

Thai EFL Listeners' Use of Metacognitive and Cognitive Strategies

การใช้กลยุทธ์อภิปัญญาและพุทธิปัญญาในการฟังของผู้เรียน
ชาวไทยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ

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Abstract

The aims of this study were to investigate the listening strategy use of listeners with different proficiency levels and how they employed listening strategies. Thirty students participated in the study; 16 were categorized as high proficiency listeners (HPLs) and 14 as low proficiency listeners (LPLs). To collect data, the participants were required to individually listen to an aural input, complete the listening task, and participated in immediate stimulated recall to report how they completed the task. The data were transcribed verbatim and analyzed based on Anderson's three-phase model (1995) and

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Vandergrift's taxonomy (2007). Findings illustrated that both groups employed metacognitive and cognitive listening strategies. However, HPLs possessed a wider listening strategy repertoire than their counterparts. They employed seven strategies comprising four metacognitive (advanced organization, selective attention, self-management, and comprehension monitoring) and three cognitive strategies (linguistic inference, world elaboration and repetition), while LPLs used four strategies i.e., one metacognitive (selective attention), and three cognitive strategies (linguistic inference, world elaboration, and repetition). In addition, HPLs depended on different strategies orchestration whereas LPLs relied heavily on repetition in orchestration with other strategies (i.e., selective attention, and elaboration). It is suggested that teachers should incorporate embedded metacognitive instruction in their listening class to enhance low proficiency listeners' ability.

Keywords: L2 listening comprehension strategies,
L2 proficiency, orchestrated strategies,
embedded metacognitive instruction

บทคัดย่อ

งานวิจัยนี้ศึกษาพฤติกรรมการใช้กลยุทธ์การฟังภาษาอังกฤษของผู้ฟังที่มีระดับความสามารถทางภาษาสูงและต่ำ กลุ่มตัวอย่างคือนักศึกษาที่มีความสามารถในการฟังสูง 16 คน และต่ำ 14 คน เก็บข้อมูลโดยให้ผู้ฟังฟังบทฟัง ทำชิ้นงาน และระลึกข้อมูลย้อนหลังทันทีเพื่อสะท้อนกลยุทธ์ที่ใช้ วิเคราะห์ข้อมูลที่ถอดความคำต่อคำโดยใช้กรอบแนวคิดของ Anderson (1995) และ Vandergrift (2007) ผลการวิจัยพบว่า ผู้ฟังทั้งสองกลุ่มใช้ทั้งกลยุทธ์อุปนิสัยและพุทธิปัญญา ผู้มีความสามารถสูงมีคลังกลยุทธ์การฟัง

กว้างกว่าผู้ฟังที่มีความสามารถต่ำและใช้ 7 กลยุทธ์ คือ กลยุทธ์อธิปไตย 4 กลยุทธ์ (การจัดการชั้นสูง การเลือกฟังเฉพาะส่วน การจัดการตนเอง และการตรวจสอบความเข้าใจ) และกลยุทธ์พุทธิปัญญา 3 กลยุทธ์ (การอนุมานจากคำศัพท์ การใช้ความรู้เดิม และการฟังซ้ำ) ผู้ที่มีความสามารถต่ำใช้ 4 กลยุทธ์ คือ กลยุทธ์อธิปไตย (การเลือกฟังเฉพาะส่วน) และกลยุทธ์พุทธิปัญญา 3 กลยุทธ์ (การอนุมานจากคำศัพท์ การใช้ความรู้เดิม และการฟังซ้ำ) และพบอีกว่า ผู้ฟังที่มีความสามารถสูงใช้หลายกลยุทธ์พร้อม ๆ กัน ขณะที่ผู้ฟังที่มีความสามารถต่ำมักใช้กลยุทธ์การฟังซ้ำร่วมกับกลยุทธ์อื่น เช่น การเลือกฟังเฉพาะส่วน และการใช้ความรู้เดิม ข้อเสนอแนะของงานวิจัยนี้คือ ผู้สอนควรสอดแทรกกลยุทธ์อธิปไตยเพื่อเพิ่มพูนความสามารถในการฟังของผู้เรียนที่ต้องการพัฒนาความสามารถในการฟัง

คำสำคัญ : กลยุทธ์การฟังภาษาอังกฤษ ระดับความสามารถของนักศึกษา การรวบใช้กลยุทธ์การฟังภาษาอังกฤษ การปลูกฝังกลยุทธ์ การฟังภาษาอังกฤษ

Introduction

Listening is generally recognized as a fundamental skill yet difficult to learn. Maintained by Vandergrift (2007), listening involves a complicated process that listeners employ to understand spoken texts, they have to recognize supra-segmental features, as well as they should possess a certain degree of vocabulary and grammatical knowledge. They also have to employ non-linguistic knowledge which involved listeners drawing on background knowledge they already have to facilitate their listening (Furuya, 2019; Goh, 2002). After

receiving a message and holding it in their short-term memory, listeners must interpret both literal and intended meaning of the message using textual, background, or pragmatic knowledge before responding to the speakers or interlocutors (Rost, 2002).

