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The Impact of Instructions: Perceptions of Note-taking and Awareness of Metacognitive
Listening for ESL Students

By

Ayami Murakami

A Thesis Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

In

Teaching English as a Second Language (TESL)

Minnesota State University, Mankato

Mankato, Minnesota

May 2014

The Impact of Instructions: Perceptions of Note-taking and Awareness of Metacognitive
Listening for ESL Students

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This thesis has been examined and approved by the following members of the student's
committee.

Dr. Nancy Drescher, Advisor

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Acknowledgement

I would like to express the greatest gratitude to all individuals who supported my life at Minnesota State University, Mankato. First of all, to my academic advising committee, Dr. Nancy Drescher and Ms. Jessica Schomberg, for without who dedicated to the completion of this project with me would not have been possible.

I also would like to show the biggest love to my best friends, Nouri, Mehmet, and Mary. We were together in sunshine or in rain. I will never forget your support. Thanks to you, I have more confidence than before. I cannot express in words how very grateful I am. You formed what I am now. شكرا. Teşekkür ederim. Thank you. ありがとう.

Finally, my deep gratitude belongs to my family for supporting me all in my life. In particular, Mom, I appreciate to your big heart. I thank to the lessons about life, especially how to interact with people sincerely, made my days colorfully fruitful, just as my name means.

Abstract

The Impact of Instructions: Perceptions of Note-taking and Awareness of Metacognitive

Listening for ESL Students

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M.A. English: TESL

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2013

Taking effective notes while listening to a lecture is one of the important strategies for students in order to fulfill their academic goals. A number of empirical studies have been done to emphasize its importance; however, much fewer studies focusing on the impact of note-taking instruction have been done. Moreover, not only note-taking strategies but also high listening strategies are required to take notes while listening. The current study investigated the impact of instructions of note-taking and listening on ESL students. A total number of 23 upper-intermediate ESL students experienced training of taking notes and metacognitive listening over a semester. Their perceptual change of note-taking strategies and growth in awareness of metacognitive listening strategies were measured by questionnaires. The participants took a listening test and answered survey questionnaires both pre- and post-instructions, and they were instructed to take notes while listening. The results indicated that students perceived that instruction of note-taking strategy was more helpful than metacognitive listening strategy for them. As for note-taking, students gained deeper insights of importance and practicality of note-taking strategy. As for metacognitive awareness of listening, it was found that metacognitive

listening instruction enhanced the students to gain higher self-efficacy in L2 listening.

Furthermore, a strong correlation between higher perceptions and awareness of their strategy uses and more significant development of listening performance was found. In other words, students who increased perceptions in note-taking and who realized their metacognitive listening strategy uses outperformed than those did not.

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Chapter I: Introduction

Note-taking can occur frequently in our daily lives. Pialot, et al. (2005) defines note-taking as a collection of information retrieved from single or multiple sources to maintain memory and to help us carry out events and activities. Shopping lists, telephone messages and memos, plans for the future, and records from meetings are some examples. Note-taking also plays an important role in an academic life and is a key factor behind being a successful learner. In academic contexts, most students take notes in order to recall essential points for exams (Dunkel & Davy, 1989; Carrell et al, 2002).

A number of empirical studies have been done in order to shed light on the importance of note-taking practices in academic contexts to show the efficacy of note-taking in a second language (L2) while listening to academic lectures in class or completing listening tests such as TOEFL and IELTS (Carrell, et al., 2002; Carrell, 2007; Hayati & Jalifar, 2009; Song, 2011; Aminifard & Aminifard, 2012). By revealing the positive influence of note-taking practice in listening activities, many researchers believe that taking notes facilitates ELLs' (English Language Learners') study and academic life.

Given that most academic contexts require students to take notes in class, note-taking practice is one of the important skills for academic success. However, taking notes in an L2 is not an easy task. Students need to write and organize the format of their notes while simultaneously comprehending the lectures in classes. Consequently, they have to be good at multitasking. In other words, students need to acquire a range of listening strategies necessary to efficiently process academic lectures in class while simultaneously taking notes. From a theoretical perspective, Dunkel and Davy (1989) emphasize that possession of high listening

skill is essential to take notes in class while listening simultaneously. Therefore, a large number of researchers have investigated essential listening strategies in L2 such as cognitive listening strategies (Powers, 1986; Bonk, 2000; Tyler, 2001) and metacognitive listening strategies (Vandergrift 2004, 2007, 2010; Rost, 2005; Goh & Taib, 2006). They indicate that L2 listening strategies can directly help L2 comprehension, from which it can be inferred that effective listening strategy can aid multitasking in the form of taking notes while listening.

