國立政治大學英國語文學系

碩士學位論文

針對台灣高中生聽力後設認知覺察及聽力表現影響之研究

A Study on Taiwanese High School EFL Students' Listening Metacognitive Awareness and Its Relationship with the Performance on Listening Comprehension

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A Study on Taiwanese High School EFL Students' Listening Metacognitive Awareness and Its Relationship with the Performance on Listening Comprehension

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To Professor Li-Yuan Hsu
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國立政治大學英國語文學系碩士班

碩士論文提要

論文名稱：針對台灣高中生聽力後設認知覺察及聽力表現影響之研究

指導教授：許麗媛 博士

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論文提要內容：

聽力在溝通中扮演重要角色，但在以英語為外語(EFL)之領域下普遍是較為忽略的能力 (Mendelsohn, 1994) 。 在台灣，學生英文聽力大多是以聽力測驗而非系統化的教學去培養而成，因此學生幾乎沒機會去檢視跟反思自己的聽力狀況。本研究旨在探究 81 個台灣高中 生的英文聽力後設認知覺察能力及聽力策略的使用。研究方法為量化與質化並行的混和式研究。資料蒐集方法為學生先透過大考中心聽力測驗模擬考題進行測驗，再填寫改編自 Vandergrift et al. (2006) 後設認知覺察聽力中文問卷及接受個別訪談。

研究結果顯示學生普遍後設認知覺察能力較為不足，另外在後設認知問卷的五個項目中，以專注力及問題解決方面的覺察最為顯著，在事前規劃及事後評估自身聽力的能力則最缺乏。研究也發現學生的聽力後設認知覺察能力與聽力理解力呈現正相關，覺察能力越高，通常學生的聽力理解力也越好。研究者進而將學生依測驗分數分為高分與低分組，並發現在量化與質性資料中，兩組在聽力後設認知與策略使用上均有顯著的差距。最後，本研究針對教師、學生及出版者提供提升高中生英語聽力後設認知覺察能力與策略使用之相關建議。

關鍵字:聽力後設認知覺察、聽力策略、聽力表現、以英語為外語

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ABSTRACT

Listening, which plays an essential role in communication, has somewhat been neglected and given less instructional time in EFL circumstances (Mendelsohn, 1994). In Taiwan, English listening skill is normally trained through listening tests rather than structured teaching. For this reason, students barely have opportunities to examine and reflect on their listening learning process. Therefore, the present study aims to investigate 81 Taiwanese high school students' English listening metacognitive awareness and strategy use and its relationship to students' listening performance. Data were collected from three sources: Test of English Listening Comprehension (TELC), adapted version of Vandergrift et al. (2006) Metacognitive Awareness Listening Questionnaire (MALQ), and an introspective interview.

The results of the study showed that students' overall listening metacognitive awareness was relatively low. Furthermore, among the five categories of MALQ, while students had the highest mean score in two categories, Direct Attention, and Problem Solving, they had the lowest mean in the category of Planning and Evaluation, indicating students' lack of training in this area. The study also revealed that there was a significantly positive correlation between students' listening test performance and listening metacognitive awareness. Furthermore, both quantitative and qualitative results indicated that there were important differences between more proficient and less proficient listeners' states of metacognitive awareness and their patterns of strategy use. In light of these findings, suggestions for teachers, students, and publishers to improve high school students' listening metacognitive awareness and strategy use are provided.

Keywords: Listening Metacognitive Awareness, Listening Strategies, Listening Performance, English as a Foreign Language (EFL)

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CHAPTER ONE

Introduction

Background and Motivation of the Study

Listening, one of the four skills in language acquisition, is vital for communication. Listening takes up almost half of the total time spent on communication (Mendelsohn, 1994). With such a high proportion, it is of great importance for English as a foreign language (EFL) learners to have adequate listening comprehension in order to communicate effectively. However, listening is considered a difficult task by many EFL learners. Scholars also pointed out that listening has long been a somewhat neglected and poorly taught aspect of English in many EFL programs around the world (Mendelsohn, 1994).

In Taiwan, listening had not been included in both high school and university entrance exams until 2014. Though in recent years, the English curriculum has gradually recognized the importance of developing students' listening skills, listening instruction is still largely overlooked in most schools. Because of the limited time for the instruction in the classroom and the focus on exam preparation, teachers tend to primarily concentrate on teaching reading and writing skills which form the major test content in the entrance exam. Moreover, when listening is taught in the classroom, it is very common that students just listen to pre-recorded listening passages as part of a comprehension test. Listening instruction is more like practicing listening tests in the classroom.

However, listening is a complex process of interpretation in which listeners match what they hear with what they already know (Rost, 2002). Listening is also viewed as an active process and vital to the language learning process (Goh, 2008).

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Given the importance of listening in communication, there is a need to investigate the processes language learners use to achieve listening comprehension under current education so as to call for more principled and effective instruction for students to improve listening. An emphasis on listening comprehension will help students to decode English input and to achieve greater success in English learning (Ahmadi & Gilakjani, 2011). Listening comprehension includes both bottom-up and top-down processing. Bottom-up processing involves decoding based on the segmenting of the individual words out of the stream of speech (Batova, 2013). Top-down processing develops the learners' ability to use keywords to construct the schema of a discourse, infer the setting for a text (Richards, 2008). Combining this two processing is essential to reach listening comprehension.

In addition to the importance of bottom-up and top-down processes involved in listening comprehension, Goh (2008) emphasized the effectiveness of providing metacognitive instruction to improve L2 learners' listening comprehension. Metacognitive awareness, or metacognition, was first defined by Flavell (1979) as one's ability to understand, control and manipulate his or her own cognitive awareness to maximize learning. Based on Flavell's framework, Vandergrift, Goh, and Mareschal (2006) designed an instrument, Metacognitive Awareness Listening Questionnaire (MALQ), to help learners assess their metacognitive awareness when they receive the listening input. Vandergrift and Goh (2012) further proposed a metacognitive model for L2 listening, dividing metacognitive awareness into three categories, metacognitive experience, knowledge, and strategy use. Several studies have indicated the positive impact of metacognitive awareness in listening comprehension. Some reported the improvement of students' listening performance with metacognitive strategy instruction (Shams & Rahimirad, 2014; Zeng, 2014), others showed that students with metacognitive awareness normally had better

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language proficiency (Bidabadi & Yamat, 2011; Liu, 2008; Vandergrift, 2003).

Despite the research effort into the investigation of L2 listeners' metacognitive awareness and skills, most studies focus on college students in the EFL context. In Taiwan, students in high schools rarely have opportunities to examine their own listening processes in the English classroom let alone exploration of their metacognitive listening process. Moreover, few studies examine the interrelationship between students' listening metacognitive awareness and their actual strategy use.

Purpose of the Study

The study aims to investigate a group of senior high school students' overall metacognitive awareness about listening in English as well as their metacognitive knowledge and use of strategies when completing a listening comprehension test. Three research questions were proposed to help examine the learners' metacognitive awareness of listening in English and its relationship to their listening performance.

1. What is the state of Taiwanese high school students' English listening metacognitive awareness and strategy as measured by MALQ?
2. Is there a relationship between senior high school students' level of English listening metacognitive awareness and their listening performance?
3. Do students with different listening proficiency show any differences in their level of English listening metacognitive awareness? Specifically, are there any differences between students from the more proficient and less proficient groups in terms of the five categories of metacognitive awareness (i.e. directed attention, mental translation, person knowledge, planning and evaluation, and problem solving)?

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CHAPTER TWO

Literature Review

The purpose of this chapter is to provide the theoretical framework underlying listening comprehension and listening metacognitive awareness. The following review is divided into two major parts: the theoretical framework underlying listening comprehension and listening metacognitive awareness. Under listening comprehension, the process of listening comprehension and factors that influence listening comprehension were introduced. For the listening metacognitive awareness, the conception of metacognitive awareness and metacognitive framework for L2 listening were first portrayed. Secondly, the empirical research on metacognitive awareness was divided into two parts. In the first part, the relationship between metacognitive awareness and learner factors and learning factors were reviewed. In the second part, MALQ as an important tool was emphasized. The use of MALQ as the measurement for strategy instruction and for students' use of listening cognitive and metacognitive strategies under test-taking conditions were discussed.

Listening Comprehension

Listening used to be regarded as a receptive skill that learners only listen passively from the audio material. In fact, listening comprehension can be viewed theoretically as an active process in which individuals focus on selected aspects of aural input, construct meaning from passages, and relate what they hear to existing knowledge (O'malley, Chamot & Kupper, 1989). Moreover, to put listening comprehension at a higher level, Jinhong (2011) proposed that listening comprehension is creative ability. That is, listeners not only construct meaning from given information, they also assign meanings based on their own experience and background knowledge, which may result in different interpretations among listeners.

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Tran and Duong (2020) has concluded listening comprehension is a complex process that requires students to utilize both their knowledge of vocabulary, sounds, grammar, etc., and background knowledge to comprehend the auditory information.

Process of Listening Comprehension

The process of listening comprehension, according to Gilakjani and Ahmadi (2011), can be divided into three types, bottom-up, top-down, and interactive processing. Bottom-up processing refers to sound-decoding, from the smallest meaningful units (phonemes) to complete texts. To analyze the sentence structure smoothly, listeners' linguistic knowledge is emphasized, including phonological knowledge, morphological knowledge, lexical and syntactical knowledge. Extending from bottom-up processing, Field (2004) mentioned the concept of bottom-up dependency, indicating that second language learners used to expect that successful listening comprehension means they should understand each word in the passage. However, this expectation did not reflect the kind of listening that happened outside the classroom. Only relying on bottom-up processing is unable to relate learners to the text and achieve real listening comprehension.

On the other hand, top-down processing is like a schemata activation. Listeners actively construct the received input by employing their own schemata. That is, they try to understand the information by using prior knowledge and involve themselves within the context, so the context is the important element that needs to be considered in this process. Flowerdew and Miller (2005) defined top-down processing as the process that emphasizes the utilization of communicative context and personal prior knowledge (higher-level knowledge) in processing the input. Both the bottom-up and top-down processing are critical to achieving listening comprehension, only processing in the bottom-up will violate the interactive nature of listening; only processing in top-down will lead to the context without fundamental comprehension.

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Therefore, interactive processing is a win-win way to overcome the disadvantage of the two-extreme processing. With a similar concept, Coakley and Wolvin (1986) proposed that listening comprehension in an L2 (second language) is the process of receiving, focusing attention on, and assigning meaning to aural stimuli. To work the efficient listening processing, listeners need to bring prior knowledge of the topic, linguistic knowledge, and cognitive processes to the listening task, the aural text, and the interaction between the two.

Moreover, Imhof and Janusik (2006) has developed the whole process of aural information processing and learning by adapting a system model from Biggs (1999) about the study process. There are three stages in the model: person- and context-related factors, process, and results. The model is an integrated system that person factors and listening context can influence the process (quality of the processing) and the results (comprehension, learning, or affective factors). Vice versa, the result can affect the factors that affect the listening process and the listener's further efforts at processing subsequent input. Qualitative dimensions of the listening results can determine the levels of attention and effort the listener puts into understanding a speaker (Vandergrift & Goh, 2012). The three stages are interrelated and influence one another in the system.

Figure 1 indicates each phase intertwines with each other to form an integrated system.

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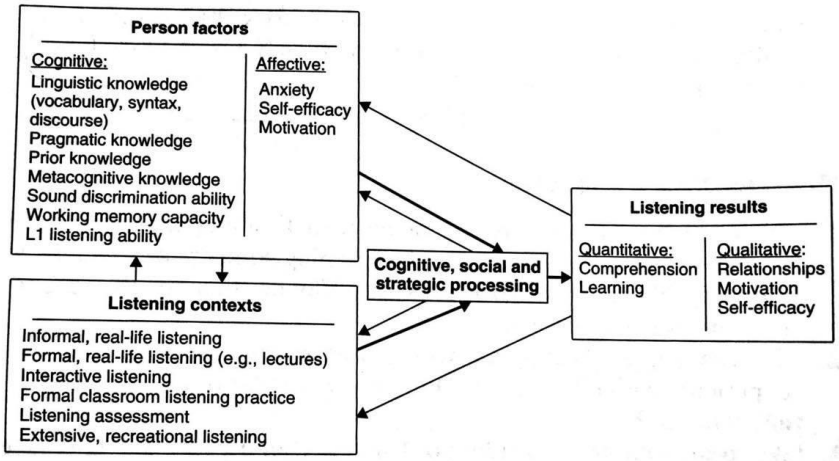

Figure 1 Systems Model of Listening (Imhof & Janusik, 2006; Vandergrift & Goh, 2012)

Factors that Influence Listening Comprehension

To cultivate comprehensive listening skills that can achieve listening comprehension, researchers need to know what factors will influence listeners' listening comprehension that differentiates more-skilled and less-skilled listeners. For learners, knowing the factors is important as well, since they can be more conscious about their listening process and remedy the negative factors.

Vanergrift and Goh (2012) has brought out the importance of person factors in the system model of listening by indicating that person factors are critical to listening success. Hung (2014) also proposed that the person factors including both cognitive and affective play the most vital role which leads to listening success. Imhof and Janusik (2006) further explained the influence of person factors is in both micro and macro levels. On a micro level, person factors have an impact on the quality and quantity of processing resources available for and allocated to the listening task, such as working memory capacity. On a macro level, these factors affect one's general monitoring of information processing and behavior regulation e.g. effort expended and motivation.

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Many theoretical frameworks have pointed out that listeners' listening processes have been greatly influenced by cognitive factors, which refers to the knowledge and ability that listeners are equipped to achieve listening comprehension. Factors including linguistic knowledge (vocabulary and syntactic knowledge), pragmatic knowledge, prior knowledge, metacognitive knowledge, sound discrimination ability, working memory capacity, and L1 listening ability. These cognitive factors can be categorized as listeners' language learning (e.g. sound discrimination ability, metacognition, and prior knowledge) and the result of the language learning process (e.g. L2 vocabulary and syntactic, discourse, and pragmatic knowledge).

Besides focusing on the linguistic input, the emotionally relevant learner characteristics will have a great impact on how listeners respond to a listening task thus influence the outcome of the listening task. Affective factors, which put emphasis on listeners' emotions, include three factors: anxiety, self-efficacy, and motivation. Due to the fleeting feature of listening input, listeners are unable to go back to the previous text for a check, which easily arouses their anxiety in the listening task. Golchi (2012) has examined the relationship of listening anxiety with listening strategy use and listening comprehension through three kinds of questionnaires and IELTS listening test. 63 IELTS learners whose mother tongue is Persian joined the research. The results revealed that listening anxiety had a negative correlation with listening comprehension and listening strategy use. The findings also showed that low anxious learners used metacognitive strategies more than high anxious learners. Self-efficacy is the basis for self-confidence and motivation, which refer to learners' beliefs about whether they can successfully complete the listening task. Bandura (1993) had indicated that people with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Therefore, with high self-efficacy, people are more motivated to attempt future tasks.

