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Author(s)	Qi Li, Limei Zhang and Christine C. M. Goh

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Metacognitive Instruction in Second Language Listening: Does Language Proficiency Matter?

Qi Li*

*Foreign Department, Chongqing University of Posts and Telecommunications,
Chongqing, China*

Limei Zhang

Singapore Centre for Chinese Language, Nanyang Technological University, Singapore

Christine C. M. Goh

National Institute of Education, Nanyang Technological University

Bioprofiles:

Qi Li holds an MA in applied linguistics from Nanyang Technological University, Singapore, and currently she is doing her PhD in the University of Auckland, New Zealand. She is a lecturer in the Foreign Department at Chongqing University of Posts and Telecommunications. Her areas of interests are teaching speaking, teaching listening, and cross-cultural humor. She is the first author of the book *Job-hunting English*, co-authored a textbook *Oral English* published by China Renmin University Press, and published papers on CNKI indexed journals. *Email: 515931627@qq.com Address: Foreign Department, Chongqing University of Posts and Telecommunications

Limei Zhang is currently working as a lecturer at the Singapore Centre for Chinese Language, Nanyang Technological University, where she provides teacher training courses in language assessment and research methods. She received her PhD in applied linguistics with an emphasis on language assessment at the National Institute of Education, Nanyang Technological University. Her research interests are in language assessment in relation to classroom teaching and learning, language assessment literacy, assessing reading and writing, bilingualism and biliteracy, curriculum design and evaluation, language learner metacognition, translation etc. She has published articles in journals including *Language Testing*, *Language Assessment Quarterly*, *The Asia-Pacific Education Researcher*.

Email: limeizh2008@yahoo.com, Address: 287 Ghim Moh Road, Singapore 279623

Christine Goh is Professor of Education (Linguistics and Language Education) and the Director of the National Institute of Education, Nanyang Technological University, Singapore. Her interests are in bilingual/ second language oracy (listening and speaking), metacognition and teacher cognition. She publishes extensively and contributes to theory building as well as academic and professional discourse in English language teaching, learning and assessment. Email: christine.goh@nie.edu.sg

Address: 1, Nanyang Walk, National Institute of Education, Nanyang Technological University, Singapore 637616.

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Abstract

The metacognitive approach to listening is drawing increasing attention in the field of second language learning (Vandergrift & Goh, 2012). Nevertheless, the findings of the effects of the metacognitive approach on metacognitive knowledge and listening comprehension are inconclusive, and the impact of language proficiency on how much metacognition intervenes is not certain yet (Vandergrift & Baker, 2018). This study investigates the impact of language proficiency on metacognition in implementing the metacognitive approach and examines whether language proficiency has the same impact on different aspects of metacognition as measured by the Metacognitive Awareness Listening Questionnaire (MALQ) (Vandergrift, Goh, Tafaghodtari & Mareschal, 2006). One hundred twelve non-English majors in a university in China participated in this study. Results showed that the listening performance of the experimental group improved significantly compared with that of the control group. This might be attributed to the holistic nature of the metacognitive approach. However, the lower language proficiency may have constrained learners' engagement in metacognitive activities as the participants had trouble in using some real-time strategies successfully due to their lower language proficiency. Overall, the findings provide support for and shed light on implementing the metacognitive approach.

Keywords: metacognitive approach, listening comprehension; Chinese college students

Introduction

Metacognition has been widely recognized in improving language learning (Daguay-James & Bulusan, 2020; Victori & Lockhart, 1995; Zhang, 2014). The metacognitive approach to second language (L2) listening has been examined in various studies (Goh & Taib, 2006; Liu & Goh, 2006; Mareschal, 2007). Studies have not yielded consistent results regarding how this approach can improve students' language awareness or listening achievement. For example, some researchers (Rahimirad & Shams, 2014; Vandergrift & Tafaghodtari, 2010) found that their experimental groups significantly outperformed the control groups when the metacognitive approach to listening was used. Other researchers (Lam, 2011; Wang, 2016) found there was no significant difference between the groups in their studies on strategy and metacognitive instruction. Besides, some studies (Rahimirad & Shams, 2014; Wang, 2016)

showed that certain kinds of knowledge, such as mental translation, were difficult to improve.

Consequently, some studies (Hulstijn, 2015; Renandya, 2012) suggested that listeners need to reach a certain threshold of language proficiency before they could benefit from learning to use strategies. Nevertheless, some other researchers (Mareschal, 2007; Vandergrift & Tafaghodtari, 2010) observed contradictory results. Therefore, this study sets out to examine the impact that language proficiency may have on learners' metacognition about L2 listening by not only studying their correlation quantitatively but also providing qualitative data gathered in the process of the implementation of the metacognitive approach. In this way, this study hopes to shed light on how language proficiency interacts with metacognition and discusses how the metacognitive approach would most likely benefit listeners when language proficiency is considered.

Metacognition, metacognitive approach and listening comprehension

Flavell (1976) defined metacognition as one's knowledge and ability to think about and control one's cognitive processes. Vandergrift and Goh (2012) applied Flavell's conception of metacognition to teaching and learning second language listening and highlighted three components of metacognition: metacognitive experience, metacognitive knowledge, and strategy use.

Metacognitive experiences are thoughts and feelings about listening and learning to listen, which are fleeting. Metacognitive knowledge is a form of declarative or stored knowledge that an individual possesses. It comprises three kinds of knowledge: person knowledge, task knowledge, and strategy knowledge. Person knowledge involves self-concept and self-efficacy. The former refers to the stable trait one presents during listening, such as feeling anxious or confident, while the latter is an individual's judgment of their ability to achieve specific learning goals (Wenden, 1998). Task knowledge involves knowledge about affective processes a task may trigger, skills a specific task requires, and features of a task that can facilitate listening (Vandergrift & Goh, 2012). Strategy knowledge refers to knowledge about effective strategies that can facilitate one's listening comprehension and learning.