The transient nature of spoken input makes listeners rapidly process both the previous and current sound stream in order to receive incoming information. For some listeners, such a process occurs smoothly, but for those with a poor language background, they may need a considerable amount of time and effort to decode the meaning of the incoming sound stream (Vandergrift & Goh, 2012). To listen effectively, listeners need to possess a large listening strategy repertoire to cope with the entire listening process (Vandergrift, 2007). From what they heard, listeners may employ inferencing and elaboration strategies to bridge the gap of their understating then they may recheck their interpretation with comprehension monitoring strategies.

According to Vandergrift (2007) and Graham (2003), language listeners with listening strategies can comprehend spoken input more effectively than those without. However, the choices of listening strategy use among L2 listeners are different across studies in different contexts. For instance, several correlation studies have found that high proficiency was positively correlated with metacognitive strategies i.e., selective attention, direct attention, advanced organization, elaboration, problem-solving, monitoring, mental translation avoidance, problem-identification, and evaluation (Goh & Hu, 2014; Liu, 2008), while low proficiency was positively correlated with cognitive strategy i.e., translation (Kök, 2017; Liu, 2008). In the same vein, studies on strategy use of listeners with different

proficiency levels have yielded similar results (Duy & Quan, 2021; Graham et al., 2010; Huang & Nisbet, 2019; Ngo, 2015). Moreover, social/affective strategy (lowering anxiety) was employed by intermediate proficiency listeners (Ngo, 2015). Interestingly, monitoring strategies which have been associated with high proficiency listeners (Duy & Quan, 2021; Goh & Hu, 2014; Graham et al., 2010) were widely employed by low proficiency listeners in the study of O'Bryan and Hegelheimer (2009).

Not only what listening strategies are used, but the manner in which those strategies were used has also been of listening strategy researchers' interest. Findings from two classic studies (Goh, 1998; Vandergrift, 2003) indicate similar strategies employed by high and low proficiency listeners. These two studies found that the listeners employed more cognitive strategies (inferencing, prediction, elaboration, fixation, contextualization and reconstruction) than metacognitive ones. Moreover, both Goh (1998) and Vandergrift (2003) found that the high proficiency listeners tended to orchestrate listening strategies which helps them to make sense of listening texts at a deeper level. For instance, listeners may use textual information together with their world knowledge to discover the intended meaning/intention implied in the texts rather than relying on certain words they have heard. This finding is also highlighted in more recent studies (Furuya, 2019; Graham et al., 2010; Ngo, 2015; O'Bryan & Hegelheimer, 2009). Also of equal importance, recent studies stressed the substantial concurrence use of repeated listening as a strategy (O'Bryan & Hegelheimer, 2009; Ngo, 2015) and elaboration (Furuya, 2019; Graham et al., 2010) with other strategies i.e., inferencing or monitoring strategies to facilitate L2 listeners' comprehension.

Turning to Thai context, a considerable number of research in listening strategy comprehension has been on what strategies listeners with different proficiency levels employed. The findings are in line with the studies mentioned above (Anuyahong, 2013; Khiewsood, 2016; Piamsia, 2005; Piamsai, 2014; Rukthong & Brunfaut, 2020; Sudsa-ard, 2019; Wattajarukiate et al., 2012). Only in a recent study carried out by Rukthong and Brunfaut (2020) examined how Thai listeners enrolling in UK universities employed strategies to comprehend listening texts. Due to the task complexity in terms of lexis, grammar, and content, the listeners perceived that certain listening inputs were difficult although they were designed to be at the same level of difficulty. Consequently, they approached the texts with different processing strategies i.e., starting off with low-level processing (word and phrase recognition) when encountering difficult inputs and high level of processing (textual information, world knowledge, and identifying the speakers' intention) for less difficult ones. Even though previous studies compared listening strategies employed by high and low proficiency listeners, it is apparent that they relied on different instruments to measure the listeners' English ability. For instance, Piamsai (2014) divided the listeners into high and low proficiency based on their final English scores and grades while Wattajarukiat et al. (2012) used IELTS Practice Test scores (listening) to classify the listeners into high and low proficiency groups. Rukthong and Brunfaut (2020) judged the listeners' English ability from the listening-to-summarize task scores. Given that listener proficiency is based on different scales, it cannot be certain that high proficiency listeners in one study had the same proficiency as in other studies. Moreover, the listeners were required to perform different listening tasks. Piamsai (2005), for example, required the listeners to perform a university placement test whereas

the test takers in Rukthong and Brunfaut (2020) performed four listening-to-summarize tasks.