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Motivation, named the third affective factor, is the essential factor to prompt learners to do listening tasks. Vandergrift (2005), had provided an empirical experiment to examine the relationships among motivation, metacognition, and proficiency in listening comprehension. 57 junior high school students in Canada who learned French as a second language participated in the study to complete two questionnaires, motivation questionnaires, and metacognitive awareness questionnaires. The results support that there is a positive correlation between listening comprehension and amotivation. That is, learners with higher motivation perform better in the listening test compared to those with lower motivation.

Cognitive and affective factors including in person factors should be observed by teachers when giving listening instruction to their students. For students, perceiving their own situation relate to these factors is also critical for them to become better learners.

Metacognitive Awareness

Metacognition, which has been an essential issue in recent decades, is the critical ability for learners to think about their own thinking. According to Flavell (1976), metacognitive awareness, also known as metacognition, is "one's knowledge concerning one's own cognitive processes and products or anything related to them" (p. 232).

With such awareness, learners are able to be agents of themselves to monitor and regulate their own ways of thinking (Kluwe, 1982; Aiken, 1982). Learners who engage at the metacognitive level, according to Hacker et al. (2009), acquire a sense of agency as they gradually gain more control of their learning. That is, learners play an active role with their metacognition to perceive their own learning process so as to think about how to make learning more efficient.

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Metacognitive Framework for L2 Listening

Vandergrift and Goh (2012) proposed a metacognitive model for L2 listening which is composed of three components: metacognitive experience, metacognitive knowledge, and strategy use. The model is designed for two functions, self-appraisal and self-management in language learning (Paris & Winograd, 1990). Self-appraisal refers to personal reflection about one's capability and approaches to reach the cognitive goal. Self-management is an executive way to control and arrange cognitive aspects to solve a problem. To address these functions, three components work on different aspects to affect learners' metacognitive awareness.

Metacognitive Experience

Defined by Vandergrift and Goh (2012), metacognitive experience is the process when listeners hear an unfamiliar sound, they may tend to recall a strategy they used before to confront the new sound. Cross (2015) further described metacognitive experiences as the fleeting or lengthy feelings or thoughts that can occur in and about a cognitive activity. Within the cognitive activity, the function of metacognitive experience is sensing. Sensing the task will influence learners' metacognitive knowledge so as to determine strategy use for the problem. Therefore, the metacognitive experience can be regarded as the front-line guard to do the judgment about various listening tasks. It is useful for learners since it may lead to some productive application of strategies or further understanding about the task, themselves, and the world around them.

Metacognitive Knowledge

To put metacognition into the more concrete concept and add the executive function, Flavell (1979) categorized metacognitive awareness into metacognitive

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knowledge and metacognitive regulation.

Metacognitive knowledge is consciousness-focused and manages people's cognitive processes to ensure the realization of learning goals. Metacognitive knowledge can function as the knowing and self-appraisal stage in the metacognitive framework. There are three major variables in metacognitive knowledge, person, task, and strategy. Person variable is the belief about oneself and others as cognitive processors. Learners focus on intraindividual differences, such as one's progress or drawback that needs to be improved. They also notice interindividual differences, observe and compare people around them. Moreover, the universal of cognition bring learners the horizon to know or remember a social or nonsocial object of cognition. The key point about person variable is about the perception of person, whether self or others. As for task variable, it is defined as an understanding of the nature and demand of tasks. The difficulty, familiarity, complexity, trustworthiness, etc. can all be elements that need to be considered for learners when examining the task. Learners are thus required to know how the cognitive enterprise should best be managed and how successful they are likely to be in achieving the goals of the tasks. For the strategy variable, it is the perception about strategies and strategy use that facilitate learning. Learners are expected to concern what strategies are likely to be effective in achieving what sub-goals and goals in what sorts of cognitive undertakings.

Strategy Use

Metacognitive strategies involve the consideration of the process of listening and are related to three phases in listening, which are planning, monitoring, and evaluating (Liu & Goh 2006; Vandergrift, 2004; Zhang & Goh, 2006). It functions as the doing and self-manage stage in the metacognitive framework.

Richards and Burns (2012) has categorized three phases with clear explanation.

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As the first phase in listening, planning involves the listeners thinking about their goals and how to reach that goal. It can involve activating ideas or background knowledge (schemata) they have about the topic, thinking about and predicting some of the languages that may take place in the text, and identifying which may be the important part in the text. As for the second phase monitoring, it focuses on first checking the progress of one's own comprehension and examining whether the plan in the previous phase successfully matches with the listening activity. If not, the second step is to modify or change the direction that can better help learners to reach their goals. The last phase evaluating refers to judging the success of comprehension after finishing a listening task. Leaners also assess the goals and procedures set in the planning phase.

Thinking about learners' own listening process and using appropriate strategies can facilitate their listening comprehension and assist learners to deal with their listening difficulties and become better learners (O'Malley & Chamot, 1990; Richards & Burns, 2012). From the affective aspect, Goh (2008) also proposed that proper use of metacognitive strategy can improve students' confidence and make them less anxious in the listening process.

In general, metacognition enables learners to realize and understand the processes involved in achieving a learning goal and gives them a sense of personal agency (Bandura, 2001), they can thus be motivated to adjudge learning for greater success.

Empirical Research on Metacognitive Awareness and L2 Listening

Research on listening metacognitive awareness has been increasingly investigated and valued in recent years. To examine students' metacognitive awareness and their strategy use, the researchers collect data through various methods. The qualitative data collected from students' diaries or journals (Goh, 1997),

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think-aloud protocol (Vandergrift, 2003; Gu et al., 2009), interviews (Bormotova, 2010), etc. The quantitative method includes different questionnaires which are designed for exploring students' metacognitive awareness or strategy use (Rahimi & Katal, 2012; Goh & Hu, 2014; Lin & Gan, 2014; Rahimirad & Shams, 2014; Garrison & Akyol, 2015; Kök,2018). Moreover, there is research that used a mixed-method to examine students' metacognition. (Tavakoli,Shahraki & Rezazadeh,2012; Zeng, 2014)

Goh (1997) examined knowledge and beliefs learners have about learning to listen in a second or foreign language by collecting their self-reported diaries. The result showed that students were conscious of their learning process and the demands of listening to English and had specific beliefs about the factors that could improve their listening comprehension. The researcher had stressed the importance of investigating students' awareness of the mental process in this study. By examining students' reflection about their listening process, which is their metacognition, researchers are able to find how students in different situations use strategy and what their strategy tendency is to the listening task.

Metacognitive Awareness Listening Questionnaire (MALQ)

Studies designed in quantitative method or mixed-method mostly made use of the MALQ as an instrument to investigate learners' knowledge about strategy use and their reaction to the listening text (Baleghizadeh & Rahimi, 2011; Goh & Hu, 2014; Vandergrift & Tafaghodtari, 2010; Bozorgian, 2014; O'Bryan & Hegelheimer, 2009; Zeng, 2012).

The questionnaire is designed by Vandergrift, Goh, and Mareschal (2006), and is primarily based on the basis of learner instruction. Its purpose is to provide an instrument that can guide students to fulfill two essential features of metacognition, cognitive self-appraisals, and self-management (Paris & Winograd, 1990). That is, the questionnaire requires students to assess their own knowledge and strategy use in

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hypothetical situations and orchestrate different mental processes during problem solving. Vandergrift et al. (2006) used Flavell's (1979) theory of metacognitive knowledge and Weden's (1998) notion of metacognition, listening comprehension, and self-appraise as the basis to develop the questionnaire. Moreover, to confirm the validation of the questionnaire, the researchers first examined a group of participants (N=966) and concluded the strength of a five-factor model underlying the MALQ: problem-solving, planning and evaluation, translation, person knowledge, and directed attention. They then did the confirmatory factor analysis to establish and demonstrate a significant relationship between MALQ scores and actual listening behavior.

According to the five-factor guideline, 21 items were designed to elicit learners' self-assessment for the listening process. Learners who take part in MALQ are asked to respond to the 21 items by using a six-point scale which ranges from "strongly agree" to "strongly disagree". Since the main goal of the questionnaire is to give students opportunities to reflect on their own strategy use, there are no absolutely correct or wrong answers to each item. The total score added up from each item of the MALQ shows the degree of involvement of metacognitive awareness when learners receive the listening input.

Relationship between Metacognitive Strategy Uses and Learner Factors

Rahimi and Katal (2012) focused on the difference in educational level and compared the metacognitive listening strategies awareness between high school and college students. In the study, both students in high school and university in Iran participated in responding MALQ to examine their metacognitive awareness. The result revealed that high-school students were more aware of their metacognitive listening strategies in general in comparison to university students, especially in person knowledge and mental translation aspects, which indicated that older Iranian

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students are less aware of their perceived difficulty of listening skills, they are also lack of linguistically confident in L2 listening with a higher level of anxiety in L2 listening.

Considering the difference between genders, Tabeei, Tabrizi and Ahmadi (2013) investigated the effect of metacognitive strategy instruction on the listening performance by dividing high school students into two groups, experimental group with metacognitive strategy instruction that adopted from Chamot and O'Malley's model (1994) and the control group without treatment. The MALQ is used to examine students' listening metacognition. There was a listening comprehension test that served as a posttest and interviews to examine students' experiences in learning the new strategies.

The result indicated that the development of the experimental group was significantly more than the development of the control groups. At the end of the instructional period, the female and male experimental groups' development was approximately the same, so there are no significant differences between genders, which is also supported by other similar studies (Chou, 2019; Liliana & Lavinia,2011; Hashempou, Ghonsooly & Ghanizadeh, 2015).

Learners' various factors may somehow become the critical elements that make their metacognition awareness and strategy use different. The comparison between learner factors can reflect the cause-effect relationship of factors and learners' metacognition, which can thus enable researchers to think about how to take the suitable instruction and guidance for these learners.

Relationship between Metacognitive Awareness and Different Learning Factors

In terms of learners' proficiency level, Gu et al. (2009) examined students' listening strategy use by eliciting the verbal protocols from 18 participants in higher and lower proficiency levels in three different schools. The result showed that when

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facing the listening task, high-proficiency level pupils were not only more able to reconstruct, interpret, summarize and make inferences and predictions based on linguistic, but they also use their own real-world knowledge to understand and appreciate the passage. On the other hand, the low-proficiency level students had difficulty identifying the problem in the task. To figure out the problem, they tended to focus too much on the text, spending most of their time decoding and relistening.

Kök (2018) explored the relationship between students listening comprehension strategy use and their listening comprehension proficiency with regard to the group, level, and degree of strategy use. The researchers used a listening comprehension test to measure 44 Turkish students' proficiency level and the listening strategy use inventory to investigate their strategy use which includes three aspects, metacognitive, cognitive, and social affective. The result showed positive correlations between listening comprehension success and strategy use levels. Students with higher proficiency reflected higher strategy use in the metacognitive and cognitive aspects. It could be concluded that listening strategy use was good to predict listeners' listening comprehension proficiencies and listening comprehension proficiency was a good forecaster of listening strategy use in language learning as well.

Vandergrift (2003) added more change factors in the study. He examined the relationship between the types and frequency of both skilled and less skilled junior high school students' listening strategy applications. The comparison also included learners' language proficiency (based on the multiple-choice test), gender, listening ability, and learning style. Think-aloud protocols were used to collect data and analyzed qualitatively and quantitatively. The result showed that all listeners mostly used cognitive strategies, followed by metacognitive, and social affective strategies last. There was a correlation among strategy use, listening ability, and proficiency level; the higher the proficiency level learner possessed, the more metacognitive

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strategies they were reported to use. From the qualitative data, the result also reflected that more skilled listeners are more able to take control of their learning process and use more metacognitive strategies, primarily comprehension monitoring. As for less-skilled listeners, they tend to use more bottom-up processing such as direct translation. In this study, there is no difference existed between genders, and there were inconclusive results for learning styles and strategy use.

Besides students' proficiency levels, several studies pointed out the significant relationship between cognitive awareness and self-regulated learning (Sperling & Howard & Staley, 2004; Sungur, 2007; Cera, Mancini, & Antonietti, 2013; Zeng & Goh, 2018). For example, Lin and Gan (2014) explored Taiwanese students' metacognitive awareness of listening use and their self-regulated learning at the college level by using two types of the questionnaire that related to metacognitive awareness and self-regulatory Capacity respectively. The result indicated that students commonly have awareness toward metacognitive strategies and hold a moderate awareness of their self-regulated learning. There is a positive correlation between two variables, students with high metacognitive awareness of listening efficiently controlled their self-regulated learning. The study can thus be concluded that learners who knew their advantages and limitation in listening learning would have a clear awareness of their learning achievement and use an effective method to achieve success.

Sutudenama and Taghipur (2010) examined the relationship between motivation, metacognitive knowledge of learning strategies, and listening comprehension of Iranian English learners. They used MALQ and Gardner's belief and motivation questionnaire (1985) as quantitative data and think-aloud procedure as qualitative data. The result of the study indicated that listening comprehension and motivation were positively correlated, implying that highly motivated students understand more about

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what strategy they should use to respond to the listening task. The result of the study is in line with other studies that support the fact that students with greater use of metacognitive strategies also reported more motivational intensity (Vandergrift, 2005).

Furthermore, the interrelationship between metacognitive awareness and self-efficacy is also critical. Rahimi and Abedi (2014) explored this relationship by involving senior high school students to participate in MALQ and the English listening self-efficacy questionnaire (ELSEQ). The result of the study revealed that self-efficacy is significantly and positively related to metacognitive awareness of listening strategies in general. It further indicated that self-efficacy was found to be positively related to planning-evaluation strategies and problem-solving strategies and inversely related to mental translation strategies. The former two strategies need students' highly monitor and evaluate the self-learning process, so being able to use these two strategies will increase their confidence. The third one, mental strategies are those listeners must overcome to become skilled listeners. With higher awareness of these types of strategies, students are more likely to have higher listening self-efficacy. This finding corroborates the findings of other studies and confirms the fact that learners who have higher listening self-efficacy have more control over their listening tasks (Graham, 2008).

MALQ as A Measurement for Strategy Instruction

MALQ can be adopted as a measurement for the researchers to examine students' change of degree of their metacognition awareness after the strategy instruction.

Li (2009) examined the effect of applying listening strategy instruction in junior high school in Taiwan to examine students' change of listening metacognitive awareness by class observation, MALQ, and interview. 34 junior high school students participated in a five-month course. The result indicated that both students' listening

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comprehension and metacognitive awareness improved a lot. Though most of them thought "predicting the listening passage" was the most difficult strategy, they knew how to use listening strategies more properly after taking the English listening strategy course.

O'Bryan and Hegelheimer (2009) also used mixed-method to shed light on the development of four intermediate English as a second language (ESL) students' listening strategy use and awareness over the course of one semester by investigating the complexities of students' listening strategy use by level of language proficiency, the impact of repetition on listening strategies and the development of students' metacognitive awareness. Four participants had received listening input through podcasts and lectures for one semester. While participants completing the listening test, the researchers asked individual learners to voice their thoughts while working through a language task and developed the verbal protocol. At the end of the semester, the semi-structured interview was conducted to elicit the learners' evaluations about the change in their listening comprehension and whether they felt they were developing as strategic listeners. Last but not least, MALQ was used at the beginning and the end of the semester to further examine the difference in students' metacognition before and after. The result showed that students' problem-solving strategies use has increased most after one semester, but their mental translation strategies, which should be decreased since unsuccessful learners normally rely on such strategies, are also increased as well. However, through the interview, the only student in the lower-proficiency mentioned the reliance on this strategy. The studies thus suggested further studies can involve more participants.

