	F	Sig.
Production (Immediate)	Between Groups	.110	3	.037	.809	.491
	Within Groups	7.683	170	.045		
	Total	7.793	173			
Form (Immediate)	Between Groups	20.473	3	6.824	2.814	.041
	Within Groups	409.839	169	2.425		
	Total	430.312	172			
Reception (Immediate)	Between Groups	21.807	3	7.269	2.676	.049
	Within Groups	459.118	169	2.717		
	Total	480.925	172			
Production (Delayed)	Between Groups	.100	3	.033	.597	.618
	Within Groups	9.534	171	.056		
	Total	9.634	174			
Form (Delayed)	Between Groups	20.849	3	6.950	2.120	.099
	Within Groups	557.180	170	3.278		
	Total	578.029	173			
Reception (Delayed)	Between Groups	9.658	3	3.219	1.354	.259
	Within Groups	404.250	170	2.378		
	Total	413.908	173			

Table 8. Scheffe Test of Production Test Scores in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	.02	.045	.974	-.11	.15
	Group A	Group C	.07	.045	.526	-.06	.19
	Group A	Group D	.04	.047	.855	-.09	.17
	Group B	Group C	.05	.045	.794	-.08	.17
	Group B	Group D	.02	.047	.981	-.11	.15
	Group C	Group D	-.03	.046	.959	-.16	.11
Delayed test scores	Group A	Group B	.00	.050	1.000	-.14	.14
	Group A	Group C	-.04	.050	.860	-.18	.10
	Group A	Group D	-.05	.051	.787	-.20	.09
	Group B	Group C	-.04	.050	.866	-.18	.10
	Group B	Group D	-.05	.052	.795	-.20	.09
	Group C	Group D	-.01	.051	.998	-.15	.13

Table 9 Scheffe Test of Form Test Scores in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	-.28	.332	.873	-1.22	.66
	Group A	Group C	-.06	.327	.999	-.98	.87
	Group A	Group D	-.89	.341	.081	-1.85	.07
	Group B	Group C	.22	.330	.929	-.71	1.16
	Group B	Group D	-.61	.344	.367	-1.59	.36
	Group C	Group D	-.84	.339	.111	-1.79	.12
Delayed test scores	Group A	Group B	-.69	.386	.362	-1.78	.40
	Group A	Group C	-.51	.380	.610	-1.58	.56
	Group A	Group D	-.95	.393	.124	-2.06	.16
	Group B	Group C	.18	.384	.974	-.90	1.26
	Group B	Group D	-.26	.398	.936	-1.38	.87
	Group C	Group D	-.44	.391	.742	-1.54	.67

Table 10. Scheffe Test of Reception Test Scores in Cycle 2

Dependent Variable	(I) Listening condition	(J) Listening condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Immediate test scores	Group A	Group B	-.41	.351	.719	-1.40	.58
	Group A	Group C	.24	.346	.918	-.73	1.22
	Group A	Group D	-.68	.361	.314	-1.70	.34
	Group B	Group C	.65	.350	.326	-.33	1.64
	Group B	Group D	-.27	.364	.904	-1.30	.75
	Group C	Group D	-.93	.359	.087	-1.94	.09
Delayed test scores	Group A	Group B	-.36	.329	.751	-1.29	.57
	Group A	Group C	-.07	.323	.997	-.98	.84
	Group A	Group D	-.60	.335	.368	-1.54	.35
	Group B	Group C	.29	.327	.850	-.63	1.22
	Group B	Group D	-.24	.339	.922	-1.19	.72
	Group C	Group D	-.53	.333	.477	-1.47	.41

* The mean difference is significant at the 0.05 level.