However, from a practical perspective, note-taking instruction is often ignored by researchers, and the majority of L2 learners rarely experience instruction in the skill of note-taking (Dunkel & Davy; 1989, Pialot, Barbier, & Roussey, 2008). Thus, little research has been done to indicate whether or not the attitudes of L2 learners change regarding the practicality of note-taking for enhancing listening if such instruction is received.

Therefore, the current study aims to address the gap between the theoretical and practical issues by investigating perceptions of ELLs toward note-taking as part of the listening process and the impact of interventional note-taking instruction. This study utilized a questionnaire to examine L2 learners' note-taking perceptions. Furthermore to reveal their stages of awareness about the listening process and strategy, the MALQ (Metacognitive Awareness of Listening Questionnaire) by Vandergrift, et al. (2006) was utilized. In order to ascertain both their note-taking and listening perceptions, TOEFL listening comprehension quizzes were also employed.

The research questions addressed in this study are as follows:

1. Is there any difference in terms of perceptions of note-taking activities during listening before and after experiencing note-taking training?
2. Is there any difference in terms of metacognitive awareness of listening before and after receiving listening instruction?

3. Did note-taking activities help participants complete listening comprehension quizzes?

Summary

This chapter attempted to clarify the problems behind the importance of note-taking practice and its instruction as well as the importance of possessing effective listening strategies to take notes while listening in L2. The second chapter provides a review of literature associated with note-taking and listening in English. As for note-taking, it gives a general overview of note-taking, effects of note-taking during a listening task in academic contexts, and note-taking strategies. As for listening, it focuses on the impact of L2 listening comprehension on note-taking and listening strategies, including both cognitive and metacognitive listening strategies. The third chapter provides the methodology employed in order to examine ESL students' perceptions on note-taking and metacognitive listening awareness. The fourth chapter provides the results of the data gained from the questionnaires about note-taking, the MALQ, and a listening test. It focuses on perceptions of note-taking, awareness of metacognitive listening strategy uses, listening performance, the relationship between listening performance and note-taking perceptions, and the relationship between listening performance and awareness of metacognitive listening. Finally the fifth chapter summarizes the current study, and also it provides limitations of the current study and implications for further research.

Chapter II: Literature Review

Note-taking activity may frequently occur in daily life as well as in academic contexts. Students take notes to retain their memory in preparation for exams (Dunkel and Davy, 1989; Carrell et al, 2002). Moreover, TOEFL (Test Of English as a Foreign Language) and IELTS (International English Language Testing System) call for note-taking activity to facilitate completing tasks.

Note-taking, however, has many kinds of methods in which information is organized in notes. The first and most traditional method is the outlining method. Center for Academic Achievement (2005) states the following:

This strategy involves placing the information which is most general at the left, with each more specific group of facts indented with spaces to the right. The relationships between the different parts are carried out through indenting. No numbers, letters, or Roman numerals are needed. Dash or indented outlining works best in classes other than physics or math. (p. 9)

It is very beneficial to see the relationships of information of the lecture structure. In addition to that, it saves time for reviewing and editing.

Another traditional method of taking notes is the Sentence Method. It has a very simple organization; it is to write down every new thought, fact, or topic on a separate line in short sentences (Student Academic Service, 2011). Although some students may be able to find its benefits since it records detail information, it requires high language proficiency, fast writing speed, and well-trained note-taking habits. Mostly it is widely used when to record a short text. Finally, the Cornell Method is another widely used note-taking technique. According to Hayati & Jalilifar (2009), it is developed by Pauk (1974) at Cornell University in New York in order to

facilitate student's note-taking skill as for the organization. It has three parts which functions are different. The first part on the left is for the most important ideas while the other half area is for key words and concepts, and finally a summary is recorded at the bottom page (Center for Academic Achievement, 2005). The example is provided below (see Figure 1). Since the format is aesthetically pleasing, it is easy to scan and quick to review important information.

The Near East		9/10/02
		p. 4
Jericho	Jericho	
3 req'ments for dev'ment of cities	<ul style="list-style-type: none"> • 1st city developed • before Jericho people were mobile 	
water	Three req'ments for dev'ment of cities:	
agriculture	1. Water	
protection	<ul style="list-style-type: none"> • cities built by lakes, rivers 	
	2. Agriculture	
	<ul style="list-style-type: none"> • division of labor: women planted; men hunted 	
	3. Protection	
	<ul style="list-style-type: none"> • walls of Jericho built to protect farms and water from invaders • walls built in 7800BC • city survived 800 years 	
Summary: Jericho is significant as first city. Requirements for development of cities are water, agriculture, protection.		