Conducted in a different educational context, this study adopted Anderson's (1995) three-phase model and Vandergrift's (2003) taxonomy to investigate what listening strategies Thai university students employed to perform a listening task and in what manners. A better understanding of listening comprehension strategies use and how they are used quantitatively and qualitatively by high and low proficiency listeners in fundamental English courses would provide some valuable insights to English teachers to appropriately incorporate listening strategies in their listening instruction routine.

Objectives

The study aimed to investigate what listening comprehension strategies high and low proficiency listeners used while completing a listening task and in what manners they were used.

Conceptual Framework

Two notions underlying this study were Anderson's (1995) three-phase model and Vandergrift's (2003) listening strategy taxonomy. The cognitive processing model proposed by Anderson (1995) has been highly recognized as a model that explains how language comprehension is processed. It consists of three phases: perception, parsing, and utilization. For comprehension to take place, the three phases must occur interactively and recursively. Perception is the phase when listeners encode acoustic signals involving segmenting phonemes from continuous sound streams and momentarily retaining them in their echoic memory. They apply syntactic structures of sound segmentation to construct meaningful

lexical units from combined sounds (Joyce, 2019). During parsing, listeners make an effort to form mental representation from original word chunks using their syntactic knowledge (prosodic features). They need to parse effectively so that in utilization phase they can generate mental representation from word chunks stored in their short-term memory together with interrelated existing knowledge stored in their long-term memory. Drawing different types of inferences is essential at utilization level for listeners to arrive at meaningful, accurate comprehension.

While listening to aural stimuli, listeners need to possess a vast array of strategies to facilitate and enhance their understanding. Defined by Oxford (1990) and O'Malley and Chamot (1990), strategies generally refer to mental activities and steps or techniques individual learners use to assist them to achieve learning goals. Vandergrift (2003) developed his listening strategies taxonomy based on those proposed by O'Malley and Chamot (1990). Similar to O'Malley and Chamot's (1990), his taxonomy consists of two main types: metacognitive and cognitive strategies. Socio/affective strategies were disregarded due to the differences in strategy use. The study of O'Malley and Chamot (1990) is used for learners to reflect their strategy use in L2 learning, while that of Vandergrift (2003) is used for eliciting listeners' strategies when handling listening tasks.

According to O'Malley and Chamot (1990), **cognitive strategy** refers to a direct process towards incoming messages to increase comprehension. It is a practical language tool that learners use to comprehend messages such as inferencing, summarizing, and elaboration. **Metacognitive strategy** goes beyond cognitive strategies as it no longer operates directly on language but assists learners to coordinate their language learning process. It is an executive or management tactic that learners use to plan, monitor and evaluate texts

for comprehension, for instance, paying attention, planning before and while listening, and self-monitoring comprehension. Vandergrift (2003) proposed metacognitive strategies subsuming four strategies: planning, monitoring, evaluation, problem identification, and cognitive strategies containing seven strategies: inference, elaboration, imagery, summarization, translation, transfer, and repetition (see Vandergrift 2003 for details).

Research Methodology

1. Population and Samples

Three-hundred-and-twenty-one participants enrolling in fundamental English courses were randomly chosen from the population of 1,750. They were divided into HPLs and LPLs based on their O-NET scores. Those at the top 27% and bottom 27% were included in this study. Of these, 212 HPLs and 109 LPLs responded to a questionnaire with a listening prompt. The other 30 participants were randomly chosen to involve only in stimulated recall session investigating listening difficulties and strategies. They were divided into 16 high proficiency listeners (HPLs) and 14 low proficiency listeners (LPLs). Only data concerning strategies was reported in this paper.

2. Research Instruments and Data Collection

Two types of instruments were used: listening comprehension task, and immediate stimulated recalls.