Rahimirad and Shams (2014) also examined the effect of the strategy instruction by giving fifty Iran students who majored in English literature MALQ before and after six weeks of metacognitive strategy instruction based on the models proposed by

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Vandergrift and Tafaghodtari (2010). The researcher also conducted the interview after six weeks of instruction to understand whether students feel they had changed into more skilled listeners. Students were divided into an experimental group with instruction and a control group without instruction. After analyzing participants' responses to MALQ, the researcher found that EFL students who had received metacognitive strategy instruction indeed raised their metacognitive awareness during listening tasks and so as to make great progress in their listening performance. As for the results of the stimulated recall interview, it indicated that students had decreased their stress level and anxiety while listening because of applying planning strategies. Monitoring and evaluation strategies also made them more independent and self-regulated. Bozorgian and Alamdari (2018) tracked the advanced learners' multimedia listening comprehension and metacognitive awareness after the metacognitive instruction through dialogic interaction by MALQ and listening comprehension test. The result also indicated that metacognitive instruction through dialogic interaction did improve both the advanced learners' multimedia listening comprehension and their metacognitive awareness in listening.

Students' Use of Listening Cognitive and Metacognitive Strategies under Test-taking Condition

Cognitive and Metacognitive awareness are used by listeners whenever and wherever they receive the listening input. Listeners' strategy uses under the test-taking condition is worth exploring since strategies used under test-taking conditions are associated with the ongoing working memory to solve task problems (Gagné et al., 1993). To investigate the degree of students' metacognitive awareness and strategy use under test context, several studies used both the listening comprehension test and MALQ as a method to collect data.

Goh and Hu (2014) explored the relationship between metacognitive awareness

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and listening performance by eliciting data from 113 English-as-second- language (ESL) Chinese learners. Participants in the study needed to finish the official sample IELTS listening test as a listening proficiency test to present their listening competence. They also had to fill out the MALQ to examine how different aspects of metacognitive awareness represented by the MALQ factors related to listening performance and for individual differences in metacognitive awareness across these factors. The result showed that the participants' overall MALQ scores were found to be significantly and positively related to their scores in the IELTS official sample listening test, listeners at higher proficiency levels reported more strategies than did listeners at lower levels of proficiency. Moreover, the study also revealed that students mostly used directed attention and problem-solving strategies when answering the listening test. For the predictor part, it is found that person knowledge under the MALQ category is the most important positive predictor of L2 listening proficiency, which indicated that learners in this study who performed better in the listening test were also the ones who reported greater confidence and lower anxiety, which brought out the necessity for low-achievers to increase their confidence in listening. Problem-solving as the second positive predictor can also be inferred that higher proficiency listeners know how to operate more strategies while low proficiency learners limiting their use to a smaller range of strategies.

With the similar research purpose to investigate the relationship between students' metacognitive awareness and learning performance, Tavakoli, Shahraki, and Rezazadeh (2012) further incorporated both quantitative and qualitative research methods by applying stimulated-recall sessions to collect the qualitative data. The researchers first conducted a listening module of IELTS as a listening comprehension test to distribute students into the more proficient and the less proficient groups, then letting students participate in MALQ to know their metacognitive awareness. The

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correlation has then been done to examine the relationship between two variables (learning performance and metacognitive awareness). The researchers also chose four of sixty-six students in two more proficient and two less proficient to do the stimulated recall about their task-solving process. The results of the quantitative data revealed a positive relationship between students' learning performance and metacognitive awareness and there is a significant difference between more-proficient and less-proficient learners. More-proficient listeners actively engage in planning for the task and monitoring incoming input, which reflects that more-proficient listeners know better about using different strategies and are involved in a greater depth of interaction with the text. As for the qualitative data, the researchers found that more-proficient listeners mostly used problem solving and directed attention strategies when answering the test, which is similar to the result from Hu and Goh (2014). The stimulated recall also indicated that less proficient listeners tended to use mental translation strategy during the process which supported the result discussed by Vandergrift et al. (2006). Other studies on strategy use also found that under test conditions, better listeners used a wider range of appropriate strategies than listeners in lower proficiency (Harputlu & Ceylan, 2014; Li, 2013; Vandergrift & Baker,2015; Abd Latip, Swanto & Din,2020).

The researcher has reviewed listening comprehension, the conception of metacognition, and relative empirical studies in chapter two. It is found that several factors associated with the learner and learning process can have a great influence on students' metacognitive awareness and strategy use. The essential role of metacognitive awareness plays in successful L2 listening comprehension has been pointed out in the literature review as well. Moreover, students' metacognitive awareness and strategy use can be influenced by many factors based on several studies. The interrelationship between these elements is worth exploring.

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Despite there were several studies examining learners' listening metacognitive awareness, most current studies focused on participants of higher level such as college or adult learners, relatively fewer studies examined senior high school students' metacognitive awareness and strategy use. For most senior high school students, it is their first time to receive lots of listening tests and passages as formal education, so it is necessary to examine their metacognitive awareness in listening. Furthermore, the listening context that set to investigate students' metacognition varied, some designed a long-term strategy instruction, some set authentic context by using authentic materials such as podcasts, and still others set under test context and applied standardized tests like IELTS listening modules. Few or even no studies set test context under education in Taiwan and used Test of English Listening Comprehension (TELC), which is the critical test for high school students to attend college as the listening comprehension text. Finally, most studies examining students' metacognitive awareness utilized a close-ended questionnaire, which calls for the inclusion of more qualitative data to probe into students' actual metacognitive awareness and strategy use.

Therefore, to fill the gap, the present study aims to investigate a group of senior high school students' overall metacognitive awareness about listening in English as well as their metacognitive knowledge and use of strategies when completing a listening comprehension test. Both quantitative and qualitative data will be collected to investigate the issue.

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CHAPTER THREE

Methodology

The primary aim of this study is to examine students' overall metacognitive awareness about listening in English as well as their metacognitive knowledge and use of strategies when completing a listening task. The study is quasi-experimental and survey-based and utilizes a mixed-method design to collect data, which is described in the sections below. The first section describes the background information about participants. The second section explains the major data sources of this study. The procedure of the study is introduced in the third section. The fourth section illustrates the analytical tool applied to examine the data.

Participants

In order to examine senior high school students' listening metacognitive awareness and strategy use, the study used purposeful sampling and the participants were selected from one senior high school in a city in Northern Taiwan. The school focuses on interactional communication and requires students to take a second foreign language as an elective course. There are fifteen classes in each grade. Each class includes approximately 35 students.

Originally, there were 86 students (male=27; female=59) in three classes of the 11th grade invited to participate in this study. After examining their situations, there were two students excluded because of their language background (one is the native speaker of both English and Mandarin Chinese, and the other had lived in the USA for one year.); there were still three other students excluded because they have taken the same listening test before either in cram school or tutoring. Finally, data from 81 students (male=26; female=55) was valid in this study. Ranging in age between 16 and 17 years, these students have received formal English education for at least eight years. They were the first batch of students learning under the new curriculum. Before

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entering high school, junior high school students have to take the Comprehensive Assessment Program for Junior High School Students implemented by the Minister of Education which allocates students to different high schools based on their academic performance. Students' average English proficiency in this school was around intermediate level, but individual students' English proficiency varied, ranging from basic to advanced. With regard to students' self-perceptions of listening ability, among 81 students, 2 students thought they were extremely good, 17 students thought they were good, 43 students thought they performed normal, 12 students thought they were poor, and 7 students thought they were extremely poor comparing with students in their same age. Almost all the students thought listening is a very important skill in English learning.

Data Sources

Two instruments were used in the study to collect the quantitative data, the first one was the metacognitive awareness listening questionnaire. This questionnaire was firstly developed by Vandergrift et al. (2006), translated into a Chinese version by Li (2009), and modified by the researcher for this study. The second one was the listening comprehension test from the Test of English Listening Comprehension (TELC), published by the College Entrance Exam Center. In addition, interviews were also conducted to collect information about students' metacognitive awareness regarding their use of listening strategies. The interview questions were adapted from Ruan (2014). The instruments and data collection procedure are described in greater detail in the sections below.

Metacognitive Awareness Listening Questionnaire (MALQ)

There were two sections designed in the questionnaire. The first part, with 9 items, was the information about respondents' basic and English learning background, including their gender, experience of living in English-speaking countries, perception

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of one's English listening skill, how long they spend on English listening per week.

The second part focused on the investigation of students' metacognitive awareness under test context with 21 items. By using the questionnaire which was adapted from Vandergrift, Goh, Mareschal and Tafaghodtari (2006), the researcher aims to measures listeners' metacognitive knowledge from five categories. The first category is Problem solving, which includes items listeners used to infer meaning from the text and monitor these inferences (items 5,7,9,13,17, and 19). Secondly, Planning and Evaluation refers to items that listeners used to prepare themselves for listening and to evaluate their listening efforts (items 1,10,14,20, and 21). The third category Mental Translation includes items about the ability to use mental translation parsimoniously (items 4, 11, and 18). As the fourth category, Person Knowledge represents listener's perceptions concerning the difficulty presented by L2 listening and their self-efficacy in L2 listening (items 3, 8, and 15). Finally, Directed Attention, introduces items that relate to listeners' concentration (items 2, 6, 12, and 16). There are a total of 21 items in this questionnaire. Table 3.1 presents the categories and question items of the questionnaire.

Table 3.1 The means of students' responses to the five categories in MALQ (Vandergrift et al., 2006)

Categories	**The description in the questionnaire**
Problem solving	Q5. I use the works I understand to guess the meaning of the words I don't understand. Q7. As I listen, I compare what I understand with what I know about the topic. Q9. I use my experience and knowledge to help me understand. Q13. As I listen, I quick adjust my interpretation if I realize that it is not correct. Q17. I use the general idea of the text to help me guess the meaning of words that I don't understand.

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	Q19. When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess make sense.
Planning and Evaluation	Q1. Before I start to listen, I have a plan in my head for how I am going to listen. Q10. Before listening, I think of similar texts that I may have listened to. Q14. After listening, I think back to how I listened, and about what I might do differently next time. Q20. As I listen, I periodically ask myself if I am satisfied with my level of comprehension. Q21. I have a goal in mind as I listen.
Mental Translation	Q4. I translate in my head as I listen. Q11. I translate keywords as I listen. Q18. I translate word by word, as I listen.
Person Knowledge	Q3. I find that listening in English is more difficult than reading, speaking, or writing in English. Q8. I feel that listening comprehension in English is a challenge for me. Q15. I don't feel nervous when I listen to English.
Directed Attention	Q2. I focus harder on the text when I have trouble understanding. Q6. When my mind wanders, I recover my concentration right away. Q12. I try to get back on track when I lose concentration. Q16. When I have difficulty understanding what I hear, I give up and stop listening.

Students were required to respond to items with the use of a six-point Likert scale ranging from "strongly disagree" to "strongly agree" (1 =strongly disagree, 2 = disagree, 3 = partially disagree, 4 = partially agree, 5 = agree, and 6 = strongly agree). According to Vandergrift (2006), using a scale without a neutral point can prevent respondents from hedging. To ensure students' proper understanding of the questionnaire items, a Chinese version of MALQ was used in the study (Appendix A). The Chinese version was translated by W. L. Li (2009), and its Cronbach alpha value, which symbolized the internal consistency of items in MALQ, was 9.0, indicating the

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scale's good overall reliability. The split-half reliability was .82~.83. The Cronbach α and coefficient of internal consistency was above 0.70 which showed that the Chinese version of MALQs was highly reliable. The researcher had modified some descriptions in the questionnaire based on students' feedback given by those invited by the researcher to read the questionnaire items. The modification would be illustrated in detail below.

The questionnaire (Appendix A) was adapted from the Chinese version of MALQ by Li (2009). To ensure the questionnaire used reader-friendly words that were suitable for senior high school students, the researcher had invited three students who were of the same age but not from the survey group to check whether they understand the description of each item in the Chinese version of the questionnaire. Some items were modified after the discussion with these students. There were 13 items in total modified slightly for a better understanding after the discussion.

Test of English Listening Comprehension (TELC)

The listening comprehension test was chosen from the Test of English Listening Comprehension. The test, produced and published by College Entrance Examination Center (CEEC), is a comprehensive test with several text types designed to test high school students' English listening skills. It covers everyday situations as well as classroom and other learning-related situations to prepare students for real-world communication. The vocabulary tested in the TELC is within the common 4500-word category and included in levels 1 to 4 on the list of high school English vocabulary published by the CEEC. It is a critical test for students because university departments may require a specific TELC score from candidates wishing to enter through the Stars Program, Personal Application, or Examination and Placement.

The test utilized in this study was the latest version of TELC which was particularly designed for students and teachers practicing the new curriculum. The test

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included five different sections- Picture Description, Question-Response, Conversations, Short Talks, and Long passages. There were two parts included in the Picture Description. In the first part, there were four pictures presented in each item, participants needed to choose the most suitable picture based on the conversation or monologue. There were also four items in the second part. Participants saw one picture in each item and chose two suitable answers according to the picture description they listened. In the second section, question-response, students heard one sentence and needed to find the most proper response from four options. There were eight items in this section. Conversations was the third section and listeners needed to choose the suitable answer for the conversations. There were also eight items in the third section. The fourth section, short talks, was designed as group questions. Students heard a monologue and they had to find information in it so as to answer two related questions. There were eight items in this section. The last section was long passages, which was the new part added to the new curriculum. Students heard the long monologue or conversation and kept the note on the given forms to help them remember the listening content so as to answer four questions related to the passage. 8 items are included in this section. There were 40 items in total for the test.

Table 3.2 shows the structure of the listening comprehension test. The participating students took about 40 minutes to complete all five sections.

Table 3.2 The structure of the TELC Listening Comprehension Test

Section		**Presentation of questions**	**Number of speakers**	**Number of items**
1.	Picture Description I	pictorial	one	4
	Picture Description II	pictorial	one	4
2.	Question-Response	non-picture	one	8
3.	Conversations	non-picture	two	8
4.	Short Talks	non-picture	one	8

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5.	Long Passages	non-picture	one or two	8

The Introspective Interviews

The introspective interviews, the approach to collect qualitative data in this study, were conducted a week after the listening test and the survey. According to Cross (2010), having learners explaining their task-completion process to others can raise and/or consolidate the former's metacognitive awareness, which was the first reason for the researcher to choose introspective interview as the way to collect the qualitative data. The second reason was that by recalling their own thoughts, participants could reveal the strategies they used while listening to the texts. To do the interview, the researcher recruited eight students out of the 81 participants, four more proficient and four less proficient based on their listening test scores. The average test scores were 30.6. The scores of the four more proficient students were all higher than 39, and those of the four less proficient students were all under 20. There were two male and female students in both more and the less proficient groups. The researcher had obtained parents' consent forms from all participants prior to the interviews. To avoid mutual influence and collect more in-depth information about students' listening process, the participants were individually interviewed.