Figure 1: Cornell Method of Note-taking from Center for Academic Achievement (2005)

Particularly, note-taking itself is used as a help of test takers for increasing the scores on listening comprehension tasks since they can utilize their notes to answer listening questions (e.g. TOEFL and IELTS). In other words, it can be generalized that good note-taking ability

often helps attain a distinguished listening score. Consequently, ELLs need to learn how to take notes effectively, and note-taking instruction should be integrated with listening instruction in order to facilitate language learners' listening competence. Although taking notes has a variety of beneficial aspects for students and it is frequently used, its instruction tends to be ignored.

Efficacy of Note-taking

A number of empirical studies have been done to investigate the efficacy of note-taking activity in listening comprehension tests (e.g. Carrell, et al., 2002; Aminifard and Animifard, 2012; Hayati and Jalilifar, 2009). A study done by Carrell, et al. (2002) investigated the effects of note-taking, lecture length, and topic on listening comprehension. Two hundred thirty-four ESL students in the United States took a short-term memory test, the Institutional TOEFL listening comprehension test, the TOEFL CBT (Computer-Based-Test) listening comprehension test, and a debriefing questionnaire. The Institutional TOEFL listening comprehension test was employed to establish the participants' initial proficiency level. The TOEFL CBT listening test is comprised eight listening comprehension lectures with six to eight comprehension questions. As far as the length of the listening test, there were four short and four long lectures, and the topics were arts and humanities and physical science. All of the participants were instructed to take notes during one long and one short lecture; meanwhile, they were not allowed to take notes while listening to the other set of texts (one short and one long lecture). After completing the listening comprehension quizzes in relation to the content of the lectures, they were asked to fill out a questionnaire about their experience with note-taking which consisted of 22 questions (See Appendix B). The result first revealed that there was a positive effect on note-taking during a short lecture; when the participants were allowed to take notes during listening tests, they performed better than when they were not allowed to take notes. Second, it was found that

shorter length (about 2:30) generated more accurate scores than longer lectures (about 5:30) for students with higher levels of proficiency. Furthermore, the students with lower proficiency showed undeveloped readiness to take notes during listening regardless of the lecture length. The third finding was in relation to topic familiarity. Participants outperformed when they were allowed to take notes during listening to the art and humanities topics whereas there was no notable difference in the topic of the physical science. As a result, the best condition for high proficient students to take notes is when the listening materials are not too long and when the topics are familiar to them. In other words, careful selection of listening text is essential in order to optimize an ELL's note-taking performance.

Additionally, perceptions on note-taking from the participants were revealed. According to the results of the debriefing questionnaire, it appeared that participants showed positive attitudes on taking notes as well as they felt distraction and interference because of multi-taking (listening and writing) and difficulty to utilize their notes for answering questions somewhat. Statistic analysis shows that approximately 67% of the participants agreed that note-taking helped completing the listening test better than if they could not take notes, and 75% agreed that taking notes facilitated them to remember the lecture information. In contrast to their positive perception, 47% felt it was difficult to locate information needed to answer questions. In addition, no correlation between note-taking attitude and performance on listening comprehension test was found. Therefore, even though most of the participants found that note-taking was beneficial, their positive perception was not necessarily reflected on attaining high listening score.

Then, what contribute to marking a high listening score? Based on a study by Aminifard and Animifard (2012), it appears that developing an effective note-taking method is inevitable. It

appears that taking notes in appropriate and useful method can particularly help to review notes when completing listening comprehension tests. Aminifard and Animifard investigated the impact of note-taking strategy in the Sentence Method on listening comprehension of conversations and mini-lectures. The participants were 24 Iranian EFL (English as a Foreign Language) students whose proficiency level was high-beginner, and they were divided into two groups: the experimental group and the control group. Participants in the experimental group were instructed a note-taking method, the Sentence Method, for five weeks. They were also encouraged to use as many as abbreviations in their notes. On the other hand, the other group was not allowed to take notes. Both groups of participants took a listening test and questionnaire. The listening materials were consisted of two conversations and two mini-lectures, and the questionnaire was about perceptions of note-taking that was adapted from Carrell, et al. (2002). Their performances on listening test were analyzed; as a result, no significant difference was found in terms of a type of listening, conversation or mini-lecture, and whether note-taking was allowed or not. Furthermore, the result of the questionnaire revealed that students did not benefit from note-taking to complete the listening comprehension test. For instance, 75% of participants relied on their memory in order to answer questions, and they perceived that note-taking actually interfered with the listening comprehension process. Consequently, the participants did not find benefits from the Sentence Method as a note-taking strategy. Aminifard and Animifard conclude that this note-taking method was ineffective and not valuable to teach. Furthermore, it could have been difficult for the participants whose English proficiency was high-beginner to take notes as it was found in the study previously mentioned (Carrell, et al., 2002). This can be because of their capacity of multi-tasking as well as limited language proficiency. Moreover, the researchers imply the conversations and the mini-lectures were too short to require notes from the