In contrast to strategy knowledge, strategy use refers to the actual deployment of appropriate procedures or actions to accomplish learning goals. Such strategies include planning, monitoring, and evaluation for regulating learning that Brown (1987) referred to as metacognitive strategies. They also include problem-solving strategies that involve the cognitive manipulation of listening input to facilitate comprehension.

While metacognitive experience is an involuntary response, metacognitive knowledge and strategy use can be enhanced by appropriate instruction (Paris & Winograd, 1990; Vandergrift & Goh, 2012). Metacognition has been widely recognized to exert an important effect on language learning (Victori & Lockhart, 1995; Wenden, 1991), which accounts for approximately 17% of the variance in learning (Veenman, Van Hout-Wolters, & Afflerbach, 2006; Wenden, 1991).

Vandergrift, Goh, Mareschal, and Tafaghodtari (2006) developed the Metacognitive Awareness Listening Questionnaire (MALQ) to elicit learners' metacognitive knowledge and strategy use. This instrument includes five subscales in listening: problem-solving, planning and evaluation, mental translation, person knowledge, and directed attention. Metacognitive awareness about listening was found to account for 13 to 22 % of the variance in listening performance of university-level language learners (Goh & Hu, 2014; Vandergrift et al., 2006).

These results, coupled with theoretical developments, lay a preliminary foundation for the metacognitive approach in L2 listening, which aims to enhance listeners' metacognitive knowledge and strategy use to improve listening comprehension (Vandergrift & Goh, 2012). This is carried out through metacognitive instruction that teachers could use to guide learners through the process of L2 listening. It comprises different pedagogical procedures to increase learners' metacognitive awareness about the listening process as well as the use of strategies for facilitating listening. Learning activities for this purpose comprise integrated experiential listening tasks and guided reflections on listening (Goh, 2008). Metacognitive tools and activities such as listening diaries and process-based discussions can be integrated with listening comprehension practice to increase learners' metacognitive awareness about listening (Goh & Taib, 2006). Vandergrift (2007) drew on knowledge about skilled L2 listeners (Goh, 1997; Vandergrift, 1997a), cognitive psychology (Paris & Winograd, 1990), and self-regulated language learning (Wenden, 1998) to propose a pedagogical sequence that can take learners through various listening processes when listening to audio and video input. This metacognitive pedagogical sequence develops learners' person knowledge, task knowledge, and strategy knowledge by guiding students through a metacognitive process that involves planning, monitoring, problem-solving, and evaluation. This helps learners develop metacognitive awareness and improve listening comprehension.

Impact of language proficiency on a metacognitive approach to listening

Lee and Schallert (1997) observed that language proficiency refers to “language competence, metalinguistic awareness, and the ability to speak, listen, read, and write the language in

contextually appropriate ways.” (p.716). Indeed, language proficiency can be conceptualized as “unitary and divisible” (Harsch, 2014, p. 153) based on various purposes of assessment, and there is a growing interest in studying one dimension of language proficiency, particularly regarding the importance of vocabulary knowledge in L2 listening (Lange & Matthews, 2020; Vafae & Suzuki, 2020; Wallace, 2022; Wang & Treffers-Daller, 2017). But this study intends to examine the possible mediation effect of language proficiency for metacognitive awareness. For the purposes of the study, the researchers chose this holistic approach of defining language proficiency proposed by Lee and Schallert (1997). It is more likely to validly indicate the competencies of language users.

Studies regarding the impact of language proficiency on metacognition have mainly focused on examining its effect on strategy use that is subsumed by metacognition. Researchers (Goh, 1998, 1999, 2002; Vandergrift, 1997b, 2003) found that novice-level listeners tend to use fewer strategies while advanced-level listeners use more strategies and in an orchestrated and appropriate way. The idea behind strategy instruction is to teach the strategies used by skillful listeners to less skillful ones so that the latter can use strategies to facilitate listening comprehension. But Macaro, Graham, and Vanderplank (2007) advised caution toward causality between strategy use and listening improvement. Some researchers (Alderson, 1984; Renandya, 2012; Skehan, 1989) suggested that L2 listeners needed to reach a certain threshold of proficiency before they could benefit from strategy training. This threshold of proficiency is explained as a level of linguistic proficiency (Clarke, 1980; Cummins, 1979), including the knowledge of vocabulary, grammar, phonology, and pragmatics as well as the speed of accessing them (Canale & Swain, 1980; Hulstijn, 2015). It forms the foundation of listening comprehension and can determine to the extent listeners can use the acquired strategies successfully (Mendelsohn, 2006; Vandergrift & Baker, 2015).

In empirical studies, some researchers (Gu, Hu, & Zhang, 2009; Osada, 2001) found that novice-level listeners spent a lot of energy on decoding and therefore did not have the cognitive capacity to monitor their understanding. Graham, Santos, and Vanderplank (2008) also found that novice-level listeners did not use contextual knowledge to evaluate their comprehension and were misled by words they had predicted before the listening task began.