2.1 Listening Comprehension Task

A gap-filling task was used to measure the participants' listening comprehension performance as illustrated in Table 1. They were required to listen to a spoken input to fill in thirteen

gaps: seven gaps focused on specific details (items 2.1-2.3, 2.6-2.9) and the remaining six gaps (items 1, 2.4, 2.5.1-2.1.2, 2.10.1-2.10.2) on drawing inferences. The input was about “How to get healthy”. It was taken from *Speakout 2* (Clare and Wilson, 2015), a commercial course book. From the input, the participants would hear a female health expert talk about how one can be healthy and later provided a case of an unhealthy 60-year-old man (Martin) and how he can improve his health. The passage was a monologue containing 173 words. It was 1.09-minute-long, a speech rate considered appropriate for non-native listeners (Zhao, 1997).

Table 1

List of Local and Global Questions in the Task Sheet

Question Types	Questions												
Local questions	2.1. If we want to be in good health, we should eat the right _____ . 2.2. We should _____. 2.3. It’s good to _____ seven to eight hours a night. 2.6. This person needs to _____ his lifestyle because of his back problem. 2.7. He should walk or _____. 2.8. He also needs to _____ the time to watch TV. 2.9. If he meets friend, loses weight, eats meat _____ a day only, he will feel better.												
Global questions	1. Which person is the expert talking about? <table><tr><td>Mark, 44, a computer programmer ☐</td><td>Pauline, 22, a student ☐</td><td>Martin, 68, a bank manager ☐</td></tr><tr><td>Diet: eats junk food, no vegetables, 6 cups of coffee daily</td><td>Diet: eats fresh fruit and vegetables, no meat</td><td>Diet: eats meat twice a day</td></tr><tr><td>Fitness: no exercise, sleeps 8 hours</td><td>Fitness: sleeps 8 hours a night/ does yoga</td><td>Fitness: backache, no exercise, sleeps 8 hours</td></tr><tr><td>Social life: hang out with friends 3 nights a week</td><td>Social life: has a few friends</td><td>Social life: watch TV 6 hours a day</td></tr></table> 2.4. _____ is also important for us. 2.5. Seeing many (2.5.1) _____ and having good (2.5.2) _____ with many people will help us feel good. 2.10. So, we can say that the right (2.10.1) _____ and (2.10.1) _____ make us strong.	Mark , 44, a computer programmer ☐	Pauline , 22, a student ☐	Martin , 68, a bank manager ☐	Diet: eats junk food, no vegetables, 6 cups of coffee daily	Diet: eats fresh fruit and vegetables, no meat	Diet: eats meat twice a day	Fitness: no exercise, sleeps 8 hours	Fitness: sleeps 8 hours a night/ does yoga	Fitness: backache, no exercise, sleeps 8 hours	Social life: hang out with friends 3 nights a week	Social life: has a few friends	Social life: watch TV 6 hours a day
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2.2 Immediate Stimulated Recalls

Immediate stimulated recalls were employed to collect the participants' thought processes after they completed the listening task. The researcher met participants individually at their convenience. After being informed about the steps they had to follow, the participants signed the consent form to be video-recorded by a researcher while completing the task. The participants had full control over their listening; they could pause or replay the audio. The researcher took notes while observing them. The video clip was presented to individual participants to elicit how they processed the spoken input; for example, "*How do you understand the listening passage?*" or "*What's on your mind while listening to this particular part?*". Each session lasted approximately 30-45 minutes and was video-recorded to produce verbatim transcription.

3. Data Analysis

Data specifically dealt with strategy use from stimulated recalls that had been transcribed verbatim and analyzed based on Anderson's three-phase model and Vandergrift's taxonomy (Vandergrift, 2003). To establish intercoder reliability, three raters (two researchers and an invited rater who was familiar with analyzing verbal data) coded 25% of the transcriptions (7 out of 30) independently after reviewing them several times. This coding process yielded an intercoder reliability percentage of 78%. Through discussion and re-analysis, disagreements over the 22% were resolved. Subsequently, only two researchers coded the remaining 23 transcriptions independently. This yielded the increase in the intercoder reliability percentage to 85%. Major disagreements over the remaining 15% were on cognitive

strategies, particularly on linguistic inferences. The researchers came to the final agreement through discussions.

Findings

The following section reports listening comprehension task scores obtained by HPLs and LPLs. Out of 13, HPLs received a mean score of 11.75 (S.D. = 1.00) which was nearly twice as high as that of their counterparts ($X = 6.28$, S. D. = 1.54). To ascertain whether the two groups possessed significantly different listening abilities, an independent samples Mann-Whiney U test was performed. The results confirmed the difference in their ability at the significance level of $P < 0.05$. Regarding the types of questions and the percentage of correct answers the participants obtained, HPLs' scores account for 87.5% of correct answers for global questions while their counterparts received only 17.86% which is nearly four times less than the HPL scores. For local questions, HPLs had almost all the answers correct, (92.86%) whereas their counterparts had only about half correct (54.15%). A closer look at individual items in Table 1 can provide a clearer picture of how these two groups handled the task.