participants, since they could fully utilize their short-term memory to answer the listening questions. Therefore, ELLs with limited language knowledge could not benefit from note-taking for answering listening comprehension items which contrast with the finding of Carrell, et al. (2002), especially taking notes in ineffective note-taking method during a short listening text.

Another note-taking method, the Cornell note-taking method, which is more widely accepted, appears more positive impact on listening comprehension performance. Hayati and Jalilifar (2009) investigated the impact of note-taking strategies on the EFL college students' listening comprehension achievement. The 60 participants in this study were randomly selected from a population of 110 undergraduate students who took an administration test. It was the stimulated TOEFL proficiency test which consisted of listening, vocabulary, and reading comprehension. Their English proficiency levels were approximately homogeneous on the pre-test, and they were divided into three groups of 20 participants: the non-note-takers group (NNTG), the uninstructed note-takers group (UNTG), and the Cornell note-takers group (CNTG). The NNTG was not allowed to take notes during the listening test while UNTG were encouraged to take notes with their own note-taking strategies. The CNTG were indirectly instructed about how to take notes in the Cornell note-taking method by being handed a pamphlet of the Cornell Method, and they studied how to take notes in the Cornell Method on their own for six weeks. They also took an achievement test to check their knowledge of how to take notes in the Cornell Method before the post-test. All the participants listened to the same sample TOEFL listening comprehension twice in the post-test. The listening text was roughly equivalent to the pre-test. After the listening comprehension test, they took a listening comprehension quiz in multiple-choices. The result showed that CNTG performed the best among the groups on the post-test. Therefore, the use of the Cornell Method as a note-taking

strategy could generate benefits in learning, and it appears that the Cornell note-taking method is more beneficial than the Sentence Method. However, the note-taking instruction was only indirectly and informally given in the study, and there was not attention given to the quality of notes taken by ELLs with difference proficiency levels.

Thus, developing effective note-taking method as a strategy is the key to maximize effects of note-taking to facilitate attaining high listening scores. As it is found from the two studies by Carrell, et al. (2002) and Aminifard and Animifard (2012), ELLs with higher language proficiency tend to benefit more from note-taking than ELLs with limited language proficiency for attaining a high score on listening comprehension exams. Although these researchers found that note-taking is difficult for lower proficient learners, a further research done by Song (2011) found types of note-taking patterns for higher proficient students and lower proficient students. She investigated 257 international students' notes in terms of the relationship between note-taking format and listening comprehension performance. A listening segment of the participants' placement test for a graduate program in ESL was used in her study. Participants were encouraged to take notes during the listening test and their notes were assessed based on the hierarchical scoring system (see Figure 2). The assessment system consisted of five levels of information of the listening text: Level 1 (main idea), Level 2 (major topical ideas), Level 3 (subtopic ideas), Level 4 (supporting details), and Level 5 (minor details). A part of the results showed that the lower the participants' L2 proficiency was, the less detailed their notes were likely to be. She emphasized that higher proficient students have better subskills to comprehend listening and record in notes in detail; for example, successful listeners tend to possess great knowledge of the topic, detail topical ideas, organization of notes, and ability to make inference. Also, they made connections between main ideas and their related supportive ideas effectively in

their notes. As a result, high proficient L2 listeners were able to generate high-quality notes which resulted in a good score on the listening test.