A set of interview questions adapted from Ruan (2014) was designed by the researcher, which can be found in Appendix B. The interview questions in Ruan (2104) were originally designed for examining learners' writing metacognitive awareness, so the researcher changed "writing" into "listening" for questions that related to students' listening metacognitive awareness and strategy use. There were 8 out of 15 questions revised and adopted in this study. Other questions were designed based on items under five categories in MALQ to probe deeply into students' listening metacognitive awareness and strategy use throughout the listening process. A total of 13 questions

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was made into two sections. The first section consists of four questions about students' perceived difficulty, feeling, and purpose of acquiring the English listening skill. The third and fourth items were adapted from Ruan (2014). The second section consists of nine questions about participants' use of listening strategies regarding the Listening Comprehension test. Interviewees were asked questions about how they used the strategies under the testing context and what they did or wanted to do to improve their own listening ability. Items 1,2,3,5,6 and 8 were adapted from Ruan (2014).

When the researcher asked questions in the second part, participants were provided with the same answer sheet they did in the third procedure as a reference for them to answer questions more concretely or give examples. Through the interview, the researcher was able to probe into students' perspectives and better understand student's problems as well as their coping strategies regarding listening in English. During the interview, the participants were allowed to do stimulated recall and answer questions in Chinese because it was believed that they could express their thought more thoroughly through their mother tongue. The interview for each student lasted around forty minutes to one hour.

Procedure

The study used a mixed-method design to collect both quantitative and qualitative for having a better understanding of high school students' metacognitive awareness when taking a listening test. The research procedure included four parts: modifying the questionnaire, implementing the formal test, administering the questionnaire, and conducting introspective interviews. They are depicted below.

Before the implementation of the formal test, the researcher went to three participating classes of the present study to explain the goals and the procedure of the study. Students were also informed that the result of the listening test and survey would not affect their grades. The possible benefits of the study and test for the

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participants were also mentioned to prompt students' motivations to do the test. Because all the participants were under eighteen, the parental consent forms were distributed after the explanation. The content of the parental consent form can be found in Appendix C, which included the introduction of the study, agreement for the formal test and the recording of the interview.

After making sure the final version of the questionnaire and collecting all the consent forms, the formal test was executed. The researcher first made a brief introduction about the five sections in the test, and then had them taken the test which takes around 40 minutes. After finishing the test, the researcher collected the test paper from all the participants and made sure the number of the paper fitted the number of the students. Then the researcher let students scan the QR code to fill the questionnaire online. During the time of filling the questionnaire, students were allowed to ask any questions about the items in the questionnaire. Meanwhile, the researcher asked the participants whether there are students who had already taken the test, data from those were excluded. There were a total of three students who had done the test before. The whole process took 50 minutes.

The researcher then checked all the test papers and scored them. After scoring and typing all the scores on the computer, the researcher categorized students into the more proficient and the less proficient groups based on their scores in TELC to select suitable interviewees. Eight students were selected and invited to participate in the interview. After scheduled available time with interviewees, the individual interviews were conducted one week after the formal test. Each interview lasted around 40 minutes to one hour. The whole process of the interview was audio-recorded, transcribed, and then translated into English. All the interviews were completed within two weeks. Figure 2. summarizes the research procedure described in this section.

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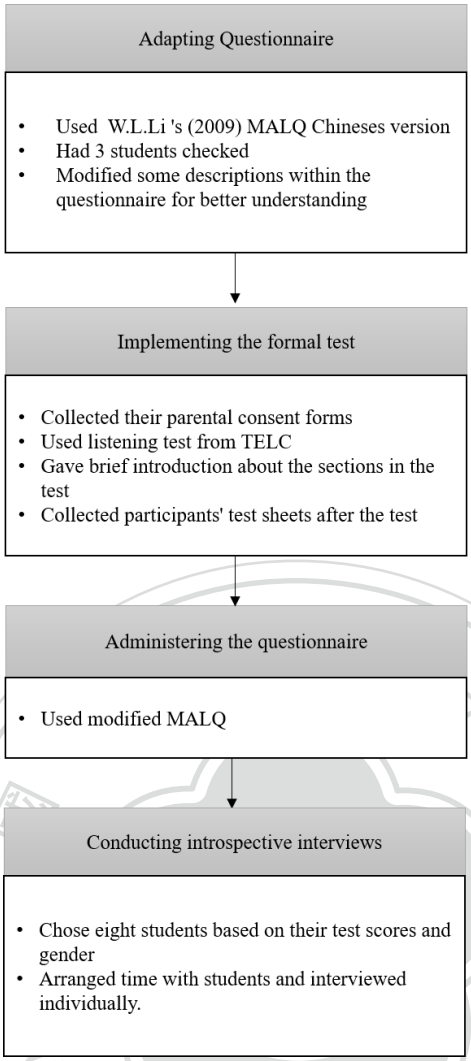

Figure 2 A flowchart of the research procedures and thesis timeline

Data Analysis

Both quantitative and qualitative analyses were employed in the study to answer the two research questions proposed. The quantitative data included the students' responses to the MALQ questionnaire and their listening test scores from the TELC. These data were analyzed through various statistical measures such as descriptive statistics including means and SDS, correlation analysis, and ANOVA. The responses for each item were ranked from one (strongly agree) to six (strongly disagree). Due to the design of the questionnaire, several items needed to be scored reversely for statistical analysis. Three items with negatively worded (#3 and #8 for Person Knowledge, and #16 for Directed Attention) were reversed coded. Besides, all items

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in Mental Translation (#4, #11, and #18) were also reversed coded (Vandergrift et al., 2006; Goh & Hu, 2014). For these six items, the points became six (strongly agree) to one (strongly disagree). After reversing these items, the means of students' answers for each item under different categories were run. As for the qualitative data, content analysis was used to analyze the interview data. According to Krippendorff (2004), content analysis enables researchers to go through a variety of texts systematically and use data to make valid conclusions in accordance with the field of usage. It was hoped to find the possible pattern of participants' listening metacognitive awareness through content analysis in this study.

To answer the first research question regarding students' metacognitive awareness in English listening, students' responses to the MALQ questionnaire were analyzed statistically. Descriptive analysis was used to figure out the means of all the items and categorized them into categories.

To answer the second research question about the relationship between students' listening test scores and their scores from MALQ, a correlational analysis was performed. The correlation test was run on the MALQ scores and their test performance data to investigate how the five aspects of students' metacognitive awareness of L2 listening would relate to students' listening proficiency.

To answer the third research question about whether there is a difference in the participants' metacognitive knowledge and strategy use between different proficiency groups, students were first divided into more proficient and less proficient students based on their TELC listening test scores and then their results of MALQ were compared. To be more specific, the means of two groups' choices for MALQ were calculated and ANOVA was performed to examine the difference between groups.

Despite the quantitative data, interviews data were collected in the study to gain further insights about students' metacognitive awareness and strategy use. Verbal data

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from students with different listening abilities were analyzed. To assure the reliability of the qualitative data, peer debriefing was adopted in this study. One graduate student with a TESOL background was invited to participate as a qualified peer. This peer reviewer assessed the transcript after knowing the criteria of the coding and receiving some given examples. The discussions were made between the peer reviewer and the researcher to reach a consensus toward the rationale of the selection and the allocation for the categories in the study. This peer also examined whether a researcher had overlooked key points, overemphasized a minor one, or made a repetition of one or more arguments. Furthermore, the researcher of this study had examined the categories twice to ensure the intra-rater reliabilities of the qualitative data.

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CHAPTER FOUR

Results

In this chapter, data from the MALQ questionnaire, TELC listening comprehension test, and interviews are presented. The results of the study are divided into two parts, the quantitative and qualitative results.

Quantitative Results

Research Question 1. What is the state of Taiwanese high school students' English listening metacognitive awareness and strategy as measured by MALQ?

To find out about students' level of English listening metacognitive awareness, their responses to the MALQ questionnaire are presented below. To be more specific, students' overall mean scores as well as their mean scores from the five categories of MALQ are calculated and presented in Table 4.1.

Table 4.1 The means of students' responses to the five categories in MALQ

Five categories in MALQ	Mean	SD
Directed Attention	4.02	1.47
Problem Solving	3.97	1.26
Person Knowledge	3.64	1.47
Mental Translation	3.60	1.49
Planning and Evaluation	3.23	1.41
Grand Total	3.70	1.43

Table 4.1 reveals that the average score of the total MALQ questionnaire was 3.7, indicating students partially agree that they were aware of their uses of these strategies. Among the five categories in MALQ, students scored the highest in the category of Directed Attention (mean = 4.02) indicating that they partially agree to have gained awareness and strategy use under this category. This was followed by Problem Solving at 3.97, and Person Knowledge at 3.64 as third. There is an observed

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difference between Problem Solving and Person Knowledge. Mental Translation was the fourth one. It also shows a detected difference between the fourth one and the last one Planning and Evaluation. The average for the whole MALQ is 3.7. Therefore, from the above description, students tend to use strategies in Directed Attention the most and use the least strategies under Planning and Evaluation.

The following Table 4.2 indicates how many items in different categories above or below the total average.

Table 4.2 Numbers of items above or below the total average

Above Average	**Items**	**Below Average**	**Items**
Directed Attention	2	Directed Attention	2
Problem Solving	5	Problem Solving	1
Person Knowledge	1	Person Knowledge	2
Mental Translation	1	Mental Translation	2
Planning and Evaluation	0	Planning and Evaluation	5

As the first one among all categories in Table 4.2, under the Directed Attention category, there were only two items above the total average, and the other two were below average. The result can be inferred that the scores of two above-average must be very high. There were five items above the average in Problem Solving which was easy to refer it as the second most frequent metacognitive strategies students used during the test context. For Person Knowledge and Mental Translation, both of which contained one item above average and two below average. What needs to notice is that all the items included in Planning and Evaluation were below the average, which made the section become the last one without a doubt.

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Table 4.3 The most developed metacognitive awareness and strategy in MALQ

Category	Item	Content of the item	Mean	SD
Directed Attention	Q12.	I try to get back on track when I lose concentration.	4.74	1.33
Directed Attention	Q2.	I focus harder on the text when I have trouble understanding.	4.44	1.36
Mental Translation	Q18.	I translate word by word as I listen.	4.42	1.28
Problem Solving	Q9.	I use my experience and knowledge to help me understand.	4.21	1.14
Problem Solving	Q5.	I use the words I understand to guess the meaning of the words I don't understand.	4.17	1.26

Table 4.3 illustrated listening metacognitive awareness and strategy that students developed the most in MALQ. The top one is Q12 "I try to get back on track when I lost concentration" which registered a mean of 4.74. The second one is Q2 "I focus harder on the text when I have trouble understanding." which scored a mean of 4.44. Both items were under Directed Attention. The third one is under Mental Translation, Q18 "I translate word by words as I listen." Receiving a mean of 4.42 among all items. Because items under Mental Translation were all reversed, the item showed that they would not translate word by word when listening to the passage. The following two were under Problem Solving, they were Q9 "I use my experience and knowledge to help me understand." And Q5 "I use the words I understand to guess the meaning of the words I don't understand." These items were about using students' own experience and known words to achieve listening comprehension. They registered 4.21 and 4.17 respectively. The least frequently used items were presented in the following table 4.4.

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Table 4.4 The least developed metacognitive awareness and strategy in MALQ

Category	Item	Mean	SD
Person Knowledge	Q8. I feel that listening comprehension in English is a challenge for me.	3.40	1.43
Planning and Evaluation	Q10. Before listening, I think of similar texts that I may have listened to.	3.12	1.40
Planning and Evaluation	Q14. After listening, I think back to how I listened, and about what I might do differently next time.	3.04	1.26
Mental Translation	Q11. I translate keywords as I listen.	2.91	1.37
Planning and Evaluation	Q20. As I listen, I periodically ask myself if I am satisfied with my level of comprehension.	2.85	1.48

In table 4.4, there were three items under Planning and Evaluation. They were Q10 “Before listening, I think of similar texts that I may have listened to first.” Q14 “After listening, I think back to how I listened, and about what I might do differently next time.” And Q20 “As I listen, I periodically ask myself if I am satisfied with my level of comprehension.” Q20 ranked the last one in the whole MALQ, which could be inferred that students seldom do the periodical reflections about their own listening comprehensions. Under Person Knowledge, Q8. “I feel that listening comprehension in English is a challenge for me,” was reversed because of the negatively worded. The low ranking indicates that most students still regarded listening as a challenge. Q11 under Mental Translation is “I translate keywords as I listen,” which was also reversed and showed that students tended to do the translation for keywords into their mother tongue under test context.

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Research Question 2. Is there a relationship between senior high school students' level of English listening metacognitive awareness and their listening performance?

To answer the second research question, the correlation analysis was performed between students' scores in the Test of English Listening Comprehension (TELC) and five categories in MALQ. There was one score for each item in TELC, since there were four items with two answers in the first section- Picture Description, the total score of the test was 44. There were 81 students' scores considered effective in this study. The mean score of 81 students was 30.6, and the standard deviation was 7.99. Figure 3 demonstrated students' scores dispersion, and most students' scores fell between 30-40.

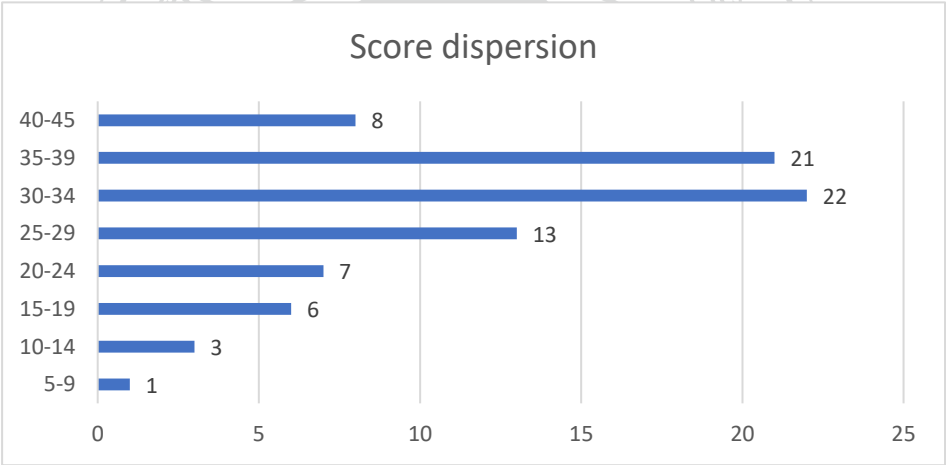

Figure 3 Students' score dispersion in TELC

Table 4.5 illustrated the correlation test between students' scores in the Test of English Listening Comprehension (TELC) and five categories in MALQ. From this Table, four categories in the questionnaire, Directed Attention (r=.460, p<.001), Problem Solving (r=.503, p<.001), Person Knowledge (r=.400, p<0.001), and Planning and Evaluation (r=.447, p<.001) had a significant positive correlation with listening performance. No significant correlation was seen between Mental

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Translation and listening performance. (r=.039, p=.726) However, there was still a significant positive correlation between the whole MALQ questionnaire and students' listening performance. The results indicated that there was a positive correlation between students' listening performance and their metacognitive awareness and strategy use. In other words, the higher the level of students' metacognitive awareness, the better they performed in the listening test.