Recently, the focus of learner-centered listening instruction has shifted from predominantly strategy training to the more comprehensive metacognitive approach. Some studies argued that metacognition would become more important for listening performance after L2 users have achieved a basic level of proficiency (Hulstijn, 2015; Schoonen, Hulstijn, & Bossers, 1998; Vandergrift & Baker’s, 2015). Vandergrift and Baker (2015, 2018) suggested

the possibility of a threshold for L2 listening. They found that metacognitive awareness did not predict L2 listening comprehension for low-level listeners. Wallace (2022) reported that metacognitive awareness did not contribute to listening comprehension directly. Nevertheless, it had an indirect effect on listening comprehension through topical knowledge that helped listeners overcome comprehension gaps.

Some researchers, however, suggested otherwise. Wang and Treffers-Daller (2017) reported they did not find significant differences in metacognitive strategy use between learners with lower and higher-level of vocabulary knowledge. Vandergrift and Tafaghodtari (2010) provided empirical evidence that the less skilled listeners in the experimental group made greater gains in listening achievement than their more skilled peers.

So, to have a better understanding of the relationship between language proficiency and metacognition, this study examined whether learners' language proficiency exerted influence on their metacognition in listening. This was examined in the context of metacognitive instruction delivered to them.

Implications of previous research for this study

Although a number of studies (Goh & Taib, 2006; Rahimirad & Zare-ee, 2015; Zarrabi, 2016) have examined the effect of a metacognitive approach on improving students' metacognitive knowledge, some have not reported positive results (Rahimirad & Shams, 2014; Wang, 2016). Wang (2016) suggested that the reason might be due to 'their insufficiency in knowledge about the demands of listening tasks' (p. 84). Vandergrift and Baker (2015) reported that only the person knowledge factor was significant in predicting L2 listening for all the participants, while the problem-solving factor proved to be significant for one cohort, and the directed attention factor was significant for another. The researchers did not explore the reasons behind the difference. Is it possible that low language proficiency compromises the efficacy of a metacognitive approach to listening instruction? The present study aims to explore the issue.

As for the test performance after implementing the metacognitive approach, the research results are still not unanimous. Some researchers (Rahimirad & Shams, 2014; Vandergrift & Tafaghodtari, 2010; Zeng, 2014) found that experimental groups that experienced metacognitive interventions significantly outperformed control groups not exposed to such metacognitive approaches. On the other hand, some other researchers (Lam, 2011 ; Wang, 2016) found there was no significant difference between the experimental group exposed to the metacognitive approach and the control group that received strategy instruction. This leads to

the question as to what caused the different results, and the role language proficiency may have played in the studies on the metacognitive approach.

To sum up, metacognition has been widely recognized to exert an important effect on language learning, and it lays a preliminary foundation for the metacognitive approach to listening, which aims to enhance listeners' metacognitive awareness and their listening comprehension. Nevertheless, some researchers argue that language proficiency might short-circuit the implementation of a metacognitive approach. Besides, the studies about the metacognitive approach have not yielded consistent results regarding improving either language proficiency or test performance.

To improve the implementation of the metacognitive approach, it is necessary to understand what role language proficiency plays. To answer this question, three issues need to be addressed. First, what is the impact of language proficiency on learners' metacognition when the metacognitive approach is implemented? Second, does language proficiency have the same impact on different aspects of learners' metacognition as measured by the five factors in the MALQ? Third, a metacognitive approach to listening (the metacognitive pedagogical sequence) is more than just developing and utilizing metacognition. It is a process-based approach that integrates listening, experiential learning tasks, discussion, and guided reflections for listening. It is not enough to just investigate the effect of language proficiency on metacognition. Rather, we need to investigate the effect of this approach on improving learners' listening performance as a whole in the circumstance that language proficiency may constrain the application of metacognition. In light of the above, the current study aims to answer the following research questions:

1. What is the impact of language proficiency on metacognition in the implementation of a metacognitive approach to teaching listening?
2. Does language proficiency have the same impact on each of the five subscales of metacognition as measured in the MALQ?
3. Will the metacognitive approach still be effective even when language proficiency exerts a negative effect on it?

Research Methodology

Background of the Study

In less-developed western parts of China, students have limited chances of being exposed to

authentic English input, such as newspapers, magazines, televisions, social media, and so on. This exerts negative effects on the degree of language proficiency learners of English as a Foreign Language (EFL) hope to achieve (De Wilde, Brysbaert, & Eyckmans, 2020). According to the National College English Curriculum Requirement (Ministry of Education, 2007), non-English majors who have not met the basic requirement are supposed to have low English proficiency. The basic requirements are:

Students should be able to follow classroom instructions, everyday conversations, and lectures on general topics conducted in English. They should be able to understand English radio and TV programs spoken at a speed of about 130 to 150 words per minute (wpm) - grasping the main ideas and key points. They are expected to be able to employ basic listening strategies to facilitate comprehension. (Ministry of Education, 2007, p. 1)

Participants

One hundred twelve non-English major students were invited to participate in the study. These students, aged between 18 and 20, were from two intact classes in a university located in the western part of China. One class was designated as the control group who was taught with the traditional product approach, while the other one was the experimental group who was treated with the metacognitive approach. The product approach emphasizes the outcomes of listening instead of how to improve listening (Field, 1998). Students gave answers after listening and then checked their answers with the correct ones given by teachers. Both the experimental and the control groups were selected from two different departments to avoid interaction among students to prevent experiment treatment diffusion (Dornyei, 2011). There were 59 students in the experimental group and 53 students in the control group. All participants, as freshmen in the university, had at least six years of English learning experience, so they shared similar language backgrounds and experiences in learning English.

Since the participants were non-English majors, English learning was not a priority for them. Many students might not need to use English at work after graduation, so they learned English only to pass tests in universities. This led to a lack of sufficient motivation. Before the study started, the participants from the experimental group took a language proficiency test. Their average score is 59.34 out of 100, indicating that they failed to meet the basic requirement set by the Ministry of Education (MOE) in China for non-English majors. Since this study does not concern the language proficiency results of the control group, only the experimental group completed the language proficiency test.