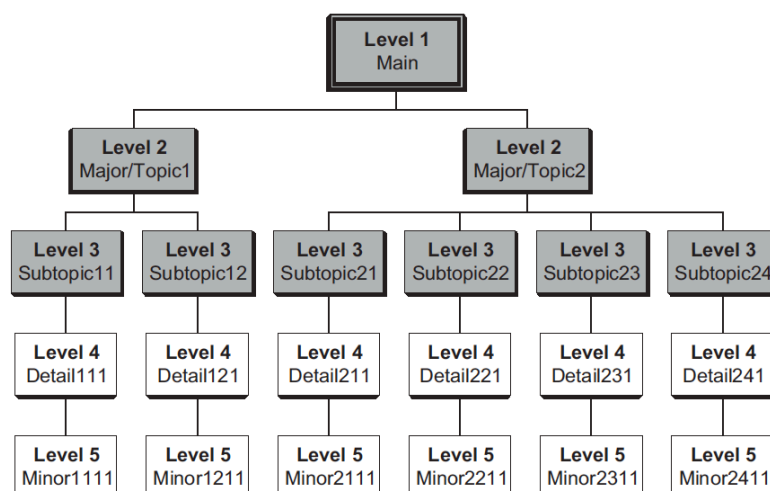


Figure 2: Hierarchical Scoring system from Song (2011), p.72

Based upon the results from the research results previously mentioned, the key of note-taking effect seems likely to depend on the method of note-taking and the learner's proficiency level. In particular, there seems a strong correlation between the learner's ability in L2 proficiency and capability of taking notes. The approximate average writing speed of a student is 0.3 to 0.4 words per second; however, a lecture speed is much faster, around 2 to 3 words per second (Pialot, 2005). Therefore, students must be trained to take notes effectively in a limited time such as during a lecture in class. In order to take notes in such a circumstance, they need to develop a variety of effective note-taking strategies.

Note-taking Strategy

A call for instruction of note-taking for NNSs (non-native speakers) was first clarified by Dunkel and Davy (1989) by conducting research to investigate differences between American and international students' perceptions of note-taking. In their research, 54 American and 110

international graduate and undergraduate students were given a questionnaire about perceptions of note-taking activity in class. The results bore out the fact that international students felt it was more difficult to take notes in class than American students did because of the lack of time to take notes during lectures and the deficit of good note-taking strategies. More than 70% of the international students perceived that they needed more time to take notes during a lecture while about 61% of American students felt that they had adequate time for note-taking during a lecture. Furthermore, over 90% of the international students felt that they wanted better strategies for note-taking. Thereby, this study revealed the importance of note-taking instructions for international students.

One of the effective note-taking strategy instructions is teaching practical organizational strategies. In other words, students need to develop note-taking strategies to organize their thoughts better to show relationships of main ideas and supportive ideas clearly and to review their notes later easily. Carrell (2007) examined ESL students' particular note-taking strategies during a computer-based listening comprehension test. In her study, 216 low intermediate to high proficient international students in matriculated ESL programs or IEPs (Intensive English Programs) at American universities took pre- and post-listening comprehension tests. After listening to conversations and lectures, they completed a listening comprehension test in multiple choices and took a survey about the note-taking strategies that they used. Half of the participants were randomly divided in to an intervention group, and they were taught note-taking strategies for 15-20 minutes. On the other hand, the other half group of people was the non-intervention group, and they experienced no note-taking instruction.

In the pre-test session, it was found that organizational devices such as diagrams, arrows, and lists were not frequently used whereas circles, boxes, and underlining were used to some

extent in their notes. As a result of intervention of note-taking instruction, in contrasted to her expectation, there was no significant effect of intervention found. However, in general, the participants utilized more content words, abbreviations, and symbols in their post-test notes in addition to circles, boxes, and underlining.

Next, the questionnaire revealed the participants' perceptions toward their note-taking strategies in terms of frequency and usefulness. They used content words (writing only content words for main ideas and important facts) the most frequently and felt it was the most helpful strategy. The next most frequently used and helpful strategy was the efficiency strategy (use of abbreviations, symbols, paraphrases, and omission of function words). The organizational strategies (use of diagram, numbers, lists, and highlighting) and general strategies (neat handwriting and writing down unconnected words) were perceived as least frequently used and least helpful. It seems that students took notes for the better understanding of the content of the lecture with the use of content words and the efficiency strategy. In addition, many of the answers of the listening comprehension questions were written in their notes in content words. Overall, 1) the number of content words, 2) number of abbreviations and symbols, 3) the number of answers of the listening questions, and 4) number of arrows are included in the notes.

In Carrell's study, the intervention group was explained general practical note-taking strategies in a short time. However, based on the results from both groups, the intervention group did not significantly use note-taking strategies. This could be resulted from having insufficient opportunity to train note-taking. Since students perceived that the most frequently used note-taking strategies were the most useful ones, they could have developed better note-taking strategy if they had more time to train. Therefore, practical training to develop better note-taking strategies is necessary. On the other hand, the results revealed an important aspect of note-taking

strategy in pedagogy: content words, symbols, and abbreviations. It is also found that students could utilize their notes the most effectively when they answered the listening comprehension questions in multiple choices. In conclusion, ELL teachers need to teach students to utilize content words, symbols, and abbreviations in notes and provide sufficient time and opportunities to practice taking notes.