Table 4.5 Correlation between Listening Performance and the Five Categories of MALQ

	MALQ	**DA**	**PS**	**PK**	**MT**	**PE**
Listening performance	.602	.460	.503	.400	.039	.447
P value	2.76E-09	1.58E-05	1.66E-06	0.000214	0.726737	2.86E-05

Note. MALQ=Metacognitive Awareness Listening Questionnaire, DA=Directed Attention, PS=Problem Solving, PE=Planning and Evaluation, MT=Mental Translation, and PK=Person Knowledge

Research Question 3 Do students with different listening proficiency show any differences in their level of English listening metacognitive awareness? Specifically, are there any differences between students from the more proficient and less proficient groups in terms of the five categories of metacognitive awareness (i.e. directed attention, mental translation, person knowledge, planning and evaluation, and problem solving)? (directed attention, mental translation, person knowledge, planning and evaluation, and problem solving)

The third research question focuses on the possible differences in the pattern of metacognitive awareness between more and less proficient listeners. The two groups were compared based on their overall scores from MALQ as well as those from the

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five categories. Table 4.6 shows the two groups' mean scores obtained from the MALQ and its five categories. Students were grouped based on their scores in the Test of English Listening Comprehension (TELC). From the above data, the mean scores of 81 participants were 30.6, so 46 students who were above the average 30.6 were categorized as the more proficient group. There were 35 students whose scores below 30.6 were divided as the less proficient group. From Table 4.6, the means of the response of the more proficient group in five categories were higher than the less proficient group. Such results indicate that the more proficient group developed more metacognitive awareness and strategy use than the less proficient group in every category in MALQ, including the MT which was already reversed before the data analysis.

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Table 4.6 Students' responses under five categories in MALQ in two groups

	N	MALQ Mean	MALQ SD	DA Mean	DA SD	PS Mean	PS SD	PK Mean	PK SD	MT Mean	MT SD	PE Mean	PE SD
More proficient	46	4.04	1.38	4.41	1.38	4.29	1.20	4.01	1.35	3.67	1.53	3.67	1.42
Less proficient	35	3.26	1.37	3.51	1.43	3.54	1.24	3.15	1.48	3.50	1.42	2.66	1.18
Total	81	3.70	1.43	4.02	1.47	3.97	1.26	3.64	1.47	3.60	1.49	3.23	1.41

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To further explore whether there was a significant difference between different groups in the five categories, one-way ANOVA was performed on the data. More-proficient and Less- proficient groups were the independent variable, the five categories were the dependent variables. Table 4.7 to Table 4.12 show the results of the differences between metacognitive patterns and proficiency groups.

Directed Attention (DA)

From Table 4.7, there was a significant difference between the more and the less proficient group in the category of Directed Attention. ($p<0.001$). There was an obvious difference between groups (MS=15.87) and a slight difference within groups. (MS=1.06).

Table 4.7 Results of One-Way ANOVA for groups and the score from the Directed Attention category

Source	SS	df	MS	F	P
Between Groups	15.862	1	15.862	15.00039	0.00022
Within Groups	83.53769	79	1.057439		
Total	99.39969	80			

＊The mean difference is significant at the 0.05 level

Problem Solving (PS)

From Table 4.8, the difference between the more and the less proficient group in the category Problem Solving (PS) was clear. ($p<0.001$). There was also a difference between groups (MS=11.34) and a slight difference within groups. (MS=0.63).

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Table 4.8 Results of One-Way ANOVA for groups and Problem Solving category

Source	SS	df	MS	F	P
Between Groups	11.34163	1	11.34163	18.11561	5.67E-05
Within Groups	49.45947	79	0.626069		
Total	60.8011	80			

Person Knowledge (PK)

From Table 4.9, there was an obvious difference between the more and the less proficient group in the category Person Knowledge (PK). ($p<0.001$). There was a significant difference between groups (MS=14.77) and a slight difference within groups. (MS=1.23).

Table 4.9 Results of One-Way ANOVA for groups and Person Knowledge category

Source	SS	df	MS	F	P
Between Groups	14.77298	1	14.77298	12.00961	0.000859
Within Groups	97.17764	79	1.230097		
Total	111.9506	80			

Mental Translation (MT)

Though in Table 4.6 the more proficient group's mean of metacognitive awareness and strategy use in the category of Mental Translation (MT) were higher than the less proficient group, the result from ANOVA did not show statistical significance. From Table 4.10, there was no significant difference between the more and less proficient groups in the category Mental Translation. ($p>0.001$). The difference between groups was subtle (MS=0.63), while the difference within groups was big (MS=1.25). Therefore, in this study, there is no obvious difference between

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the less and more proficient groups in the Mental Translation category from the statistical data.

Table 4.10 Results of One-Way ANOVA for groups and Mental Translation category

Source	SS	df	MS	F	P
Between Groups	0.634553	1	0.634553	0.507089	0.4785
Within Groups	98.8579	79	1.251366		
Total	99.49246	80			

Planning and Evaluation (PE)

From Table 4.11, there was a significant difference between the more and the less proficient group in the category of Planning and Evaluation (PE). ($p<0.001$). The difference between groups (MS=19.97) was obvious and the difference within groups. (MS=0.70) was slight.

Table 4. 11 Results of One-Way ANOVA for groups and Planning Evaluation category

Source	SS	df	MS	F	P
Between Groups	19.97048	1	19.97048	28.38244	9.15E-07
Within Groups	55.58606	79	0.703621		
Total	75.55654	80			

Overall MALQ

From Table 4.12, the relationship between overall students' metacognitive awareness in MALQ and L2 listening proficiency statistically significant ($p<0.001$), which shows the difference is still obvious between the two groups.

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Table 4.12 Results of One-Way ANOVA for groups and MALQ

Source	SS	Df	MS	F	P
Between Groups	11.88669	1	11.88669	39.96333	1.43234E-08
Within Groups	23.49776	79	0.29744		
Total	35.38445	80			

Qualitative Results

From the above quantitative data, although there was a subtle difference found in the Mental Translation category between the two groups, there were still four categories that demonstrated the clear difference. Moreover, the overall result of MALQ also illustrated the significant difference between students in different proficient groups.

The qualitative data was divided into two parts and presented in the following sections to gain further insights into the students' listening metacognitive awareness.

Students perceptions toward listening

The first section was students' perceptions toward listening per se. In terms of the first and second questions which related to anxiety during the listening process and perspectives about whether comprehending listening passages is a challenge, there was a clear difference between the groups. Participants in the more proficient group normally did not regard understanding listening passages as a challenge, so they did not feel nervous when they were listening to passages in the test. The following were the experts from the more proficient group.

"I will not feel anxious during a listening test, because I know the more I feel nervous, the worse I will perform. Anxiety will make my brain turn blank. (interviewee A)"

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"For me, listening tests in senior high school are not difficult challenges, so I don't feel nervous at all when I listening to the passages. (interviewee O)"

"Compare to the real communication, English listening under test context is not that scary. In real communication, I need to respond immediately after listening to something. But a test is a lot easier because I can have time to think and space to record words I know. (interviewee L)"

On the contrary, interviewees in the less proficient group thought knowing listening passages were difficult and expressed their nervousness during a listening test, which was demonstrated in the excerpts below.

"When I face the listening questions I am not good at, I will be more nervous. For example, long passage always makes me nervous, and when I am too nervous, I can't hear the passage clearly, even forget everything I heard. So sometimes I just give up listening and guess the answer directly. (interviewee Y)"

There was another reason that caused anxiety for participants. Different from listening tests in junior high school, listening passages were only played once in high school. Since students did not have a second chance, they needed to focus on the passage and made sure they could understand what it was played. One-shot pressure had aroused anxiety for these students.

"I thought listening tests in high school are far more difficult than those in junior high school. The listening passage would be played twice in junior high school, so I can check the words I don't know for the second time. Whereas, it is only played once in high school, which makes me anxious when I don't understand what the speaker said. (interviewee M)"

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However, when being asked whether listening is the most difficult skill for interviewees among four skills, there is no difference between the less and more proficient groups. “Compare with writing, I think listening is much easier. (interviewee O)” Another participant also said “If you let me rank the difficulty for four skills, listening will be the easiest one for me, because I just hear the passage. (interviewee B)” What qualitative data showed could be inferred that students commonly regarded that compare with the productive skills writing and speaking, reading and listening were relatively easy.

When it comes to what makes listening difficult, vocabulary, speaking rate in the listening passage, and speakers’ accents were regarded as critical barriers for participants to understand listening passages.

> “For me, understanding the listening content is challenging, because I don’t know much vocabulary, so I often have difficulty understand the passage. (interviewee F)”
>
> “I once chat with a foreigner in English, but his accent is too strong for me to understand, so I gave up talking to him. (interviewee T)”

In terms of the purpose of learning English listening, communication is thought of as the main purpose for most interviewees. They had a concept that listening and speaking are interrelated and both of them are critical for successful communication. There were also some interviewees responded that by learning English listening, they were able to know the correct structure of English sentences and article.

> “By listening to English passages, especially long passages, I can know how the correct grammar structures are composed in the article. Also, I am able to know the logic of English articles to make me understand what key points I should grab. (interviewee B)”

The first section has illustrated interviewees’ perspectives toward English

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listening from several parts, including anxiety during the listening process, difficulties that obstruct listening comprehension, and the purpose of English listening.

Listeners' use of listening strategies

For the second section, listeners' use of listening strategies was probed deeply and presented into six parts in the following paragraphs, which include students' frequently used listening strategies, strategies they normally used to solve listening difficulty, listening areas they wanted to improve, plans and evaluations they would do before and after listening test, passage types they felt difficult, and approaches they adopted to improve English listening.

First, considering the frequently used listening strategies, six out of eight students had mentioned being focus is one of the strategies they used the most or needed to improve for their English listening in the interviews. One interviewee said "Keeping focused is the most important strategy for me, so I try to stay focus throughout every listening test. (interviewee A)" And Another interviewee mentioned "Since I was under the test context, which would affect my scores for the exam, I would try my best to focus on the passage. (interviewee Y)"

Reading test items before the passage was played and find keywords from these items was another strategy mentioned by most interviewees because this strategy enabled them to have some concepts about the test items and even infer some related words.

> "For me, finding keywords from the test items in the questions, connecting with the words I have learned before, and inferring from the whole context is what I will do during the listening test. (interviewee T)"
>
> "I will look at the items in the question first to check whether there were words I understand, and if the words were played in the passage as well, I will choose that test item directly. It is kind of intuition for me to guess the answer.

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(interviewee M)”

“I will first look at the test items to infer the keywords for the question and write down keywords I think are important. These keywords can enable me to think about related themes or contexts. (O)”

As for translation, which showed a subtle difference between the two groups in the quantitative data, interviewees in the different proficient groups had possessed different opinions toward it. All interviewees in the more proficient group mentioned that they tended to think in English rather than translating into Chinese when hearing the passages. The following were relative excerpts.

“When I hear English sentences, I know what they mean directly rather than translating them into Chinese. It is too tired and unnecessary to translate every single word in the sentence. (interviewee A)”

“I don’t answer the questions after translating them into Chinese, I think it is waste of time. One word can include lots of meanings, so I just infer it from the context. (Interviewee O)”

“If you listen more English, you will get used to thinking from this language and know its pragmatics. That is why I will not translate English into Chinese when I do English listening unless that word is unfamiliar for me and I can’t connect it with words I have learned before. (interviewee T)”

In the less proficient group, the data presented in two different ways. Half of the interviewees tended to translate every word they heard into Chinese before answering questions, their opinions were showed below.

“I tend to translate everything I heard into Chinese and then think about it in Chinese. For example, if it is about basketball, instead of connecting to other English words, I will translate it into Chinese first and use Chinese to infer other related things. (interviewee M)”

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"When I listen to English, I tend to hear and understand every single word and translate both sentences and keywords into Chinese. (interviewee F)"

However, others tended to only translate keywords rather than every single word in the sentences.

"I think it is unnecessary to translate every single word in the sentence. I just hear the keywords. After all, the questions are not about the whole meaning of the sentences but key segments of information within the passages. (interviewee Y)"

"I will not translate every single word, but the keywords within passages. (interviewee B)"

From the above excerpts from two groups, participants in the more proficient group did not consider translation as a necessary strategy during the English test. However, interviewees in the less proficient groups did depend on translation frequently to achieve better listening comprehension.

Second, for strategies used to solve listening difficulty, the more proficient group had come up with lots of strategies they would use to solve the problem. One interviewee in the more proficient group mentioned "Normally, if there is one word I don't know in the sentence, I would write down the whole sentence and think about the position of the word to infer its meaning. Also, I will use context to figure out its meaning. (interviewee A)"

There was another student who said "If I don't understand the passage, I will use my experience and knowledge about this theme to help me. For example, if it relates to airline safety, I will associate with sentences like make sure your seat back and table are in an upright position, please keep your seat belt fasten while seated. Hence, I can choose a test item that may include such words. It is one way for me to infer the answer. (interviewee L)"

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Moreover, all interviewees in the more proficient group mentioned they would use the words they learned before and the sentences near the words they do not know to help them infer the meaning.

However, interviewees in the less proficient group tended to guess the answer directly rather than using different ways to infer the answer. “If I come across the words I do not understand, I don’t think I can use the word I know or the theme to infer it because I am not sure whether there is any relationship between them. (interviewee B)” It seems hard for them to infer meaning from the text, let alone monitor inferences. One interviewee mentioned her concern about thinking too much about the words she does not know “When I face the test items I don’t understand, I tend to guess it directly because it only plays once. If I keep focusing on the question I don’t understand, I will miss all the following questions. (interviewee Y)”

When facing difficulty to comprehend the listening passage, the difference between the two groups also appeared in terms of whether they could stay focus on the passage. Though in the previous part, interviewees commonly agreed that staying focused was one of the most frequently used strategies, students in the two groups showed different attitudes toward listening difficulty. One interviewee in a more proficient group mentioned “Before listening, I will keep myself awake. The most important goal for me does not to fall asleep. I will be more focused especially when I heard the long passage, so I can infer from the former or later content if I don’t understand one of the words in the passage. (interviewee O)” On the contrary, interviewees in the less proficient group tended to give up when facing listening difficulty, as presented in the following excerpts.

“If I don’t understand the passage, I felt tired and easily fade away. (interviewee B)”

“It depends, if it is for the entrance exam, then of course I will push myself to be

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focused. But if it is the normal test and there are too many words I don't know, I feel exhausted and sometimes just give up listening and guess answers directly. (interviewee Y)"

"I won't say I easily lose my attention when listening to English scrip, because it is still a test! It's more like mentally give up for me. That is, I choose to give up listening to the passage is not due to lack of concentration, it is because I don't understand it at all. (interviewee M)"

To conclude for this part, students in the two groups had shown lots of differences regarding attitude and strategy use when facing listening difficulties.

Third, concerning the areas students wanted to improve the most when listening in English, "increasing vocabulary size" was mentioned by all the interviewees.