Instruments

Six instruments were used in the study, including a proficiency test, pre, and post-intervention test, the MALQ, questionnaires about perceptions, interviews, and classroom observations. All instruments were conducted outside classroom time except classroom observations.

Proficiency test Following the holistic approach of defining language proficiency (Lee & Schallert, 1997), a practice version of the College English Test Band 4 (CET4) was used as a measure of participants' language proficiency in English. CET4 comprises four sections, including listening (35%), reading (35%), comprehension with vocabulary & structure and cloze (15%), and writing (15%). It takes two hours and five minutes to complete the CET4 test.

Moreover, as the practice version of CET4 is issued by the CET4 examination board affiliated with the Department of Higher Education of the MOE in China, the validity and reliability of the test are well established. Besides, CET4 is a nationwide standardized English proficiency test directed and supervised by the Department of Higher Education of the MOE in China, and it is considered as evidence of one's English proficiency.

Pre-intervention test (pre-test) and post-intervention test (post-test) Both the experimental and the control group took these two tests to measure their listening performance. The test material was the listening section of the practice version of CET 4. Two different practice versions of CET4 were used for pre-test and post-test, respectively. Both pre-test and post-test lasted 30 minutes, and they were respectively conducted before and after the 5-week intervention. Both tests were conducted in the same conditions by the same researcher.

The MALQ The MALQ (Vandergrift, Goh, Mareschal & Tafaghodtari, 2006) is a widely acknowledged instrument to assess and raise learners' metacognitive awareness. There are 21 items in the MALQ, which taps five factors of metacognitive awareness related to L2 listening: person knowledge, planning and evaluation, mental translation, directed attention, and problem-solving.

This instrument has been tested with an exploratory factor analysis of the responses of a large sample (N=996) and a following confirmatory factor analysis with another large but different sample (N=512) with different levels of language proficiency from different countries and in different learning contexts (Altuwairesh, 2013; Ehrich & Henderson, 2019; Goh & Hu, 2014; Rahimirad & Shams, 2014; Roussel, Gruson & Galan, 2019; Tanewong, 2019; Vandergrift, Goh, Mareschal & Tafaghodtari, 2006; Vandergrift & Tafaghodtari, 2010). The result demonstrates that the MALQ is an instrument with high reliability and validity.

A Chinese version of the MALQ was administered to ensure students could fully understand it. Following Qin's (2009) procedure, the English version of the MALQ was

translated into Chinese by the researchers of this paper, reviewed by two other researchers, and then undertaken by students prior to the actual experiments. The Chinese version of the questionnaire is shown in Appendix 1. The experimental group had to complete the MALQ at the beginning and the end of the intervention.

Questionnaires about perceptions A questionnaire survey was conducted after the first, third, and last session of the intervention to tap into students' perceptions of the metacognitive approach as well as to record the change of their perceptions. The example items include 'How do you feel about the class today?' and 'Why do you feel this way?'

Interviews Individual interviews were conducted to elicit elaboration of the participants' written comments in the questionnaires about perceptions after the first, third and fifth session, respectively. About sixty students, around 20 after each of the three sessions, were interviewed, and each follow-up interview lasted about 3-5 minutes. After researchers coded the results of the questionnaire and found comments that needed to be further explained by students, the students were invited to elaborate on their comments. The interview allows students to provide rich and in-depth elaborations on their comments in the questionnaires about perceptions so that researchers can fully understand the comments. For example, a student wrote, "I involve in the class more actively during the intervention" in the questionnaire about perceptions. Then in the follow-up interview, he was asked to explain the reason he was active in class and to describe his behavior he considered more active than before. All interviews were conducted in Chinese to avoid language barriers in communication. Since this study did not need feedbacks from the control group, only the experimental group was interviewed.

Classroom observation Unstructured observations were conducted by the researchers to provide a more objective account of learners' behaviors in class. Researchers took notes when it was necessary to add direct information to the self-report accounts from questionnaires and interviews.

Procedures

Before the study was conducted, the participants took the language proficiency test, pre-intervention test and responded to the MALQ. They were also invited to respond to the questionnaires about their perceptions of the metacognitive approach after the first, third and last session of the intervention. In addition, three rounds of follow-up interviews were conducted after each survey. Classroom observation provided more direct data about what students did during the intervention.

After the intervention, the participants took the post-intervention test and responded to the

MALQ. The data collection procedure is summarized in Table 1.

Table 1 Procedure of the data collection

Intervention (pedagogical sequence)	Language proficiency test	Pre-test	Post-test	MALQ	Questionnaires about perception	Interview
Before the intervention	✓	✓		✓		
Week 1					✓	✓
Week 2						
Week 3					✓	✓
Week 4						
Week 5					✓	✓
After the intervention			✓	✓		

Instruction

The intervention lasted for five weeks with two periods of listening classes in each week and 45 minutes for each lesson. Both groups were informed that they were involved in the experimentation in the study, and both groups were taught by the same researcher to eliminate threats to the internal validity of the study regarding variations among instructors.

The instruction of the experimental group was adapted from the metacognitive pedagogical sequence proposed by Vandergrift and Goh (2012). Two types of lesson plans were designed based on the multi-stage pedagogical sequence. Lesson Plan A was easier than Lesson Plan B in that Plan A only demanded students to understand and present the summary of events of the listening material, while Plan B required students to understand more detailed information and produce it in written form. These two plans applied to lessons with different difficulties. Moreover, to engage students in discussion, the researchers provided additional prompts involving modeling thinking. The control group received the traditional product approach, which is very common in Chinese listening classes.