Appendix F: Appendix Tables of Chapter Six

Table 1. Comparison of the Four Groups in Terms of Each Metacognitive Listening Awareness Aspect for Cycle 1

	Listening condition I	Group A	Group A	Group A	Group B	Group B	Group C
	Listening condition II	Group B	Group C	Group D	Group C	Group D	Group D
PE	Mean Dif. (I-II)	.2137	.3822	.3370	.1685	.1233	-.0452
	Sig.	.651	.155	.272	.797	.914	.995
DA	Mean Dif. (I-II)	-.0263	.3111	.2531	.3374	.2794	-.0580
	Sig.	.999	.390	.592	.321	.513	.992
PK	Mean Dif. (I-II)	-.0987	-.0667	.1050	.0320	.2036	.1716
	Sig.	.985	.995	.983	.999	.894	.932
MT	Mean Dif. (I-II)	-.0906	-.0148	-.1368	.0758	-.0462	-.1220
	Sig.	.977	1.000	.930	.986	.997	.949
PS	Mean Dif. (I-II)	.2614	.3185	.3703	.0571	.1088	.0518
	Sig.	.432	.250	.152	.988	.928	.991

Note. Mean Dif. = Mean Difference; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving.

Table 2. Comparison of the Four Groups in Terms of Each Metacognitive Listening Awareness Aspect for Cycle 2

	Listening condition I	Group A	Group A	Group A	Group B	Group B	Group C
	Listening condition II	Group B	Group C	Group D	Group C	Group D	Group D
PE	Mean Dif. (I-II)	-.1346	-.1501	.0113	-.0156	.1459	.1614
	Sig.	.888	.845	1.000	1.000	.875	.831
DA	Mean Dif. (I-II)	.1584	.2086	.2868	.0502	.1284	.0782
	Sig.	.864	.724	.515	.995	.930	.982
PK	Mean Dif. (I-II)	-.1166	-.0723	-.0439	.0443	.0727	.0284
	Sig.	.974	.993	.999	.998	.994	1.000
MT	Mean Dif. (I-II)	-.1158	-.0256	-.2205	.0902	-.1048	-.1949
	Sig.	.958	.999	.783	.979	.971	.838
PS	Mean Dif. (I-II)	.0121	-.0002	.1000	-.0124	.0879	.1002
	Sig.	1.000	1.000	.949	1.000	.966	.948

Note. Mean Dif. = Mean Difference; PE = Planning-Evaluation; DA = Directed Attention; PK = Person Knowledge; MT = Mental Translation; PS = Problem-Solving.

Table 3. Pearson Correlations of the Participants' Metacognitive Listening Awareness and Listening Comprehension for Cycle 1

Cycle 1		Planning-Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem-Solving	MA
Group A	Correlation	.126	.030	.176	-.033	.198	.173
(N = 44)	Sig.	.410	.845	.249	.828	.193	.255
Group B	Correlation	-.089	.104	.297	-.326(*)	.164	.046
(N = 43)	Sig.	.564	.501	.050	.031	.287	.766
Group C	Correlation	.166	.038	.139	-.315(*)	.254	.109
(N = 45)	Sig.	.275	.805	.364	.035	.092	.474
Group D	Correlation	.155	.165	.137	-.211	.083	.117
(N = 40)	Sig.	.333	.303	.394	.185	.605	.465
Whole Sample	Correlation	.008	.031	.154(*)	-.163(*)	.058	.043
(N = 172)	Sig.	.919	.684	.042	0.031	.447	.571

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; *$p < .05$.

Table 4. Pearson Correlations of the Participants' Metacognitive Listening Awareness and Listening Comprehension for Cycle 2

Circle 1		Planning-Evaluation	Directed Attention	Person Knowledge	Mental Translation	Problem-Solving	MA
Group A	Correlation	.224	.300	.318(*)	.257	.110	.382(*)
(N = 44)	Sig.	.153	.054	.040	.101	.490	. 013
Group B	Correlation	.154	.188	.337(*)	-.180	.218	.276
(N = 43)	Sig.	.323	.227	.027	.247	.160	.073
Group C	Correlation	-.021	.016	-.234	-.321(*)	-.137	-.275
(N = 45)	Sig.	.889	.914	.118	.029	.364	.065
Group D	Correlation	.104	.213	.086	-.182	.184	.135
(N = 40)	Sig.	.528	.193	.601	.268	.263	.412
Whole Sample	Correlation	.110	.124	.112	-.081	.070	.113
(N = 172)	Sig.	.152	.108	.145	.296	.361	.143

Note. Group A = listening one time; Group B = listening three times; Group C = schema raising + listening three times; Group D = inferencing training + listening three times; *$p < .05$.