Table 2 provides correct answers of individual items. For global comprehension, HPLs gained perfect scores (100%) for item 2.10.1 but struggled with item 2.4 (62.5%). In contrast, LPLs had difficulties with most items except items 1 and 2.5.1. For local comprehension, HPLs performed well, except item 2.8 (68.8%). By comparison, LPLs did relatively well with items 2.1, 2.2, 2.3, and 2.7 except items 2.6, 2.8, and 2.9. Apparently, one at global level (2.4) and one at local level (2.8) were problematic to both groups, thus suggesting that the problem may lie in the task item. This will be explored further. Looking closely at Tables 2 and 3 on the strategies used by HPLs and LPLs can illuminate how the participants used the strategies to handle the task.

Table 2
Percentage of Correct Answers

Item s	Global						Local						
	1	2.4	2.5.1	2.5.2	2.10.	2.10.	2.1	2.2	2.3	2.6	2.7	2.8	2.9
No.	14	10	14	15	16	15	16	16	16	15	14	11	16
HPL s %	87.5 %	62.5 %	87.5 %	93.8 %	100% %	93.8 %	100% %	100% %	100 %	93.8 %	87.5 %	68.8 %	100% %
No.	8	3	9	5	6	4	13	11	14	0	11	0	4
LPL s %	57.1 %	21.4 %	64.3 %	35.7 %	42.9 %	28.6 %	92.9 %	78.6 %	100 %	0% %	78.6 %	0% %	28.6 %

Table 3

Numbers and Percentages of Participants Using Metacognitive Strategies

Metacognitive	HPLs (n=16)	Rank	LPLs (n=14)	Rank
Planning				
Advanced organization (AO)	16 (100%)	1	7 (50%)	2
Selective attention (SA)	14 (87.5%)	2	12 (85.71%)	1
Self-management (SM)	8 (50%)	4	7 (50%)	2
Direct attention (DA)	4 (25%)	6	2 (14.28%)	5
Monitoring				
Comprehension monitoring (CM)	13 (81.25%)	3	5 (35.71%)	3
Double-check monitoring (DM)	8 (50%)	4	3 (21.42%)	4
Evaluation (EV)	7 (43.75%)	5	5 (35.71%)	3
Problem identification (PI)	2 (12.5%)	7	5 (35.71%)	3

Table 3 reveals that both groups employed a number of sub-metacognitive strategies. If we consider the strategies used by at least half of the participants, it can be seen that they differed in their strategy use i.e., HPLs used three sub-strategies under planning (AO, DA, and SA), and two sub-strategies under monitoring (CM and DM) while their counterparts employed only three sub-strategies under planning (SA, AO and SM).

Table 4

Numbers and Percentages of Participants Using Cognitive Strategies

Cognitive	HPLs (n=16)	Rank	LPLs (n=14)	Rank
Inference				
Linguistic inference (LI)	16 (100%)	1	8 (57.14%)	3
Between-parts inferencing (BI)	6 (37.5%)	5	3 (21.42%)	6
Voice inferencing (VI)	1 (6.25%)	8	-	
Elaboration				
World elaboration (WE)	8 (50%)	3	9 (64.28%)	2
Questioning elaboration (QE)	3 (18.75%)	6	6 (42.85%)	5

Cognitive	HPLs (n=16)	Rank	LPLs (n=14)	Rank
Personal elaboration (PE)	2 (12.5%)	7	1 (7.14%)	7
Repetition (RP)	13 (81.25%)	2	12 (85.71%)	1
Memory (MM)	7 (43.75%)	4	1 (7.14%)	7
Imagery (IM)	3 (18.75%)	6	--	
Summarization (SU)	3 (18.75%)	6	1 (7.14%)	7
Translation (TR)	1 (6.25%)	8	7 (50.00%)	4

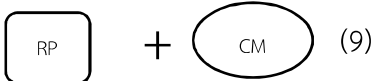
Table 4 shows the opposite results when compared to metacognitive strategy use in that HPLs employed fewer cognitive strategies than LPLs. While HPLs used LI (100%), RP (81.25%) and WE (50%), LPLs opted for RP (85.71%), WE (64.28%), LI (57.14%) and TR (50%). This shows that HPLs approached the task with inference using their linguistic knowledge, checked their understanding with repetition, and completed their partial understanding with world elaboration. In contrast, a large number of LPLs (85.71%) listened repetitively to facilitate their understanding, suggesting that they were unable to identify the words they heard.