Data analysis

Based on previous literature (Mendelsohn, 2006; Osada, 2001; Vandergrift & Baker, 2015), we first examined the effect of language proficiency on metacognition using linear regression. Then, we calculated the effect sizes (i.e., Cohen's *d*; small=.20; medium=.50; large=.80) of the increase of metacognitive awareness as represented by the five MALQ subscales (Cohen, 1988). Further, we conducted an independent sample *t*-test to investigate the effect of the metacognitive instruction on the improvement of students' listening ability in the experimental and control group.

Qualitative data from interviews and classroom observation was categorized and coded. First, researchers read through all data gathered from the interviews, classroom observation and questionnaires about perceptions several times to obtain a general sense of the data. Second, researchers read the data from the beginning again while noticing patterns that emerged, and thus, researchers could divide the data into several categories. Third, researchers read the data again and improved the categories. Last, researchers put the coded data away for a month and re-coded it again before writing the paper.

Results and Discussion

This section presents the results and discussion in relation to the three research questions.

Impact of language proficiency on metacognition

Linear regression was conducted to investigate the impact of language proficiency on metacognition before and after the implementation of the metacognitive approach. Table 2 presents the results.

Table 2 Results of linear regression on the impact of language proficiency on metacognition

	Unstandardized regression coefficient	Constant	R square	Standardized regression coefficient (β)	<i>p</i> -value
Pre-MALQ	.00	3.73	.00	.06	.64
Post-MALQ	.10	-1.06	.24	.48	.00

As indicated before the intervention, language proficiency had little effect on pre-MALQ ($\beta = .06, p > .05$). However, after the intervention, language proficiency affected students' post-MALQ score significantly ($\beta = .48, p < .05$), i.e., 23 % (.48*.48) of the variance in the post-MALQ score was explained by their language proficiency level.

That is, before the intervention, students' metacognitive awareness did not have a significant relation with language proficiency. It was probably because they had received no systematic metacognitive instruction before and had limited metacognitive knowledge about listening. During the intervention, they experienced various metacognitive activities and became conscious of their own metacognition, such as strategy use. However, when they tried to use the strategies they learned, they were constrained by their limited language proficiency level. They reported they were not able to divert attention to using strategies such as inferencing during listening because they were absorbed in decoding. Some even reported that they barely understood anything, and thus they could not distinguish which parts contained key information. The learners' experience seems to suggest that listeners would need a certain level of proficiency to benefit from strategy instruction (Renandya, 2012; Skehan, 1989). However, the data discussed here is not derived from strategy instruction, which has been shown to benefit lower proficiency listeners (Yeldham, 2016). It may be that for learners to benefit from strategy use, more time is needed to train them explicitly to use strategies.

Impact of language proficiency on each of the five subscales of metacognition

A quantitative analysis was conducted to investigate the influence of language proficiency on the five subscales, respectively. The experimental group, which consisted of 59 students, was divided into three groups based on the proficiency test. The top 18 students were designated as the more proficient group, while the bottom 18 students were the less proficient group. These two groups received the same intervention, but their language proficiency was different. Therefore, if the two group's metacognitive awareness is different after the same intervention, it might be inferred that the difference could have been caused by the language proficiency.

The descriptive statistics of the test score and MALQ was calculated. Students' pre-test score for the experiment group is 11.92 (Standard Deviation (SD)=3.19) and post-test 17.20 (SD =3.91), while the pre-test score for the control group is 12.23 (SD =3.64) and post-test 15.65 (SD =3.12). The internal reliability coefficient Cronbach's alpha for the MALQ is .87, indicating the instrument is reliable. Table 3 presents the results of descriptive statistics of the MALQ subscales for both higher and lower-level groups. As shown in Table 3, the effect sizes of the

five subscales for the higher-level group are larger than those of the lower-level group in general.

Table 3 Results of descriptive statistics of the MALQ subscales

		Problem-solving		Mental translation		Directed attention		Person knowledge		Planning & evaluation	
		<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>
High level	Mean	4.13	4.21	3.39	3.50	3.52	4.11	4.10	4.19	3.47	4.31
	SD	0.98	0.61	0.65	0.55	0.51	0.66	1.04	0.74	0.83	0.82
	Effect size	0.81		0.60		0.55		0.90		1.02	
Low level	Mean	3.74	3.75	4.33	3.92	3.93	3.48	4.54	3.80	2.90	3.59
	SD	0.92	0.66	0.96	0.76	0.82	0.54	0.67	1.03	0.93	0.68
	Effect size	0.01		-0.47		-0.49		-0.18		0.85	

As regards problem solving, the mean score suggested the higher-level group (effect size= 0.81) showed more improvement than the lower-level group (effect size=0.01). It is worth noting that three of its items (items 5, 17, and 19) involve the strategy of inferencing, which refers to guessing missing information with contextual clues, familiar content words, and knowledge about the world and target language (Goh, 2002). For less proficient students with less vocabulary knowledge, it might be difficult for them to infer the meaning of new words with such limited resources. In follow-up interviews, less proficient students reported that they directed all their attention to the input and did not try to guess the meaning of new words.

The other three items (items 7, 9, and 13) are about monitoring and evaluating comprehension in the process of listening with the information from other parts of the listening input and background knowledge. Less proficient students may be unable to monitor their listening online due to their heavy cognitive load. In the same line, the effect size showed the mental translation of the higher-level group (effect size=0.60) increased while the lower-level group (effect size=-0.47) dropped slightly. Less proficient students found it hard to ‘chunk streams of speech’ and ‘recognize words they know’ (Goh, 2000, p. 59). Therefore, even though they were taught they should not translate word by word in the head during listening, the limited automaticity in word recognition and interpretations constrained them from producing parallel processing of text and meaning (Hulstijn, 2003; Segalowitz, 2003).