Table 5. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group A in Cycle 1

		Immediate			Delayed		
Cycle 1		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.(a)	-.298(*)	-.221	-.129	-.181	.033
Evaluation	Sig.	.	.047	.144	.397	.234	.830
Directed	Correlation	.(a)	-.206	.023	-.143	-.183	.040
Attention	Sig.	.	.175	.880	.348	.228	.793
Person	Correlation	.(a)	-.107	-.145	.080	-.273	.105
Knowledge	Sig.	.	.484	.343	.603	.070	.491
Mental	Correlation	.(a)	.167	.177	.275	.104	.202
Translation	Sig.	.	.274	.244	.067	.495	.182
Problem-	Correlation	.(a)	-.070	-.016	.283	.057	.094
Solving	Sig.	.	.648	.915	.059	.710	.537

Note. Group A = listening one time; a = cannot be computed because at least one of the variables is constant; *$p < .05$.

Table 6. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group B in Cycle 1

		Immediate			Delayed		
Cycle 1		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.350(*)	-.091	.167	.169	.110	.275
Evaluation	Sig.	.020	.555	.279	.272	.477	.071
Directed	Correlation	.230	.171	.368(*)	.214	.226	.175
Attention	Sig.	.134	.266	.014	.164	.139	.255
Person	Correlation	.336(*)	.274	.153	.020	.035	-.032
Knowledge	Sig.	.026	.071	.322	.897	.822	.835
Mental	Correlation	-.179	-.217	-.400(**)	-.145	-.075	.049
Translation	Sig.	.246	.157	.007	.347	.626	.752
Problem-	Correlation	.366(*)	.355(*)	.529(**)	.226	.036	.058
Solving	Sig.	.015	.018	.000	.141	.814	.708

Note. Group B = listening three times; *$p < .05$; **$p < .01$.

Table 7. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group C in Cycle 1

		Immediate			Delayed		
Cycle 1		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.000	.008	.185	.031	.096	.125
Evaluation	Sig.	1.000	.960	.224	.841	.537	.418
Directed	Correlation	-.114	.184	.366(*)	-.170	.258	.254
Attention	Sig.	.461	.226	.013	.271	.091	.096
Person	Correlation	.184	.108	-.026	.137	.135	.100
Knowledge	Sig.	.232	.480	.867	.377	.382	.516
Mental	Correlation	-.053	.110	-.157	.075	-.086	-.095
Translation	Sig.	.731	.472	.303	.627	.580	.540
Problem-	Correlation	.239	.117	.062	.042	.063	.233
Solving	Sig.	.119	.444	.688	.788	.682	.128

Note. Group C = schema raising + listening three times; *$p < .05$.

Table 8. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group D in Cycle 1

		Immediate			Delayed		
Cycle 1		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.075	-.314(*)	-.065	.119	-.260	.101
Evaluation	Sig.	.642	.046	.687	.466	.106	.536
Directed	Correlation	.094	-.108	.011	.198	-.155	.003
Attention	Sig.	.557	.503	.944	.220	.338	.985
Person	Correlation	.023	.144	.187	.255	.279	.155
Knowledge	Sig.	.886	.370	.241	.112	.082	.339
Mental	Correlation	-.129	-.087	-.403(**)	-.391(*)	-.222	-.228
Translation	Sig.	.421	.589	.009	.013	.169	.157
Problem-	Correlation	-.140	-.342(*)	-.060	.098	-.434(**)	.179
Solving	Sig.	.384	.029	.710	.548	.005	.268

Note. Group D = inferencing training + listening three times; *$p < .05$; **$p < .01$.