"I want to improve my vocabulary size, because it is very important whether for understand listening passage or for the conversation with foreigners. (interviewee A)"

"I don't know much vocabulary, so I can neither understand what the speakers talk about nor be able to understand what meaning of items in the test. Increase vocabulary size is definitely the first thing I want to improve. (interviewee M)"

"I expect myself to understand every word in the listening passage, so I need to recite more vocabulary. (interviewee L)"

Moreover, staying more focused during the test is also one of the things interviewees wanted to improve. One interviewee in the less proficient group mentioned

"What I need to improve for my English listening is that being more focused and do not give up when hearing the long passage. (interviewee F)".

"I think I need to be more focused during listening tests, almost every mistake I make is because I fade away at that time. (interviewee O)"

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Fourth, in terms of plans and evaluations students would do before and after listening tests, participants in the more proficient group plan and evaluate their own listening situation both before and after the listening test.

"My plan to help me increase answering accuracy is that before listening to the passage, I will definitely read the test items first. By doing so, first I can predict what the passage is about. Second, I can have an impression about words in the test items, which enables me to infer the keywords more easily while I listen to the passage. (interviewee L)"

"I evaluate my listening condition every time I finish the English listening test. I will check the number of the questions I am not sure about and think of the reasons that caused my uncertainty. Maybe I choose irrelevant keywords or I am not focused enough during the process of listening. (interviewee O)"

Participants in the more proficient group also adjusted their approaches once they found the original one was not efficient.

"I used to write down points while listening, but I found I often wrote down irrelevant points that were useless for answering the questions. Therefore, I start to read test items first to infer the questions, and I realize it is helpful for me to choose the right answer! (interviewee T)"

"My teacher in cram school encourages us to write down things we heard while listening. I tried but I easily miss the points when I write down anything. Hence, for me, it is more effective to think and answer after the passage is over. (interviewee A)"

Participants in the less proficient group revealed different patterns. They barely made plans or evaluate their own listening process.

"I don't do any plan before listening except reading test items. I think those who are good at English listening can answer easily while they are hearing passages.

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But for people like me who don't understand sentences at all, whatever I plan, I still can't answer the question. (interviewee M)"

"I don't think it is meaningful to evaluate whether I understand those questions after the test since the passages can't replay. I just feel released and forget everything after the test because I finally can get rid of it. (interview Y)"

"After listening to all the questions, I already feel exhausted, so I will not evaluate my listening, let alone think about how I can improve next time. (interviewee B)"

Fifth, when being asked what types of listening tasks in TELC were difficult for these interviewees, the fourth section-short talk was mentioned the most, especially for those in the less proficient groups.

"I think short talk is the most difficult one because the speaker just keeps talking without any stop, and I can't depend on any image like the first section of the test. (interviewee F)"

"I am not good at the short talk, because there is a lot of information presented at the same time, which makes me hard to remember anything the speaker said. (interviewee B)"

As for the long passage, which was the new listening section for the current curriculum, most interviewees thought it was easier compared to the short talk.

"The section is easier than the short talk because it provides structures that are related to the listening passage. With related clues, I can better predict what speakers may say. (interviewee M)"

"I really like the new section compare to the short talk because I can take note based on the talk, which makes me easier to remember the passage. (interviewee O)"

From the above excerpt, participants in the less proficient groups commonly

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regarded short talk as the most challenging part because they felt overwhelmed to receive such a long monologue at one time.

Last but not least, approaches students adopted to improve English listening. Students' responses can be divided into two aspects, entertainment and purposeful training. For the entertainment aspect, listening to English songs, watching American drama, listening to English podcasts, and chatting with foreign teachers are approaches mentioned by interviewees. Some interviewees in the more proficient group typically watch American dramas without Chinese subtitles, which gradually and effectively improves their English listening. As for purposeful training, only one student mentioned that he listened to the listening modules in TOEIC and discuss them with his classmates in cram school.

> "When I was little, my teacher in cram school asked me to write down English passages during the English test. Now, I still do similar things with my classmates in cram school, and we will discuss whether our notes about the passage are completed enough. (interviewee O)"

However, some interviewees pointed out they tended to spend more time improving reading and writing skills, listening would not be the first choice for them. This reflected listening indeed was not that emphasized compared to other skills like reading and writing.

> "I will not necessarily spend time on English listening. I tend to spend more time on reading or writing. (interviewee F)"

After illustrating interview data, the researcher is able to probe into students' perspectives on listening, understand students' actual listening strategy use and organize it into five categories.

For the Directed Attention category, most interviewees indeed used the strategies under this category frequently. However, from the interview data, the difference

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between the two groups was most obvious regarding their attitudes toward listening difficulty. The more proficient group would be more focused when feeling confused about the content so as to find more clues to figure out the answer. On the contrary, the less proficient group tended to fade away or gave up since they were unable to understand the passage.

For the Problem Solving category, most interviewees could be capable of sharing at least one strategy they used to enable themselves to answer correctly during the test, which illustrated they had commonly gained metacognitive awareness and strategies under this category. Interviewees in the more proficient group would use different strategies to help them find the answer, like inferring unfamiliar words from other sentences, connecting their own experience and knowledge to the theme, using familiar words to figure out the answers. While students in the less proficient group tended to guess directly because of their insufficient vocabulary size.

As for the Person Knowledge category, it could be inferred that with or without confidence was the critical element that affects one's motivation to answer the question based on the interview data. When feeling confident, students can remain calm to make a suitable choice for the passage. Nevertheless, anxiety and nervousness frustrate students, which caused them easily to give up. The fleeting feature of listening is another reason that may cause anxiety to students.

For the Mental Translation category, though there is a subtle difference between the two groups in quantitative data, the qualitative data has shown a clear difference. Interviewees in the more proficient group would use English mindedness to analyze the content they heard in English; nevertheless, interviewees in the less proficient group still tended to translate whole sentences or keywords into their mother tongue first before answering questions.

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Still, one of the interviewees in the more proficient group mentioned “I normally figure out answer directly without translation, but if the word is unfamiliar for me, and I can’t infer it from another vocabulary I know, I will try to translate it into Chinese. (interviewee T)” Therefore, the degree of unfamiliarity with English words may be the key element that makes the difference between the two groups were not that obvious in quantitative data.

As for the Planning and Evaluation category, some interviewees in the more proficient groups would evaluate their listening conditions and make adjusted plans for better listening comprehension. While many interviewees, especially those in the less proficient group had expressed their frustration and exhaustion in listening tests, which may be the reason why they normally did not make the listening plan previously and did not evaluate their listening situation after the test.

To sum up, findings from the interview data mostly concurred with the results from the quantitative data and also provided further evidence for students’ current state of listening metacognitive awareness.

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CHAPTER FIVE

Discussion

This chapter provides further discussion about the findings of the present study. The discussion is presented in two separate sections. First, students' overall metacognitive knowledge and strategy use under the English listening test context is presented. Second, the relationship between proficiency level and metacognitive awareness under the English listening test context is explicated.

Students' Overall Metacognitive Knowledge and Strategy Use under English Listening Test Context

Of the five MALQ subscales, the participants scored highest for Directed Attention and followed by Problem Solving, which were aligned with the result presented in Goh and Hu (2014). For the rest of the categories, Mental Translation ranked the third one. Person knowledge was the second to the last and Planning and Evaluation came as the last.

For Directed Attention, there were two reasons to explain why this category was the most frequent among the five categories. First, it is significantly related to the listening contest under the system model of listening. According to Imhof and Janusik (2006), the listening context can greatly affect the listener's cognitive, social and strategic listening process. In this study, since the participants were under the test context, they tended to be more focused. From the qualitative data, participants mentioned they would try harder to stay focus on the text because it was a test. Second, listening comprehension has its peculiar problems which arise from the fleeting, immaterial nature of spoken utterances (Rivers, 1996). Such features force students to focus more while doing listening. Different from reading which enables people to go back and review, listeners need to be concentrated on the passages since

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they can not relisten to them. One thing kept mentioned by different interviewees was that they thought the listening test was harder in senior high school because it only played once. They easily miss the point if they do not concentrate on the passage. There were two items (#6 and #16) under Directed Attention that fell below the average, one is about the ability to recover concentration right away when losing concentration. The other is about the insistence on consistent listening when facing difficulties. Both could be related to the second reason, some interviewees reflected it was hard to recover concentration right away since once they lose focus on one passage, it will not be played again. What they can do is trying to be concentrated again on the latter listening passages. Also, they tend to give up since it is difficult for them to recall the already played listening content.

In terms of Problem Solving, due to the listening-test-oriented training, students had to figure out their own metacognitive listening strategies for higher scores. These strategies were greatly relevant to cognitive factors proposed by Vandergrift and Goh (2012), which include linguistic knowledge, pragmatic knowledge, prior knowledge, and sound discrimination ability under one of the three phases of metacognitive listening strategy in listening, planning. Since the study was under the test context, participants would use different strategies to come up with or infer the answers. This may be the reason why almost all the items in the Problem Solving category were above the average. Moreover, from the interview data, it was found that interviewees possessed a bottom-up dependency brought out by Field (2004), which reflected one of their expectations to themselves was to understand each word in the passage. Extending from this anticipation, the students considered improving their vocabulary size was one of the most important things to sharpen their English listening.

Person Knowledge ranked third in this study, with a moderate mean of 3.64. From the result of MALQ and qualitative data, there were two points concluded for

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such a result. First, instead of listening, education in Taiwan emphasizes more on reading and writing. Students feel more stressed when doing their reading and writing test, so listening for them is not that challenged and anxious compared to reading and writing; especially several interviewees mentioned writing was the most difficult skill in their opinions. Secondly, test context was what this study focused on, which was rather familiar for students. They thought the listening test was not terrified compared to the real talk. Based on words from interviewees, in the listening test, they only need to choose suitable answers from the set items; however, if it is real talk, they have to figure out a proper response immediately without any standard answer to choose, which made them nervous and anxious. The second point showed correspondence to systems of the model of listening proposed by Imhof and Janusik (2006), which indicated that listening contexts indeed had a great impact on affective factors under person factors.

Aligned with the previous studies, the category of Mental Translation ranked relatively low as second to the last in this study (Goh and Hu,2014; Tavakoli, Shahraki & Rezazadeh,2012). There was only one item under Mental Translation above average (#18), which was about word-by-word translation during the listening process. However, the score of the item had been reversed, which means that students would not translate word-by-word when hearing listening passages. Observed from the result, students who scored high and those who scored low agreed they did not use this strategy during listening because it was time-consuming and unnecessary. Aside from this strategy, other kinds of translation still occurred frequently during the listening process. The reason may origin from listening instruction in the context. When teachers analyzed and explained listening tests, they tend to cultivate students' bottom-up processing by dividing sentences into words and explaining the meaning of the vocabulary or phrases in students' first language. Such instruction, according to

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Goh and Hu (2014), also led to student's tendency to understand the meaning of the vocabulary first and then build up for their understanding of the text. Also aligned with what Zeng (2104) proposed, it could be illustrated that doing translation enables students to ensure understanding of what they listened to and gave them a sense of security and fulfillment.

Planning and Evaluation fell as the last in this study. All the items in this category were below average. However, thinking about one's own listening process and evaluating one's listening capability were significant elements to achieve listening success (Richard and Burns, 2012). According to interview data, when talking about the evaluation part, interviewees tend to explain more about how they solve difficulty during the listening test which was categorized under the Problem Solving category rather than talking about what they would do before and after the listening test. Low metacognition about Planning and Evaluation may result from a lack of listening instruction, supported by Goh and Hu (2014), since learners don't receive explicit strategy instruction, it is expected that they are not familiar with these metacognitive contents. Moreover, several interviewees pointed out that listening was not what they would prepare in advance because listening was not emphasized skills like reading and writing. The fleeting feature of listening also makes participants seldom do post-test evaluation since they could not recall the passages anymore. Lack of instruction and focus on listening may be the reasons for such results.

The overall average of responses in MALQ was 3.70, on a six-point scale, which means students partially agree they have possessed listening metacognitive awareness under these five categories. Such average had indicated that senior high school students' listening metacognitive awareness was rather low and insufficient. Such a result also reflected that participants tend to be more conservative when responding to the questionnaire. It may due to the context in Taiwan, students have cultivated their

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English listening capabilities through listening tests rather than listening instruction. Students were used to receiving listening and note-taking practice. They thus barely had a chance to examine their own listening strategies and reflect on the mental process they engaged.

The Relationship between Proficiency Levels and Metacognitive Awareness under English Listening Test Context

To examine the relationship between students' metacognitive awareness and their listening performance, the correlation was used, and the result showed that except Mental Translation, other four categories and overall MALQ scores were found to be significantly related to their scores in a positive way. The result was aligned with the previous study (Goh & Hu,2014; Kök,2018; Tavakoli, Shahraki & Rezazadeh,2012; Vandergrift, 2003), indicating that the more metacognitive awareness students possess, the higher English proficiency they are. The qualitative data also support such results. However, the low correlation between Mental Translation and listening proficiency was unexpected, which brought out the necessity to further explore the relationship between students' listening metacognitive awareness and their listening proficiency levels.

The finding of ANOVA also indicated that except for Mental Translation, there was a significant difference between the two groups in the other four categories and overall MALQ. The discussion of the third research question mainly focused on the difference between the two proficiency groups (less and more proficient) and was categorized into five aspects of MALQ below.

For Directed Attention, there is a great distinction between the two groups based on the result of ANOVA as well as qualitative data. The difference between the two

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groups appears when facing listening difficulties. Aligned with O'mally, Chamot and Kupper (1989), students in the more proficient group would be more focused when they came across the word they did not understand, trying to link the words they understand for constructing the meaning of the word from the passage. Instead of focusing more on difficulties, students in the less proficient group would be more concentrated when hearing sentences they have already known due to their limited listening knowledge. When hearing unfamiliar words or phrases and messages that they cannot comprehend, they easily lose concentration and give up. Insufficient listening knowledge caused them not only to fail to answer questions correctly but also to give up concentrating on the listening test.

In terms of the category of Problem Solving, the difference between the two groups is also significant in both quantitative data and qualitative data. Students in the less proficient group preferred to understand listening passages word-by-word by using bottom-up processing (Gilakjani & Ahmadi, 2011). The tendency to use bottom-up processing makes these students focus too much on the text, trying hard to decode the sentences they listened which leads them unable to catch the main ideas of listening passages, miss important details, and identify the answer to the problem. Interview data also showed that nearly all interviewees in the less proficient group said that they would not associate what they heard with other relevant words under the same theme. With constrained strategy use, students with less English proficiency tend to guess the answers directly when facing listening problems. The more proficient group, on the other hand, used a wider variety of strategies to solve listening problems. They grabbed keywords in the passage by using bottom-up processing and linked listening content to associate knowledge under the same theme by utilizing top-down processing. They do equip interactive processing in this study.

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Moreover, students in the more proficient group use their own real-world knowledge to understand and interpret the passage (Gu et al., 2009). When facing problems, they make inferences first rather than guessing directly. Since these students have more metacognitive experience and strategy use which concurred with the previous studies (Richards & Burns, 2012; O'Malley & Chamot, 1990; Vandergrift & Goh, 2012), they know more about using appropriate strategies that can facilitate their listening comprehension and assist them to deal with their listening difficulties to achieve better listening comprehension.