Impact of L2 Listening Competence on Note-taking

Although it is essential for students to acquire effective note-taking and listening skills, note-taking instruction cannot independently occur. Thus, it should be taught in a listening class concurrently as Dunkel and Davy (1989) argue. They insist the relationship between students' L2 listening proficiency level and the quality of their notes in L2 are closely related, which means that a good listener in L2 is capable of taking better notes.

Given the research results of Carrell (2007) and Song (2011), it seems that recognizing main ideas and detail information are the key factors in order to comprehend the content of the lecture that is most likely difficult for ELLs. One feeling commonly experienced by second language listeners is an overwhelming impression of being drowned in fast speed of lectures (Pialot, 2005). This problem can be overcome by possessing high listening competence. According to Vandergrift (2004), "The speed and effectiveness at which listeners carry out these processes, however, depends on the degree to which the listener can efficiently process what is heard" (p. 4).

According to Brown (2007) and Bozorgian (2012) highlight the idea that listening competence is highly correlated with overall language ability. In other words, listening can be seen as the most important factor of all four language skills: reading, listening, speaking, and writing. However, listening is not an easy task for international students (Graham, 2008).

Graham (2006) tested second language learners' perceptions of listening. In this study, 595 French-learning secondary level students were asked to fill out a questionnaire and 28 of them were interviewed. The result from the questionnaire showed L2 learners' perceptions of difficulty in L2 listening was because of their limited ability of comprehension because of the speed of listening and lack of word recognition. It furthermore revealed that most of the participants felt that they needed to acquire effective listening strategies. Moreover, interviews revealed that students who perceived difficulty in listening were conscious because of their low listening ability in L2.

Clearly, it is essential for students to acquire effective listening strategy to comprehend listening. Students also need to understand that university lectures are not only to convey information but also to evaluate and critique the source materials. In short, students need to interpret and perceive the purpose of material usages in addition to comprehending the content of lectures particularly in academic contexts. In order to do so, acquiring a large repertoire of listening skills is required.

Teaching faculty also realize and emphasize the importance of listening in a classroom to being an active student and its difficulties for NNSs. Powers (1986) investigated the necessary subskills of listening in academic contexts. A survey was collected from 150 faculty members at 28 institutions in the U.S. attempted to shed light on perceptions toward various listening skills and activities in academic fields, the difficulties of listening for NNSs, and alternative evaluation activities for NNSs to make up for their limited listening skills. The results clarified that listening skills are the second most important elements for academic success following reading ability. Furthermore, Powers identified nine important listening subskills from the perceptions of faculty as following:

- 1) identifying major themes or ideas
- 2) identifying relationships among major ideas
- 3) identifying the topic of a lecture
- 4) retaining information through notetaking
- 5) retrieving information from notes
- 6) inferring relationships between information
- 7) comprehending key vocabulary
- 8) following the spoken mode of lectures
- 9) identifying supporting ideas and examples

As is seen, faculty expect students to use broken-down listening subskills and strategies to comprehend academic lectures. In addition, they encourage and anticipate students to use notes.

Listening Strategies

In addition to the subskills identified by Powers (1986), it is necessary for listeners to activate and take advantage of multiple techniques to listen effectively. A number of empirical studies have been done to investigate what, how, and when L2 learners use listening strategies effectively to interpret listening texts. Vandergrift (2007) investigated the contributions of L1 listening comprehension ability and L2 proficiency to L2 listening comprehension ability. There were 75 elementary level English-speaking French learners who participated in this research. They completed multiple-choice comprehension tests in both English and French after listening to authentic dialogues in both their native language, English and their second language, French. The results showed that both L1 listening ability and L2 proficiency were significant predictors of L2 listening comprehension ability; however, L2 proficiency is a better predictor than L1 listening ability. Moreover, it was found that students use their knowledge of L2 to answer literal

questions notably. In sum, the ELLs used their L1 ability to cover the deficit of their L2 ability especially when they faced literal questions. Therefore, he suggests vocabulary development instruction and strategy instruction in L2 can contribute to improvement of learners' L2 listening comprehension ability.

In a study by Graham (2005), L2 learners who perceived their own undeveloped listening comprehension level and utilization of ineffective listening strategies clearly called for listening strategy instruction. Vandergrift (2007) implies that strategy-based instruction can facilitate ELL listening efficacy. Although there are many strategies to help listening, it appears that cognitive listening strategies (top-down and bottom-up) and metacognitive listening strategies are the most effective.