Table 9. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group A in Cycle 2

		Immediate			Delayed		
Circle 2		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	-.038	.200	.159	-.017	.006	.123
Evaluation	Sig.	.802	.188	.296	.914	.967	.422
Directed	Correlation	-.003	.217	.452(**)	.027	.210	.187
Attention	Sig.	.987	.153	.002	.862	.166	.219
Person	Correlation	-.063	-.149	-.086	-.092	-.395(**)	.152
Knowledge	Sig.	.680	.328	.576	.547	.007	.320
Mental	Correlation	-.026	.179	-.155	-.013	.004	-.007
Translation	Sig.	.866	.239	.311	.932	.979	.963
Problem-	Correlation	.019	.450(**)	.169	.002	.195	.039
Solving	Sig.	.902	.002	.267	.988	.199	.797

Note. Group A = listening one time; *p < .05; **p < .01.

Table 10. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group B in Cycle 2

		Immediate			Delayed		
Circle 2		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.377(*)	-.009	.038	.218	.295	-.078
Evaluation	Sig.	.013	.953	.808	.159	.058	.625
Directed	Correlation	.295	.270	.269	.185	.259	.354(*)
Attention	Sig.	.055	.080	.081	.236	.098	.022
Person	Correlation	.073	-.011	.001	-.062	-.039	.246
Knowledge	Sig.	.642	.945	.996	.692	.805	.117
Mental	Correlation	.026	.202	.177	-.011	-.123	.109
Translation	Sig.	.868	.194	.257	.945	.438	.493
Problem-	Correlation	.266	.288	.346(*)	.202	.190	.418(**)
Solving	Sig.	.085	.061	.023	.194	.228	.006

Note. Group B = listening three times; *p < .05; **p < .01.

Table 11. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group C in Cycle 2

		Immediate			Delayed		
Circle 2		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	.(a)	.289	.059	-.075	.071	-.152
Evaluation	Sig.	.	.051	.698	.618	.640	.313
Directed	Correlation	.(a)	.033	.043	-.054	.203	.012
Attention	Sig.	.	.829	.775	.721	.176	.936
Person	Correlation	.(a)	-.171	-.129	-.014	-.282	-.121
Knowledge	Sig.	.	.256	.391	.928	.058	.422
Mental	Correlation	.(a)	-.148	.130	.260	-.018	.179
Translation	Sig.	.	.326	.388	.081	.906	.234
Problem-	Correlation	.(a)	-.120	-.093	.098	.109	-.272
Solving	Sig.	.	.426	.540	.516	.472	.067

Note. Group C = schema raising + listening three times; a = cannot be computed because at least one of the variables is constant.

Table 12. Pearson Correlations of the Participants' Metacognitive Awareness and Their Vocabulary Acquisition for Group D in Cycle 2

		Immediate			Delayed		
Circle 2		Production	Form	Reception	Production	Form	Reception
Planning-	Correlation	-.018	.015	.159	-.058	.262	.205
Evaluation	Sig.	.914	.927	.334	.727	.107	.210
Directed	Correlation	.087	.020	.114	.009	-.041	-.104
Attention	Sig.	.600	.905	.491	.957	.804	.527
Person	Correlation	.084	.073	.105	.042	-.049	.417(**)
Knowledge	Sig.	.610	.661	.525	.801	.766	.008
Mental	Correlation	.185	.169	.057	-.057	.222	.115
Translation	Sig.	.260	.302	.731	.732	.175	.485
Problem-	Correlation	-.011	-.257	.378(*)	-.116	.321(*)	.259
Solving	Sig.	.948	.115	.018	.482	.046	.111

Note. Group D = inferencing training + listening three times; *$p < .05$; **$p < .01$.

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