The following figure demonstrates the orchestration of listening strategies. Only strategies employed by at least half of the participants will be taken into account.

Figure 1

Orchestration of Strategy Use by HPLs and LPLs

Purposes	Listening strategies orchestration	
	HPLs (n=16)	LPLs (n=14)
Planning	AO + SA (9) SM + RP (8)	SA + RP (11)
Making inferences	LI + RP (11)	LI + RP (7)
Seeking help from world knowledge	LI + WE (9)	LI + WE (8)

Purposes	Listening strategies orchestration	
	HPLs (n=16)	LPLs (n=14)
Monitoring		

 = metacognitive strategy
  = cognitive strategy
 + = use in combination with

Figure 1 reveals similarities and differences of strategies used by HPLs and LPLs in that HPLs employed more clusters than their counterparts. All the clusters employed can be categorized into four main stages: planning, making inferences, seeking help from world knowledge, and monitoring, each of which will be dealt with in turn.

1. Planning

HPLs used three sub-metacognitive strategies (AO, SA, and SM) and a cognitive strategy (RP) to handle the listening task at parsing and utilization levels. Nine HPLs reported they employed AO with SA to plan how to complete the task by going through the task questions to check familiar words (parsing) and to selectively highlight some words or phrases which they expected to hear in the aural input. They also thought about possible answers. Odd said,

“I read through (AO) and circled unknown words and chunks (SA). When I played the audio, I could pay close attention to it (AO).”

(Odd, personal communication, August 25, 2019)

Eight HPLs employed SM and RP when realizing that their initial plan failed. After failing the first attempt, one participant approached the task by relistening to the input, planning to catch

particular words. The participant said that if he failed again, he would get the general impression of the text.

Unlike HPLs, LPLs used SA with RP to handle the listening input but only at perception level. They used the two strategies in two occasions. First, eight of them planned by reading the instruction and glancing at the task items. Then, they listened to the aural input to match the incoming sounds with particular words they saw. If they could recognize them, they simply jumped to the conclusion that the words they heard were the right answers. To illustrate, Fang reported that

“I read the instruction and roughly look at the information here. Then I played the audio and looked for words that were mentioned in the input... like if the words were here, so I could pinpoint which one was the right answer”

(Fang, personal communication, August 23, 2019)

Second, SA and RP were employed by LPLs as a last resort when they completely failed to understand the input. Eleven LPLs decoded what they heard verbatim. After listening several times, one participant decided to put “citing” instead of “cycling” in the blank. If the participant had employed their world knowledge, they could have inferred from “walking” that the word they were looking for was “cycling” because they are types of exercise. In addition, “cycling” might be an unknown word due to their poor linguistic background.

2. Making Inferences

Eleven HPLs used two sub-cognitive strategies (LI and RP) to locate specific information, and draw inferences through replaying the audio, hoping to match the word they heard with the incoming sound. This is the stage where bottom-up processing was activated to parse lexical units. To illustrate, one participant tried to recognize the words that came before the word ‘important’. He then relistened for several times until he could recognize ‘happy relationship’. He said:

“She (the expert) said ‘having many friends’. And I thought ‘happy relationship’ could be the answer for this gap. So I put ‘happy relationship’ because they came before ‘important’”.

(Ming, personal communication, August 8, 2019)

At the utilization level, HPLs made inferences by using textual and linguistic information to interpret the meaning of the input. Fern reported that,

“It sounded like the man (Martin) had to cut down the amount of time to watch TV. I don’t think I heard ‘decrease’ (LI) when I replayed (RP). The sentence in item 2.7 was put differently, so, I went for ‘decrease’. It was my own word (LI).”

(Fern, personal communication, August 17, 2019)

Similarly, eight LPLs used LI and RP to recognize familiar words and to make inferences. However, with weaker linguistic knowledge, LPLs employed this combination of strategies only at parsing level. What they did was putting together words heard, but not realizing that they did not make any sense.