Cognitive listening strategies. O'Bryan & Hegelheimer (2009) indicates that top-down listening process involves a listener's prior experience, background knowledge, and familiarity of the listening context (schemata connection). By activating specific schemata when they listen with global understanding, a listener can interpret a text better. This is called the top-down listening process. On the other hand, in order to understand an oral text by paying close attention to specific features of the target language such as sounds, grammatical functions, and lexical meanings are other ways to understand a listening text, which is defined as the bottom-up listening process. Furthermore, Celce-Murcia and Olshtain (2000) define top-down listening processes as follows:

1. interpreting discourse by reference to the high-level units first, then moving downward through the ranks below
2. the type of processing strategy for interpreting and producing discourse that makes use of contextual features and prior knowledge to process new information (p.242)

Likewise, they define bottom-up/data-driven process as:

1. interpreting the lowest-level units first, then processing to an interpretation of the rank above, and so on upward
2. a way of language processing that makes use principally of information on the linguistic features that are already present in the data (e.g., spelling patterns, word order, grammatical inflections, and word choices) (p.235)

Moreover, Peterson (2001) views the procedures of one's strategy acquisition is as described below:

... a view of some simultaneous, interactive operations which are hypothesized to constitute the successful comprehension *process*. These operations are made up of various subprocesses: chunking input into syllables, recognizing words, recalling relevant schemata, and matching key words to the semantic structure of the text. These subprocesses are the *skills* of the competent listener. If these skills are practiced enough, they become automatic and are activated much more quickly. When things are going well, the listener is not conscious of using process breaks down for some reason, the listener becomes aware of the need for repair and seeks and appropriate *strategy* for comprehension. (p.90)

Given top-down listening strategy, topic familiarity is one of the key factors to comprehend listening texts effectively. Tyler (2001) examined working memory use requirements for NSs (native speakers) and NNSs of English. In the study, 30 Australian native speakers of English and experienced 30 non-native university students were equally divided into a topic-informed group and a non-topic-informed group, and all of them were asked to do a concurrent task. They calculated simple numbers while listening to a short passage. Then, at the

end of the session, they were told to write down what they remembered from the listening passage as much as they could. The result showed a statistical difference between topic-informed and non-topic informed groups of NNSs; when a topic is not provided, NNSs showed difficulty in comprehension. Informing topics to aid students' comprehension, especially lower proficient students, can significantly aid in the process of language retention. Vandergrift (2004), however, illustrates when learners cannot negotiate meaning of a listening text by carrying out top-down listening processes, they ought to shift to utilize another listening process, the bottom-up listening process. Native language listeners do this shift automatically in order to interpret meaning from a text. In contrast, NNSs, and particularly less skilled non-native language listeners, experience difficulty due to limited language knowledge. Therefore, it is challenging for NNSs with limited L2 competence to process what they hear and process the information automatically.

In order to overcome this problem, developing bottom-up listening skill is prominent. Tyler (2001) emphasizes a call for bottom-up listening strategy instruction for ELLs. However, he suggests that developing bottom-up processes should work well for long-term mastery of a language such as phoneme discrimination training; meanwhile, top-down training can be more beneficial for learners who aim to acquire instant knowledge of a language such as travellers. Therefore, ELLs who aim to fulfill their academic goals need to train bottom-up listening process. However, Peterson (2001) highlights the fact that novice ELLs tend to possess undeveloped bottom-up listening strategy. Therefore, bottom-up listening strategies which require a great amount of conscious attention to language, should be taught in class to enhance ELLs' listening ability.

Bonk (2000) insists that whether or not ELLs comprehend listening texts effectively depends to a great extent upon their developed vocabulary system. He investigated the factor of a correlation between L2 lexical knowledge and L2 listening comprehension ability. This study involved 59 Japanese college level students whose TOEFL PBT (Paper-Based Test) scores ranged from 400-580, and they listened to four short passages in English. They were asked to write down the elements that they remembered from the passages as a recall protocol in either their L1 or L2 including main ideas and as much detail information as they could. Allowing them to take notes in their native language, Japanese, was to fill the gap between higher and lower L2 proficient students' representation of content knowledge. Next, they dictated the passages in English as it was read with pauses three times. Then, the amount of dictated words and comprehension level from the protocol were analyzed. The result showed that there was a statistically significant correlation between their lexical knowledge and listening comprehension ability. In other words, students do likely not achieve a high score on a listening comprehension exam in L2 with low L2 lexical ability.