As regards directed attention, the higher-level group improved with a medium-level effect size of 0.55, while the lower-level group dropped a little. Directed attention requires students to continue to listen despite difficulty. Although students knew this strategy, less proficient students still reported that they were stuck at the incomprehensible parts, or their attention just started to wander when they came across difficult parts. Some said they probably did not concentrate enough in class. The results suggested that students realized their problem about losing concentration but sometimes could not overcome it. Considering the different performance between the higher-level and lower-level groups, this may suggest that students' low proficiency level might have a negative effect on their ability to direct their attention while listening. Nevertheless, students' self-reports could not provide a sound explanation as to the connection between the lower proficiency and poor performance of directed attention.

The finding regarding person knowledge showed that the more proficient group improved with a large effect size while the less proficient group dropped a little. This result supported the previous finding that less proficient students were low in confidence and more concerned about their performance (Goh & Hu, 2014; Graham, 2006). A less proficient student's comment represents this point: *'I feel more and more nervous. I don't know the reason, but that is my real feeling. Maybe I can't focus my attention because I know more strategies now.'*

The finding regarding planning and evaluation showed that both groups improved to a large extent. The planning strategies (items 1, 10, and 21) involve making a plan, having a goal or thinking about similar texts before listening; the evaluation strategies are about assessing one's listening comprehension after listening (item 14) or after some initial interpretation has been arrived at (item 20). That is, the planning and evaluation strategies are applied before or after the listening process. So, they are not constrained by mental capacity, which otherwise will be occupied by other cognitive processes during listening. Thus, they improved significantly for both groups. This corroborates with Goh and Hu's (2014) study, which shows that the subscale planning and evaluation is not a significant predictor of L2 listening proficiency.

In sum, it is worth mentioning that the reason that some subscales did not yield significant change after the intervention might be due to a relatively short experimental time. However, the change and the interview results might shed some light on the developing path of students' specific strategies after receiving the intervention. This, thus, shows the influence language proficiency exerts on various subscales of MALQ. Problem solving, mental translation, directed attention, and person knowledge seems to be constrained by language proficiency, while planning and evaluation are not constrained by language proficiency and can be learned

and used successfully by students of different proficient levels. These would therefore be good strategies to teach learners and build up their confidence and motivation from there gradually.

Effectiveness of the metacognitive approach when language proficiency exerts negative effect the metacognitive approach

As indicated in the answer to the first research question, language proficiency appeared to have constrained metacognition for L2 listening. In this case, will the metacognitive approach still be effective and worth promoting? To examine the effect of the metacognitive approach on the improvement of students' listening performance, we first conducted an independent-samples *t*-test to see if there is any difference between the experiment and control group in the pre-test. Results showed no significant difference regarding the listening performance between the two groups, $t(83) = -.43$, $p = .67$. Next, an independent-samples *t*-test was conducted to examine if there was any difference in the post-test score between the experiment ($M = 17.20$, $SD = 3.91$) and the control group ($M = 15.65$, $SD = 3.12$) after the intervention. Results indicated that the students from the experimental group performed significantly better than those from the control group, $t(83) = 2.02$, $p < .05$, which showed that the metacognitive approach was effective in improving students' listening performance.

This means that even when the participants had a lower-level of language proficiency, and this lower-level of language proficiency did exert a negative effect on metacognition, the metacognitive approach was still effective in improving participants' listening performance. The qualitative data provided some explanations.

Classroom observations of the experimental group showed that the higher-level students were more active than the lower-level ones. More proficient students adopted various strategies, such as using grammar knowledge to help with understanding. Besides, they discussed with each other enthusiastically and spoke highly of the discussion part, *'The prompt discussion helps me realize my mistakes in listening, and also impresses me deeply upon the incomprehensible part.'* What is interesting is that the focus of their discussion is on word recognition. It seems that for more proficient students, their major problem in listening is still about word recognition.

For lower-level groups, students could only note down just a few unconnected words, and they rarely discussed with each other. In the interview, they reported, *'Neither of us understands much of the listening material, so we do not have much to discuss.'* In another group which consisted of more proficient students and less proficient students, the less proficient student just copied the answers from the more proficient student, and they barely

discussed with each other either. In the interview, one less proficient student reported that *'I just copied the answer from him, and I felt it might be better if I could come to understand the listening material through repeated listening on my own.'*

The following are excerpts of their classroom discussion.

1. Group 1

- After listening for the first time:

Student A: The answer seems to be 'like be around other people.'

Student B: I suppose it is 'like be with around other people.'

Student A changed the answer to 'like be with around other people.'

- After listening for the second time:

Student A: (crossed out 'with') we don't have 'with' here.

Student B: You are right. By the way, the grammar seems to be incorrect here. Can we directly put 'be' after 'like'?

Student A: You made a good point. It seems it should be either 'like to be' or 'like being.' Let's pay attention to it when we listen again.

- After listening for the third time:

Student A: it is 'like to be around other people.'

Student B: Right.

(They got the right answer at last.)

2. Group 2

- After listening for the first time:

Student C: What is the word you put in this blank? (The book reads 'that's ___ rude in Japan.)

Student D: 'sexually'

Student C: 'sexually'? The word I heard doesn't sound like it.

Student D: Does the previous exercises talk about this?

(They read the previous exercises of this listening comprehension)

Student C & D: No, they don't.