As for the category of Person Knowledge, there is an obvious divergence between the more and the less proficient group. Items in Person Knowledge have relevance to affective factors mentioned by Vandergrift and Goh (2012), which include anxiety, self-efficacy, and motivation. From the result of both quantitative and qualitative data, students at the more proficient level in the study revealed high self-efficacy, which is supported by Badura (1993), enables them to possess high assurance of their capabilities, low anxiety to the listening test, and high motivation to deal with any listening difficulties. Since students understood most of the words in the test and knew what strategies they could use to achieve better listening comprehension, they do not consider English listening as a tough challenge. On the contrary, participants in the less proficient group shown low self-efficacy under the test context. They neither had the confidence nor believed they could understand most of the listening passages. Lack of certainty over their capabilities and strategies arouse high anxiety when doing the listening tests (Golchi, 2012), which makes them feel frustrated so as to develop low- motivation. Students in the less proficient group thus get stuck in the vicious cycle.

Mental Translation, which was the only category that did not demonstrate the

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obvious distinction between two proficiency groups in statistic data. The detail of the possible reason could be found in the qualitative data. According to the interview data, all participants in the more proficient group would not translate the passage they heard into their mother tongues, they used the English mindset to understand it instead. However, when facing unfamiliar words, some students still tended to translate those keywords into their mother tongue to help them understand. As for students in the less proficient group, they used relatively different strategies from the more proficient group. As Vandergrift (2003) revealed, to comprehend the listening input, students tended to decode the sentence and translate words they understood into their first language, which were belong to bottom-up processing. It was difficult for them to use an English mindset to interpret the passage, so doing translation makes them feel more secure and more capable of solving the problem. Still, there are some similarities between the two groups. For example, they may translate keywords if the words are unfamiliar to them and both of the groups would not translate word-by-word, which makes the quantitative result unable to differentiate the two groups. The qualitative data enabled the researcher to explain the result of quantitative data in detail, which highlighted the significance of the mixed-method.

As for the last category, Planning and Evaluation, there was also an inconsistency between the two groups in both qualitative and quantitative data. Supported by Graham (2008) and Lin and Gan (2014), students in the more proficient group evaluated their own listening capabilities, analyzed strengths and weaknesses, and made adjustments based on the effectiveness of the strategies so as to achieve better listening comprehension. On the other hand, students in the less proficient group did short-term evaluations instead. They may know which section in the listening test was particularly difficult for them, but they did not figure out many

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strategies to assist themselves. They tend to attribute their weakness to insufficient metacognitive knowledge. Lack of planning on how to listen to the passages leads to the failure of comprehension and frustrates students in the less proficient group to do the comprehensive evaluation on themselves, which caused the vicious cycle. All in all, the more proficient group takes active roles in Planning and Evaluation, while the less proficient group shows rather a passive action when doing reflection on their own abilities.

Apart from the MALQ categories, there were still other things in the interview data that worth being discussed. It was found that students in the lower proficient group particularly felt anxious about long passages in the listening test. Lack of abilities to capture key information for answering questions, they felt overwhelmed when receiving a great amount of listening input at one time. Facing such difficulty, they tend to give up listening and guess the answer directly. However, students in the more proficient group commonly do not regard the long passage as a challenge, since they quite get used to receiving English input in their daily lives. Based on the qualitative data, students in the more proficient group had typically spent more time on English listening, either for entertainment or purposeful training. They watched American dramas, listened to English songs and podcasts. Some of them receive dense listening training like listen to listening tests daily and discuss with classmates in the group in their cram school. Therefore, the data indicated that extensive listening is likely the significant element to improve students' listening competence and the use of listening strategy (Alm, 2013; Chang & Millett, 2016).

To summarize, the results of students' listening metacognitive awareness as measured by the MALQ and its five categories were mostly consistent with the previous studies (Goh & Hu,2014; O'Bryan & Hegelheimer,2009; Tavakoli, Shahraki

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& Rezazadeh,2012). Metacognitive awareness categorized under Directed Attention and Problem Solving are possessed most by Taiwanese high school students under listening test context. Also, Mental Translation fell to second to the last after reversed data, which indicated that students still tend to translate mentally into their mother tongue when receiving listening input. Different from these previous studies, Planning and Evaluation ranked last in this study, showing that students do not normally do the planning- evaluation- planning cycle under the test context (Vandergrift, 2004). As for the interactive effect of proficiency level and metacognitive awareness, there is a positive correlation between the two elements, which is accordant with the previous research (Harputlu & Ceylan, 2014; Li, 2013; Vandergrift & Baker,2015; Abd Latip, Swanto & Din,2020). After further examining the difference between the more and the less proficient groups, there are significant differences between the more and the less proficient group among four categories, except mental translation. There is not an obvious difference in Mental Translation, which is aligned with Goh and Hu (2014). On the other hand, the result from the qualitative data presented the difference between the two groups among all five categories. The findings in the study have brought out the necessity of listening instruction for students and the significance of students' self-evaluation.

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CHAPTER SIX

Conclusion

Summary of Research Findings

This study aims to investigate Taiwanese senior high school students' metacognitive awareness and strategy use of L2 listening under test context through the administration of MALQ and introspective interviews. The purpose of the study was to let students reflect on their listening process with the assistance of five categories in MALQ. According to the analysis and discussion in the previous chapter, the overall average of students' responses was relatively moderate in the MALQ questionnaire, which brought out their uncertainties for measuring their own metacognitive awareness and strategy use in listening. Since they used to do listening tests rather than receiving listening instruction, they normally focus more on the result rather than process-oriented reflection under test context.

Among five categories, students possessed more metacognitive awareness on Directed attention and Problem Solving, which may attribute to the fleeting features of listening and test context. Responses to items on the Person Knowledge ranked third and followed by Mental Translation. Planning and Evaluation has fallen as the last category, indicating that students seldom evaluate their own listening capabilities and barely process the planning-evaluation-planning cycle to obtain better listening comprehension. In terms of the relationship between students' metacognitive awareness and listening performance, the study concurred with the previous studies, showing that there is a positive relationship between them. Students who possess more metacognitive awareness perform better in their listening tests (Vandergrift,2003). Furthermore, this study probed into the difference between the more and the less proficient groups among each category, pointing out that apart from

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Mental Translation, the difference did exist in other categories. Different from the previous study, this study pointed out that students in both groups still use mental translation under test context, whereas from qualitative data, students in the different groups showed different levels of dependency toward Mental Translation.

Limitations and Suggestions for Future Research

The limitations of this study are presented in this section. Moreover, several suggestions are proposed, hoping to assist future research to explore students' listening metacognitive awareness and strategy use more comprehensively.

First, the present study only focused on 81 students in one regional school, with 8 students invited for introspective interviews. The population of the sample was thus limited and not representative enough of all senior high school students in Taiwan. Furthermore, participants in this study were all 11th graded students, they received high school education for one and a half years, which was only a half of their total high school years. The research proceeded during November and December, which approached the college entrance exam for 12th-grade students, so it was improper to recruit them as participants at that time. Therefore, to give a more complete picture of students' listening metacognitive awareness, future studies are suggested to expand scale by increasing the number of the students and extend to schools in different regions to raise students' diversities of the research. It was also advised to invite students who received complete high school education in the future to investigate their metacognitive awareness so as to know how students reflect on their own listening process in their whole senior high school life.

Second, this study only focused on senior high school students' metacognitive awareness and strategy use under test context. However, English listening does not

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confine to the test context, it happens in various aspects, including daily life conversation, entertainment, classroom, and lecture, etc. Future studies may invite students to think about their learning process under various contexts to make the investigation of listening metacognitive awareness more holistic.

Third, both quantitative data and qualitative data collected in the present study were based on students' self-reports, so the results may not accurately reflect the participants' actual listening metacognitive awareness and strategy use in the real testing context. To gain a more comprehensive understanding of students' state of listening metacognitive awareness and strategy use as well as to increase the credibility of the study, future research is suggested to collect data through various ways such as classroom observations and also from more perspectives such as those from the teachers, parents, and peers.

Fourth, students' test scores of TELC in this study were only marked by the researcher. Though the researcher had checked twice for every test sheet, it may still arouse concern about the accuracy of scores. Future studies are thus advised to find other people with a similar profession to check grading criteria and scores for ensuring the intra-rater reliability of the test scores.

Fifth, the present study used the questionnaire (MALQ) to examine students' listening metacognitive awareness, which only represents one type of model for investigating metacognitive awareness. The scope of the model can be limited in itself. For instance, items in the category of Mental Translation were reversely scored and considered to be negative in terms of developing students' listening metacognitive awareness. This may lead to some criticisms since not all researchers agree with the assumption that mental translation actually hinder students' metacognitive awareness.

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Therefore, future studies are suggested to adopt other models to examine students' listening metacognitive awareness and strategy use.

Last but not least, this study only examined students' metacognitive awareness once under test context. The result has reflected that students used to do listening tests rather than receiving listening instruction. Therefore, future studies can divide students into experimental groups and control groups by giving listening instruction to one group and not doing any guidance for the other to examine students' distinction under different treatment. Furthermore, future studies may do a long-term study by observing whether there is a transformation of students' listening metacognitive awareness from the first year to the third year in senior high school.

Pedagogical Implication

In this section, the pedagogical implications that emerged from the analysis and discussion are presented in the following paragraph.

First, the present study brings out the importance of students' listening metacognitive awareness and strategy use, which has been commonly overlooked under the current educational context. Teachers and students tend to put emphasis on strengthening reading and writing skills, while listening is a significant skill that deserves more focus. The study has revealed the relatively low listening metacognitive awareness and strategy use that these senior high school students possessed and the aspects they needed to improve based on the five categories in MALQ. The instructors and teachers may develop ways to enhance students' listening metacognitive awareness through classroom instruction that focused on students' weaknesses. Moreover, it is hoped that by presenting this study, teachers and instructors can give students more opportunities to evaluate their own listening

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process and give students more guidance to plan suitable listening strategies for successful listening comprehension. Teachers are also suggested to give students more positive encouragement to release their anxieties during the listening test. For students, they are encouraged to reflect on their own listening process and come up with listening strategies rather than only focusing on listening test results. Both teachers and students should value the importance of listening instruction and the development of more effective control over students' own listening processes.

Second, the curriculum designers and publishers should put more emphasis on students' listening metacognitive awareness. Though textbooks in the new curriculum have already designed one section called listening strategy in each lesson and illustrated different listening strategies, the sections mostly focus on the listening strategy introduction and related listening practice. According to the current study, students in Taiwan commonly lack opportunities and experiences to evaluate their own listening processes, which is a very significant step to cultivate students' listening metacognitive awareness. Therefore, curriculum designers and publishers are suggested to make some adjustments for the textbook and magazine. Questions that relate to listening metacognitive awareness, such as students' reflections about the listening strategy, can be added to the textbook. For example, a listening metacognitive checklist can be included in the textbook units for students to assess whether they have acquired the ability to use certain listening strategies.

Last but not least, from the result of the study, it could be found there is an obvious difference in students' states of metacognitive awareness between the two proficient groups. One of the significant reasons found in the data was that students at higher English listening proficiency levels improved their English listening skills through extensive listening. Under the EFL educational context, students barely have

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opportunities to expose to English in their daily lives, so they are encouraged to improve their English listening skills by listening to more audio materials they are interested in. Instructors and teachers are also suggested to provide various listening resources for students to motivate them to do English listening beyond classroom and listening tests. To sum up, with more listening instruction and guidance from the teachers, more reflective listening questions and checklists designed by the curriculum designers and publishers, and more extensive listening practices from the students, learners' English listening metacognitive awareness can surely be greatly improved and lead to more successful listening comprehension.

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REFERENCES

Abd Latip, N. A., Swanto, S., & Din, W. A. (2020). Metacognitive Awareness of Listening Strategies among Science Pre-University Students. *Universal Journal of Educational Research*, *8*(11), 5265-5270.

Aiken, L. R. (1982). *Psychological testing and assessment (4th edt.)*. Boston: Allyn & Bacon.

Alm, A. (2013). Extensive listening 2.0 with foreign language podcasts. *Innovation in Language Learning and Teaching*, *7*(3), 266-280.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, *28*(2), 117-148.

Bandura, A. (2001). Social cognitive theory: An agentive perspective. *Annual Review of Psychology*,*52*, 1–26.

Batova, N. (2013). Academic listening: Is there a place for bottom-up processing. *International Journal of Education and Research*, *1*(4), 1-10.

Bidabadi, F. S., & Yamat, H. (2011). The Relationship between Listening Strategies Used by Iranian EFL Freshman University Students and Their Listening Proficiency Levels. *English Language Teaching*, *4*(1), 26-32.

Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research & Development*, 18(1), 57-75.

Bormotova, L. S. (2010). *A qualitative study of metacognitive reflection: The beliefs, attitudes and reflective practices of developing professional educators*. Indiana University of Pennsylvania.

DOI:10.6814/NCCU202100934

Bozorgian, H. (2014). The role of metacognition in the development of EFL learners' listening skills. *International Journal of Listening*, *28*(3), 149-161.

Bozorgian, H., & Alamdari, E. F. (2018). Multimedia listening comprehension: Metacognitive instruction or metacognitive instruction through dialogic interaction. *ReCALL: The Journal of EUROCALL*, *30*(1), 131.

Cera, R., Mancini, M., & Antonietti, A. (2013). Relationships between metacognition, self-efficacy and self-regulation in learning. *Journal of Educational, Cultural and Psychological Studies (ECPS Journal)*, *4*(7), 115-141.

Chang, A. C., & Millett, S. (2016). Developing L2 listening fluency through extended listening-focused activities in an extensive listening programme. *RELC Journal*, *47*(3), 349-362.

Chou, M. H. (2019). Predicting self-efficacy in test preparation: Gender, value, anxiety, test performance, and strategies. *The Journal of Educational Research*, *112*(1), 61-71.

Coakley, C. G., & Wolvin, A. D. (1986). Listening in the native language. *Listening, reading, and writing: Analysis and application*, 11-42.

Cross, J. (2010). Utilizing dialogic recalls to determine L2 listeners' strategy use. *Innovation in Language Learning and Teaching 5*, no. 1: 81-100

Cross, J. (2015). Metacognition in L2 listening: Clarifying instructional theory and practice. *Tesol Quarterly*, *49*(4), 883-892.

Field, J. (2004). An insight into listeners' problems: Too much bottom-up or too much top-down?. *System*, *32*(3), 363-377.

DOI:10.6814/NCCU202100934

Flavell, J.H. (1976). Metacognitive aspects of problem solving. In L.B. Resnick (Ed.), *The nature of intelligence* (pp. 231–235). Hillsdale, NJ: Lawrence Erlbaum.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, *34*(10), 906.

Flowerdew, J, & Miller, L.(2005). *Second language listening: Theory and practice*: Cambridge University Press.

Gagné, E. D., Yekovich, C. W., & Yekovich, F. R. (1993). *The cognitive psychology of school learning*. New YorkL Harper Collins College Publishers.

Garrison, D. R., & Akyol, Z. (2015). Toward the development of a metacognition construct for communities of inquiry. *The Internet and Higher Education*, *24*, 66-71.

Gilakjani, A., & Ahmadi, M. (2011). A Study of Factors Affecting EFL Learners' English Listening Comprehension and the Strategies for Improvement. *Journal of Language Teaching and Research*, *2*(5). doi: 10.4304/jltr.2.5.977-988

Goh, C. (1997). Metacognitive awareness and second language listeners. *ELT Journal*, *51*(4), 361-369.