3. Seeking Help from World Knowledge

Both HPLs and LPLs employed two sub-cognitive strategies (LI and WE) to complete their partial understanding at parsing and utilization levels. However, HPLs used them much more effectively than their counterparts as they usually came at the correct conclusion when bridging the missing gap of information. To do so, nine HPLs relied on their world knowledge and the information heard from the input to correctly reconstruct the textual meaning from their large vocabulary repertoire. To illustrate, one HPL participant correctly inferred the three words (having a backache, walking, cycling) based on his world knowledge to arrive at the correct answer (Martin) because an elderly person is generally more susceptible to having a backache and should do activities that do not require too much physical strength. Ice said that:

*“For activities, I think...Walking and cycling (**parsing**)... other physical activities are not good for the elderly. She (the expert) mentioned his backache. Generally, young people should not suffer that much (**Utilization**). To me, Martin must have been old enough to have a back problem (**Utilization**).”*

(Ice, personal communication, August 20, 2019)

Seven LPLs, in contrast, made a wild guess of the textual meaning based on a few known words they saw in the task items, believing that the input was about being healthy. To illustrate, Dan drew on his world knowledge from few words heard (i.e., exercise, cycling, eating meat, meeting friends, lifestyle) to make a wild guess. To him, those words reflected

healthy lifestyle for people in general. In fact, the input focused on how Martin should change himself for healthier lifestyle. His guess was beyond the actual text, as seen the excerpt below.

“I heard from the passage that there were ways for exercising (LI)... I think that in general we have different ways to exercise (WE) like running, and cycling. And it said that we had to eat meat, and needed to spend time with other people in order to be happy (LI). I think we have our own way to socialize with people...something like that (WE)”

(Dan, personal communication, August 20, 2019)

4. Monitoring

To verify their listening comprehension, HPLs used a sub-cognitive (RP) with a sub-metacognitive strategy (CM). Nine HPLs used these two strategies to confirm whether their prediction (utilization) on each item was correct and to identify words they were unsure of through replaying the audio several times. It is reported by Jan that:

*“In items 2.4 and 2.5, like... I felt I had the answer. But... they sounded like they were about lifestyle (**utilization**) but I wasn’t sure. So I thought that the answer was either relationship or lifestyle (**parsing**). Because I wasn’t sure, so I listened to this part again and again.”*

(Jan, personal communication, August 24, 2019)

Discussion

This study investigated what strategies L2 listeners with different proficiency levels used and how they employed the strategies while listening. Our findings reveal that HPLs employed more metacognitive and cognitive strategies in combination with a higher degree of success at all levels of cognitive processing than their counterparts. This result is in line with other studies (Goh, 1998; Ngo, 2015; Rukthong & Brunfaut, 2020; Vandergrift, 2003), suggesting that a combination of strategies is essential for listening comprehension. Without effective application of cognitive processing, listeners may not fully comprehend the input (Furuya, 2019; Goh 2000; Kök, 2017; Vandergrift, 2007; White, 2008).

A wider use of metacognitive than cognitive strategies among high proficiency listeners in this study agrees with the findings of Graham (2007), Graham et al. (2010), Kök (2017), Ngo (2015), Piamsai (2014), and Vandergrift and Goh (2012). The higher the proficiency, the higher use of metacognitive strategies they used. According to Graham et al. (2010), O'Malley and Chamot (1990), and Vandergrift and Goh (2012), the awareness of metacognition can assist listeners to effectively handle the task at hand by combining linguistic and non-linguistic knowledge to select suitable strategies. In this study, most HPLs could use a monitoring strategy to verify their interpretation because they could at least recognize sufficient information from the input. In contrast, LPLs used fewer metacognitive strategies because they often struggled, even at parsing.

Regarding cognitive strategies, both groups employed linguistic inference, elaboration, and repetition to enhance their understanding. The effective use of linguistic inference and elaboration among HPLs is in line with the work of Graham et al.

(2010) and Vandergrift (2003) due to the fact that HPLs possess sufficient lexical knowledge to perform the task. Bonk (2000) and Stæhr (2009) posited that listening comprehension can be achieved only if lexical familiarity is approximately 75 % of the lexical coverage, which eases an effective interaction between bottom-up and top-down processing. In addition, listeners with sufficient lexical knowledge will not overextend background knowledge, which results in wrong interpretation (Long, 1990). Limited by their linguistic knowledge, LPLs tended to reconstruct the information with a few words they heard. A small vocabulary repertoire left them no choice but to overextend information from familiar words (Graham et al., 2010). Goh (1998) and Graham (2003) maintained that the low proficiency listeners had difficulties to parse the sound streams and segment in the aural input they heard. Moreover, they, with superficial understanding, had difficulties making correct inferences.

The frequent use of RP in this study played a significant role in their comprehension. Chang and Read (2006), Cohen and Wang (2018), and O'Bryan and Hegelhiemer (2009) maintained that listening repeatedly allows students sufficient time to use their existing linguistic and non-linguistic knowledge to make sense of aural input. In this study, RP was helpful for decoding words and locating where they appeared in the listening text. However, only HPLs could successfully infer the meaning of the text through the use of RP and LI or RP and WE while LPLs could not. Ngo (2015) also found that RP is one strategy employed extensively by the students.