- After listening for the second time:

Student C: 'selection'?

Student D: No, if it is 'selection,' then the meaning of the sentence is incorrect. Is it 'section'?

Student C: No, not correct.

- After listening for the third time:

Student C: I still think it should be ‘sexually.’ The whole sentence will be ‘that’s sexually rude in Japan’ which makes sense.

Student D: Ok, then ‘sexually’ it is.

• Final verification: teacher gave the answer and explained.

Teacher: The answer is ‘actually.’ It is directly followed by the word ‘that’s,’ so the [s] at the end of ‘that’s’ is linked with [æ] which is at the beginning of ‘actually’. Therefore, it sounds like [sæktuəli]. This pronunciation is indeed easily mistaken with the sound [sektuəli], but [æ] is different with [e]. Please follow the video and read them aloud to try to memorize them and distinguish them in future.

3. Group 3

Student E: I only got the word ‘biscuit’ here.

Student F: I didn’t get anything.

Student E & F: Hahahaha.

Surveys and interviews were conducted after the first session, the third session, and the fifth session (the end of the intervention), respectively. In terms of positive feedback, after the first session, students reported they had stronger motivation; they were learning strategies; they also did a large amount of practice in class. Then two weeks later, after the third session, they added they liked the teacher’s input besides the three advantages they mentioned earlier. After the fifth session, the previous merits of the intervention remained the same to them, and some also began to feel they could use strategies (see Table 4). Students also gave some negative comments regarding the instruction. After the first session, they reported they could not use strategies successfully. After the third session, the feeling continued, and they added they preferred practice to strategies learning. They also found affective strategies were inefficient. The negative feedback did not change until the end of the intervention (see Table 5).

The researchers tracked the trend of students’ perception through the whole intervention and gave some explanations regarding why the experimental group outperformed the control group despite the negative influence of participants’ low language proficiency. Table 4 and Table 5 present important comments from students.

Table 4 Positive comments

After first session	<p>1. Stronger motivation</p> <p>We need to tell our answers to partners in discussion, so I listen very carefully. Besides, I need to reflect on my own strength and weakness</p>
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in listening, so I feel like I am responsible for my own listening. So I am more active than before.

2. Learning strategies

It encourages me to reflect on my way of listening (my problems; my strength)

3. Large amount of practice

The listening training is intensive (Listen 3 times)

After
third
session

1. Stronger motivation

The class is relaxing, interesting and active.

2. Learning strategies

I start to discover ways that suit my learning needs, such as watching English movies with subtitles and reading foreign newspapers.

The class helps me reflect on my own problems and the way to solve the problems.

3. Large amount of practice

The teacher plays the listening material several times to let us have enough time to process the information. This helps me understand more listening material.

4. Teacher's input

I may not recognize the pronunciation of some words which I know. When the teacher guides us to listen to the words repeatedly, I finally recognize the words.

After
fifth
session

1. Stronger motivation

It encourages me to improve my listening competence and to avoid laziness.

2. Learning strategies

Listening strategies help me set my own goal in listening which involves identifying suitable listening material for me. Thus, I can practice on my own.

I am more concentrated in class.

3. Large amount of practice

By listening to the material several times, I can understand it. This builds my confidence and increases my fondness for English

listening.

4. The use of strategies

This is the first time I learn listening strategies systematically. Through learning them, I know the way to improve my listening. But it takes time and practice for them to take effect.

I probably use some strategies unconsciously.

I am very weak in listening competence; thus, I rely on listening strategies most of the time.

5. Teacher's input

When I don't understand some difficult part in the listening comprehension even after repeated listening, the teacher shows us the transcript and explains the speech features in a connected speech.

Table 5 Negative comments

After first session	<p>1. Being unable to use strategies</p> <p>I learned some strategies, but I am not able to use them well. I guess I still need to practice using them more.</p>
After third session	<p>1. Being unable to use strategies</p> <p>I pay my full attention to understanding the listening material and I do not have extra effort to use strategies such as inferencing. But I do use selective attention, I read the question on the book and pay close attention to the question related listening materials.</p> <p>2. Prefer practice to strategies learning</p> <p>I am poor in listening and I feel practice is more important to me than strategies.</p> <p>3. Inefficient affective strategies</p> <p>I need to have more confidence.</p> <p>I am nervous when I listen.</p>
After fifth session	<p>1. Being unable to use strategies</p> <p>It takes too much time to use these listening strategies during listening.</p> <p>2. Prefer practice to strategies learning</p> <p>I am wandering away in class because there are not enough effective</p>

tasks for me to do. The class goes to the wrong direction and thus lost its correct aim and attraction.

3. Inefficient affective strategies

I feel more and more nervous. I don't know the reason, but that is my real feeling. Maybe I can't focus my attention because I know more strategies now.

The following part will discuss the possible reasons behind these perspectives from students.

1. Students' responses after the first session

Most students reported that they have stronger motivations due to the more relaxing atmosphere of class and more active engagement in class. This approach introduced peer-to-peer discussion, which broke up the traditional teacher-centered teaching, and this made them relaxed in class. The reason is that teachers are considered to be authoritative and respectable in Chinese culture (Hu, 2010), and thus students are not likely to challenge them. But with their fellow students, they can communicate with each other equally and frankly. One student's response in the interview represents this point: *'In the traditional class, we mainly speak to teachers, so I am more or less restrained from speaking freely. But now, we discuss with fellow students, so we can think freely and speak frankly.'*

This approach also allows students to be the master of their own study, which may lead to higher motivation. One student commented like this: *'We need to tell our answers to partners in discussion, so I listen very carefully. Besides, I need to reflect on my own strength and weakness in listening, so I feel like I am responsible for my own listening. So I am more active than before.'*

2. Students' responses after the third session

In the middle of the intervention, students started to discover ways of learning listening which suited their own interest and language proficiency (e.g., *watch English movies with English subtitles*).