Goh, C. (2008). Metacognitive Instruction for Second Language Listening Development: Theory, Practice and Research Implications. *Regional Language Centre Journal*, *39*(2), 188 - 213.

Goh, C. C., & Hu, G. (2014). Exploring the relationship between metacognitive awareness and listening performance with questionnaire data. *Language Awareness*, *23*(3), 255-274.

DOI:10.6814/NCCU202100934

Golchi, M. M. (2012). Listening anxiety and its relationship with listening strategy use and listening comprehension among Iranian IELTS learners. *International Journal of English Linguistics*, *2*(4), 115.

Gu, P. Y., Hu, G., & Zhang, L. J. (2009). Listening strategies of Singaporean primary pupils. *Language learning in new English contexts: Studies of acquisition and development*, 55-74.

Hashempour, M., Ghonsooly, B., & Ghanizadeh, A. (2015). A study of translation students' self-regulation and metacognitive awareness in association with their gender and educational level. *International Journal of Comparative Literature and Translation Studies*, *3*(3), 60-69.

Harputlu, L., & Ceylan, E. (2014). The effects of motivation and metacognitive strategy use on EFL listening proficiency. *Procedia-Social and Behavioral Sciences*, *158*, 124-131.

Imhof, M., & Janusik, L. A. (2006). Development and validation of the Imhof-Janusik Listening Concepts Inventory to measure listening conceptualization differences between cultures. *Journal of Intercultural Communication Research*, *35*(2), 79-98.

Jinhong, B. (2011). Exploring students' use of metacognitive strategies in listening comprehension of the TEM-4: A study of English majors at a Chinese college (Unpublished master's thesis). Kristianstad University, Kristianstad, Sweden.

Kluwe, R. H. (1982). Cobnitive knowledge and executive control: Metacognition. *Springer*, *21*(1), 201-224.

Kök, İ. (2018). Relationship between listening comprehension strategy use and

DOI:10.6814/NCCU202100934

listening comprehension proficiency. *International Journal of Listening*, *32*(3), 163-179.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Thousand Oaks, CA: Sage.

Li, W. (2013). A Study of Metacognitive Awareness of Non-English Majors in L2 Listening. *Journal of Language Teaching & Research*, *4*(3).

Li, W.L. (2009). An action research of metacognitive strategy instruction in English listening. M.A. Thesis. Tamkang University, New Taipei City, Taiwan.

Liliana, C., & Lavinia, H. (2011). Gender differences in metacognitive skills. A study of the 8th grade pupils in Romania. *Procedia-Social and Behavioral Sciences*, *29*, 396-401.

Lin, C. Y., & Gan, X. N. (2014). Taiwanese college students' use of English listening strategies and self-regulated learning. *International Journal on Studies in English Language and Literature*, *2*(5), 57-65.

Liu, H. (2008). A Study of the Interrelationship between Listening Strategy Use, Listening Proficiency, and Learning Style. *ARECLS*, *8*, 84-104.

Liu, X. L., & Goh, C. (2006). Improving second language listening: Awareness and involvement. *Language Teacher Research in Asia*, 91-106.

Lin, C. Y., & Gan, X. N. (2014). Taiwanese college students' use of English listening strategies and self-regulated learning. *International Journal on Studies in English Language and Literature*, *2*(5), 57-65.

Mendelsohn, D. J. (1994). *Learning to listen: A strategy-based approach for the*

DOI:10.6814/NCCU202100934

second language learner. San Diego: Dominie Press.

O'Bryan, A., & Hegelheimer, V. (2009). Using a mixed-methods approach to explore strategies, metacognitive awareness and the effects of task design on listening development. *Canadian Journal of Applied Linguistics*, *12*(1), 9-38.

O'MALLEY, J. M., Chamot, A. U., & Küpper, L. (1989). Listening comprehension strategies in second language acquisition. *Applied linguistics*, *10*(4), 418-437.

O'malley, J. M., O'Malley, M. J., Chamot, A. U., & O'Malley, J. M. (1990). *Learning strategies in second language acquisition*. Cambridge university press.

Paris, S. G., & Winograd, P. (1990). How metacognition can promote academic learning and instruction. *Dimensions of thinking and cognitive instruction*, *1*, 15-51.

Rahimi, M., & Abedi, S. (2014). The relationship between listening self-efficacy and metacognitive awareness of listening strategies. *Procedia-Social and Behavioral Sciences*, *98*, 1454-1460.

Rahimi, M., & Katal, M. (2012). Metacognitive listening strategies awareness in learning English as a foreign language: A comparison between university and high-school students. *Procedia-Social and Behavioral Sciences*, *31*, 82-89.

Rahimirad, M., & Shams, M. R. (2014). The effect of activating metacognitive strategies on the listening performance and metacognitive awareness of EFL students. *International Journal of Listening*, *28*(3), 162-176.

Richards, J. C. & Burns, A. (2012). *Tips for teaching listening: A practical approach.* White Plains: Pearson Education.

DOI:10.6814/NCCU202100934

Richards, J. C. (2008). *Teaching listening and speaking*. Cambridge, England: Cambridge university press.

Rivers, W. M. (1966). Listening comprehension. The Modern Language Journal, 50(4), 196-204.

Rost, M. (2002). Listening tasks and language acquisition. In *JALT 2002 at Shizuoka Conference Proceedings. Retrieved September* (Vol. 25, p. 2012).

Ruan, Z. (2014). Metacognitive awareness of EFL student writers in a Chinese ELT context. *Language Awareness*, *23*(1-2), 76-91.

Tavakoli, M., Shahraki, S. H., & Rezazadeh, M. (2012). The relationship between metacognitive awareness and EFL listening performance: focusing on IELTS higher and lower scorers. *The Journal of Language Learning and Teaching*, *2*(2), 24-37.

Tran, T. Q., & Duong, T. M. (2020). Insights into Listening Comprehension Problems: A Case Study in Vietnam. *PASAA: Journal of Language Teaching and Learning in Thailand*, *59*, 77-100.

Vandergrift, L. (2003). Orchestrating strategy use: Toward a model of the skilled second language listener. *Language Learning, 53*, 463–496. doi:10.1111/1467-9922.00232

Vandergrift, L. (2004). 1. Listening to learn or learning to listen?. *Annual review of applied linguistics*, *24*, 3.

Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied linguistics*, *26*(1), 70-89.

DOI:10.6814/NCCU202100934

Vandergrift, L., & Goh, C. C. (2012). Teaching and learning second language listening: Metacognition in action. Routledge.

Vandergrift, L., & Tafaghodtari, M. H. (2010). Teaching L2 learners how to listen does make a difference: An empirical study. *Language learning*, *60*(2), 470-497.

Vandergrift, L., Goh, C., Mareschal, C., & Tafaghodtari, M. (2006). The Metacognitive Awareness Listening Questionnaire: Development and Validation. *Language Learning*, *56*(3), 431-462. doi: 10.1111/j.1467-9922.2006.00373.x

Wenden, A. L. (1998). Metacognitive knowledge and language learning1. *Applied Linguistics*, *19*(4), 515-537.

Zeng, Y. (2012). Metacognition and self-regulated learning (SRL) for Chinese EFL listening development (Doctoral dissertation).

Zeng, Y. (2014). Investigating the Effects of Metacognitive Instruction on Chinese EFL Learners' Listening Performance. *International Journal of Innovation in English Language Teaching and Research*, *3*(2), 139.

Zhang, D., & Goh, C. C. (2006). Strategy knowledge and perceived strategy use: Singaporean students' awareness of listening and speaking strategies. *Language Awareness*, *15*(3), 199-119.

Zeng, Y., & Goh, C. (2018). A self-regulated learning approach to extensive listening and its impact on listening achievement and metacognitive awareness. *Studies in Second Language Learning and Teaching*, *8*(2).

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APPENDIX A　The Chinese Version of MALQ

英語後設認知覺察聽力策略問卷

各位同學你好，

這份問卷目的是要了解你在進行英文聽力時，使用策略理解的情形及你對英文聽力的感受。你在問卷裡所回答的每個項目都只供研究用，你的資料不會外洩，也完全不會影響學校成績，所以請安心作答。

此問卷共分兩部份，第一部份關於個人英文學習背景，共 8 題。第二部份則是英語聽力後設認知策略的相關問題。在第二部份，你可以勾選的同意指數共有六個程度，由左到右為非常不同意到非堂同意，共 21 題。請仔細閱讀每一項，並按照實際狀況打勾。藉由這份問卷，你也可以檢視並更了解自己英文聽力的學習狀況。

以下這些問題並沒有對或錯的答案，請依照自己的實際狀況作答，謝謝你的合作與協助!

國立政治大學 英國語文學系碩士班 英語教學組
指導教授 許麗媛 博士
研究生 柯馨怡 敬上

第一部份:個人背景資料

1. 班級:
2. 姓名:
3. 年齡:_____歲
4. 性別:□男　□女
5. 你是否住過以英語為母語的國家?

   □是，我從_____歲到_____歲，曾住過_____

   □否
6. 對比我的同儕，我自認英文聽力能力程度:

   □非常好□好□還好　□差□非常差
7. 你覺得聽力在英語學習上有多重要?

   □非常重要　□重要　□還好　□不重要□非常不重要

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8. 除了課堂練習之外，你每周花在英語聽力學習時間約多久?

□0 小時 □1 小時以內 □1 小時到 2 小時 □2 小時 □2 小時以上

第二部份:英語聽力後設認知聽力策略問卷

填答說明:

請在閱讀下列敘述句後，依照你所了解的實際的情形來填答，每一題有五個選項，在非常同意到非常不同意的區間選項中**選一項**□內打 V 即可

敘述內容	非常不同意	不同意	不太同意	稍微同意	同意	非常同意
1. 在聽英聽測驗前，我會先在腦中計劃好要如何去聽英文內容。						
2. 當我聽不懂的時候，我會更專注在播放的內容上。						
3. 我覺得聽英文，比讀、講、寫英文都難。						
4. 當我聽到英文時，我會一邊在腦中翻譯成中文。						
5. 我會用我懂的單字去猜測聽不懂的字						
6. 當我分心的時候，我會立刻把注意力重新放回英聽測驗上。						
7. 聽英文的時候，我會把目前聽懂的內容跟我對這個聽力主題的了解作比較。						
8. 我覺得聽得懂英文對我來說是個挑戰						
9. 我會利用我的經驗跟知識去更了解我聽到的英文內容。						
10. 在聽英文前，我會去想看看我之前可能聽到的類似內容。						
11. 當我聽英文時，我會一邊去翻譯關鍵字。						
12. 當我分心時，我會試著再專注到聽力內容上。						
13. 當我發現我對聽到內容有誤解時，我可以很快去調整我的理解。						
14. 我聽完英文後，我會回想剛剛自己如何理解聽到的英文。在下次英聽前，我會思考如何去解						

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決我面臨的聽力困難並加以改進。						
15. 我聽英文時，並不覺得緊張。						
16. 當我聽不懂的時候，我就會乾脆放棄或停止去聽。						
17. 我會利用聽到的內容大意去幫助我猜不知道的字詞。						
18. 當我聽英文時，我會逐字逐句翻譯。						
19. 當我去猜一個英文單字的意思的時候，我會回想其他剛剛聽到的內容來檢視我的猜測是否合理。						
20. 當我聽英文時，會每隔一段時間檢視我是否滿意自己的聽力理解程度。						
21. 當我聽英文時，我會在心中先設立一個目標。						

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APPENDIX B　Interview Questions

Adapted from Ruan (2014).

I. 關於聽力本身看法 Questions about Listening

1. 英文聽力對你來說是困難的嗎?
   Do you think English listening is difficult?
2. 在進行英文聽力時，你的感受如何?是否會感覺很焦慮?
   How do you feel during English listening? Will you feel anxious when listening to English?
3. 想想那些自己聽不懂的時刻，你認為什麼因素造成讓你在當下聽不懂呢?
   Think of a time when listening was difficult, unsatisfying. Please be as specific as you can. What are some of the conditions that make listening difficult for you?
4. 你覺得學習英聽的目的是什麼?
   What do you think is the purpose of learning English listening?

II. 關於聽力策略使用 Questions about Listening Strategy

1. 通常你會做哪些步驟來完成聽力測驗?
   What steps do you usually go through to complete a listening task?
2. 你會在聽力測驗之前有個計畫嗎?如果有，你會做怎麼樣的計畫?
   Do you plan before starting to listen? If yes, what do you plan?
3. 你在完成聽力測驗後，有去評估自己的聽力狀況嗎?如果有，會如何評估呢?
   Do you judge how well you have listened after completing a listening task?
4. 你最常用哪些策略去幫助自己理解英文聽力內容?
   What are the strategies you use most to help you comprehend the listening task?
5. 對你來說，哪些策略在聽力測驗中是很重要的?
   What are the important strategies to you in completing a listening task?
6. 你覺得哪種類型的聽力題目對你來說最困難?
   What kinds of listening tasks are especially difficult for you?
7. 在面對聽不懂的聽力內容時，你通常會做什麼?
   If you have difficulty listening to the text, what will you normally do?
8. 你對自己的聽力還有哪些部份是想要改進的?
   What areas would you like to improve about your listening?
9. 你會做些什麼去增進英文聽力嗎?如果有，你做過什麼事情呢?如果沒有，你會想做些什麼呢?
   Do you do anything to improve your listening, if yes, what do you do? If no, what will you plan to do?

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APPENDIX C　Parent Consent Form

家長同意書

親愛的家長您好，

我是政治大學英國語文學系碩士班英語教學組的研究生柯馨怡，目前在做**英語後設認知覺察聽力策略**的相關研究。本次研究將配合大考中心高中英語聽力測驗，觀察高中生對於英語聽力的策略使用情形，以**幫助學生去檢視自己目前的英語聽力學習狀況**。

本研究預計利用**民國 109 年 12 月 15 日**一堂課(50 分鐘)進行測驗與填寫問卷。問卷內容僅用於瞭解學生的英文學習背景與聽力策略情形，將依法把任何可辨識學生的身分之紀錄與個人隱私資料視為機密來處理，不會公開。

測驗後，本人將邀請學生接受訪談，訪談時間**約一小時，於課後時間進行，不會影響學生上課權益**。訪談過程中會進行錄音，內容僅供研究分析使用，受訪者都將以匿名的方式處理。另外，本問卷與訪談僅進行一次，不會有額外的作業且不作為任何評量依據。

若您同意孩子參與本次研究，煩請在下方簽章欄打勾並簽名，我們一起讓英語教育變更好，謝謝您!

簽章欄

班級:_____　　座號:_____ 學生: _____

□本人瞭解上述告知事項，並同意我的孩子進行英聽測驗、填寫問卷並接受訪談

□本人瞭解上述告知事項，本人同意我的孩子進行英聽測驗、填寫問卷，但不接受訪談

□本人瞭解上述告知事項，本人不同意我的孩子進行英聽測驗、填寫問卷及接受訪談

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家長簽章:_____

日期: 109 年 ____月 ____日

DOI:10.6814/NCCU202100934