As shown in the findings, item 2.8 was problematic to most participants; this might have been attributed to a combination of the nature of the task item and proficiency level. Although this

item was designed to check local comprehension ability, it was more complicated than other items requiring a straightforward answer because it required listeners to paraphrase a specific chunk of information into only one specific word. To do so, they should have a relatively large vocabulary repertoire. Another possible explanation could be that the participants might have faced a cognitive overload problem due to listening to a continuous speech. As a result, they failed to recognize the incoming sound stream as well as segment even familiar words into meaningful units. This is in agreement with the findings of Goh (2002) and Joyce (2019). Posited by O'Bryan and Hegelheimer (2009) that only listeners with high proficiency can successfully connect pieces of information.

Conclusion and Implications

To conclude, the findings of this study have offered insights into the listening comprehension process and strategy use that can distinguish high proficiency listeners from low proficiency ones. The high proficiency listeners possessed a wider listening strategy repertoire than their counterparts. The strategies they employed included AO, SA, SM, CM, LI, WE and RP. The strategies used by low proficiency listeners were SA, LI, WE and RP. In addition, high proficiency listeners orchestrated metacognitive and cognitive strategy use more frequently than their counterparts.

We are not yet confident to claim that our research findings can be generalized due to a few limitations related to listening materials. Text types could be one of them because this study had the participants listen to only one text type i.e., a monologue. The monologue used in this study was unscripted, making the listening

rather difficult. Also, monologue, by its very nature, tends to be more grammatically complex and less redundant, containing fewer pauses and fillers when compared to dialogue (Chang et al., 2013). Dialogue should also be covered to ascertain generalizability of future listening research because it contains elements such as prosody, assimilation, and speech delivery which are unfamiliar to non-native listeners, but they are linguistic foundations for effective listening (Graham et al., 2010). Another limitation involves task type: a gap-filling task is rather cognitively demanding; therefore, the results might be different if other task types are used.

Although stimulated recall is regarded as an instrument that can yield rich data, we, however, feel that it can offer richer data if researchers elicit information from the very first question of the task instead of selecting only obvious listening behaviors so as to obtain the whole listening process performed by the participants.

Insights gained from successful listeners can be used to train low proficiency listeners to listen effectively. Therefore, teachers can explicitly equip students with metacognitive strategies; for instance, planning and monitoring strategies throughout listening language programs (Kök, 2017; Rost, 2000) using embedded metacognitive instruction (Goh, 2008; Vandergrift, 2007) using embedded metacognitive instruction throughout listening language programs (Goh, 2008; Kök, 2017; Rost, 2000; Vandergrift, 2007). Vandergrift (2004) suggested 5 main stages of the listening instruction, as follows:

1. Planning and predicting: At this stage, teachers direct students' attention to the listening topic as well as its text type. Then, elicit possible words they might hear from the input.

2. First verification: Teachers help them check whether their initial guess was correct. Students are encouraged

to make more notes after listening. After that, they can compare their notes with peers and make changes, if needed. They can also discuss with peers for resolution or decide on the selected part that needs clarification or relistening.

3. Second verification: This is the stage in which students verify problematic points, making corrections, and noting down more information they have heard.

4. Final verification: This stage is performed as a whole class activity where students select problematic parts through listening for specific information.

5. Reflection: Learning from strategies employed to arrive at answers, students are required to evaluate strategies they have used in order to write goals for next listening class.

Most importantly, teachers are good role models to demonstrate how to employ listening comprehension strategies in an interactive manner. In addition, teachers should also expose listeners to text types/genres as each text type/genre contains specific linguistic elements. Once equipped, listeners can later be aware of strategies they can use immediately when listening.

All things considered, cognitive strategies cannot be ignored (Goh, 2008). Regarding cognitive strategy training, given that poor listeners usually have a small vocabulary size, teachers can make use of pictures/captions to pre-teach unknown keywords. At this stage, two cognitive strategies (linguistic inference and world elaboration) play a role in predicting the overall textual meaning. Sample guided questions are “Is the picture/caption related to what you will hear from the video? How?”.

Lastly, while listening or immediately after listening, teachers can encourage listeners to evaluate their strategy use

whether, and to what degree, it facilitates their listening comprehension so that they learn how to improve the strategy used for better understanding (Graham et. al 2010).

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