Nevertheless, students still reported they could not use strategies. According to the questionnaires about perceptions and follow-up interviews, there were mainly two reasons. First, it took training and practice before a strategy could be used autonomously. Second, the use of strategies was constrained by students' language proficiency. Students reported they were not able to divert attention to strategy use during real-time listening because they were

busy decoding the input. In turn, this suggested that the English proficiency of the participants might be at a relatively low level. On the other hand, some strategies, such as prediction or planning, did not demand real-time processing and could be used successfully.

The follow-up interview suggested that participants considered doing practice to be the most effective way of learning and rejected strategy learning, which they thought to be '*a waste of time.*' This might relate to students' previous learning experience in listening, which was basically a product-based approach. One student commented: '*Practice is what I did to improve my listening in my entire middle school and high school.*' Besides, the frustration of applying some strategies may influence their opinion on the instruction negatively.

Lastly, students reported ineffectiveness in learning strategies about managing emotion. It seems that affective strategies are easy to learn but hard to apply. These perceptions suggest that embracing a metacognitive approach by some students used to traditional forms of listening practice would take time. Other Chinese EFL students also had reservations but gradually became open as they experienced more success (Liu & Goh, 2006).

3. Students' responses after the fifth session

Some students used strategies consciously or unconsciously (i.e., *I probably use some strategies unconsciously. I am very weak in listening competence; thus, I rely on listening strategies most of the time.*). However, many still reported that they needed more time and practice to acquire these strategies (i.e., *But it takes time and practice for them to take effect*). But they saw the potential benefits of strategies (i.e., *This is the first time I learn listening strategies systematically. Through learning them, I know the way to improve my listening.*).

Finally, students also expressed positive comments on sufficient practice and teachers' scaffolding. When students lack sufficient exposure to authentic English input from media, it is especially useful to them to have sufficient practice in class and explicit scaffolding regarding task knowledge (Ellis, 2002), such as 'recognizing how speech features can affect sound-word recognition' and 'problems with word recognition and inadequate vocabulary' (Goh, 2018, p. 5). This resonates with the classroom observation data, which suggested that participants' major problem was regarding word recognition. In terms of the affective strategies, some students reported they were more nervous than before (i.e., *maybe I can't focus my attention because I know more strategies now.*).

In sum, the majority of students enjoyed and benefited from these process-oriented listening lessons that included discussion and embedded strategies instruction as well as knowledge scaffolding in listening practice (Goh, 2018), and the metacognitive approach

strongly motivated the students to engage actively with their listening tasks. These results might explain to some degree why participants still outperformed the control group significantly despite their low language proficiency level. The major problem was that students were not able to use some strategies. This could be due to their relatively low language proficiency level inhibiting their comprehension. A more likely reason is the short duration of the instruction and a lack of sustained opportunities to engage with listening tasks and hone their strategy use. Nevertheless, the use of a metacognitive approach that focused on the process rather than the outcome of listening indicated that it was beginning to have an impact on the students' learning and comprehension.

Conclusions and Implications

The metacognitive approach gives teachers a frame of reference for guiding students to self-appraise and self-manage their listening, enabling them to know what and how to learn through observation, critique, and analysis (Goh, 2018). It showed positive results on students of different profiles (Rahimirad & Zare-ee, 2015; Vandergrift & Tafaghodtari, 2010; Zarrabi, 2016). In this study, the participants were EFL non-English majors in the less-developed western part of China who had limited language proficiency. For these students, the major problem they confronted in the experiment was the unsuccessful use of some real-time strategies when they were busy engaging in decoding and meaning-building. Although their language proficiency appeared to have a constraint on their engagement through metacognition, the results of this study still show that the metacognitive approach strongly motivated students and enhanced their listening ability significantly. The qualitative data suggest that this is due to the fact that metacognitive instruction is a process-based and holistic approach in L2 listening. Besides, the benefits of such an approach are obvious in building learners' understanding of listening. This can have a positive influence on their long-term listening development. Therefore, in EFL contexts, teachers should take note of the constraint of language proficiency, but it should not be seen as a reason for rejecting metacognitive instruction.

In implementing this instruction, teachers should point out to students that they might not be able to use some real-time strategies for now, but they should not be unduly worried. With consistent use of different metacognitive tasks and teacher explanations, students have been known to develop realistic expectations of how L2 listening takes time, and it is best approached in a holistic manner (Liu & Goh 2006). Task knowledge (recognizing how speech

features can affect sound-word recognition) and strategy knowledge (prediction) are especially useful for such students, and teachers should attach importance to helping students enrich their knowledge bases through scaffolding listening activities and engaging students in process-based discussion. This study also shows that it is not difficult to elicit and develop person knowledge about listening problems, but it may not always be easy for students to apply.

One of the ongoing challenges in terms of conducting research involving language proficiency concerns how this construct is operationalized. When different researchers describe the level of English proficiency, they might have different standards and criteria in mind. Therefore, it might be better that future experiments use tests with coherent international standards to evaluate language proficiency. Further, the experimental group took the language proficiency test, pre-test and post-test, MALQ, interviews, and questionnaires outside classroom time. This extra time investment may have some small but positive influence on the engagement by the experimental group. In carrying out this study, we developed a Chinese translation for the MALQ through a rigorous approach. It is hoped that other researchers will find this instrument useful when studying L2 learners whose first language is Chinese.

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