Although building up a vocabulary system is important to foster bottom-up listening strategies, Wilson (2003) emphasizes the idea that bottom-up listening instruction is neglected and top-down listening instruction tends to be taught more in English educational contexts. In other words, English teachers often overlook the effects of bottom-up listening strategy instructions. Therefore, she reviews the efficacy of 'discovery listening' instruction which aims to have students notice their listening difficulty and its reasons by focusing on sounds and word recognition. She implemented three tasks: listening, reconstructing, and discovering. The first task, listening, enables students to assess their listening comprehension, and the second task, reconstruction, highlighted their listening problems. Lastly, the final task was to discover their

difficulty in listening and its reasons. Through this task-based ‘discovery listening’ instruction, students successfully noticed their listening problems (e.g. perceptual, grammatical, and contextual problems) to facilitate acquisition of listening skills in L2.

Nevertheless, Chang (2007) highlighted vocabulary preparation does not contribute to listening comprehension greatly. In this study, 117 college-level Taiwanese EFL students participated in order to investigate the efficacy of vocabulary preparation before taking a listening comprehension test. They were divided into three experimental groups and given different amounts of vocabulary preparation time. Group A had a week, Group B had a day, and Group C had 30 minutes as a vocabulary preparation time. All participants took a vocabulary test, listening comprehension test, and a questionnaire. Moreover, six students from each group were selected for a post-interview to grasp their attitude toward vocabulary preparation and strategies they used during the listening test. Results showed that the group of informants given longest vocabulary preparation time significantly outperformed the others on the vocabulary test among all. Furthermore, a strong correlation between the amount of preparation time and test takers’ confidence level was found. On the other hand, it was found that vocabulary preparation did not show positive impact as for listening comprehension. Overall, the research results infer that listening comprehension is not simply from vocabulary knowledge.

Meccartty (2000) investigated the relation of lexical and grammatical knowledge on reading and listening comprehension in Spanish as a second language. One hundred and fifty-four university students were divided into a listening group and a reading group to test their lexical and grammatical knowledge. Both groups received corresponding texts. However, the listening group received listening input; on the other hand, the reading group received reading input. By means of multiple regression analysis, it was found that only 13 percent of vocabulary

knowledge contributed to listening comprehension. Therefore, she concludes that vocabulary knowledge does not seem to be very important in listening comprehension.

In addition to vocabulary preparation as a bottom-up listening strategy, other possible bottom-up listening instructions are such as 1) discriminating between intonation contours in sentences, 2) discriminating between phonemes, 3) listening for morphological endings, 4) recognize syllable patterns, number of syllables, and word stress, 5) Being aware of sentence fillers in informal speech, and finally 6) selecting details from the text (Peterson, 2001, p.93).

In contrast to researchers who emphasize the efficacy of bottom-up listening processes, a number of empirical studies on the positive impact of interactive top-down and bottom-up listening strategies have been done. Vandergrift (2004), for instance, points out that top-down listening strategies can facilitate ‘real-life listening skills,’ although they are not adequate to compensate for a lack of word recognition competence. On the other hand, bottom-up listening strategies can develop word recognition skills, though this focus is more beneficial for low proficient learners. Therefore, the effective utilization of the two types of listening processes are salient in language teaching since they occur at different levels of cognitive organization (Rost, 2005).

Peterson (2001) addresses the fact that higher proficient students are likely to be aware of their effective utilization of both top-down and bottom-up listening strategies simultaneously. In other words, it appears that proficient listeners tend to use repertoires of listening strategies effectively in order to regulate listening comprehension. Goh (2002) investigated ELLs’ listening strategy uses in L2 listening. A total number of 40 Chinese ESL students verbally informed researchers of their listening strategies in a listening session. As a result, a taxonomy of listening strategy from higher and more effective listeners showed two strategies that were used: cognitive

and metacognitive. Cognitive tactics were used to transfer information they heard to be stored and recalled (inference, elaboration, prediction, contextualization, translation, fixation, visualization, and reconstruction). In addition, a metacognitive approach was used to handle complex processing of cognitive listening comprehension (pre-listening preparation, selected attention, direct attention, comprehension monitoring, real-time assessment of input, comprehension evaluation). This analysis resulted in a generalization that higher proficient students tend to utilize cognitive and metacognitive listening comprehension approaches effectively while lower proficient ELLs tend to rely on only cognitive strategies. As Goh found, 44 listening comprehension tactics were used in the study. Although numerous listening approaches were found, ELLs need to learn when and how to use them effectively, usefully, and meaningfully.

Metacognitive listening strategies. Another type of listening strategy for L2 listening is the metacognitive strategy. This research interests are growing in the past three years (Goh & Hu, 2013) in addition to cognitive strategies in order to reinforce language learners' listening ability (e.g. Willson, 2003; Goh & Taib; 2006, Vandergrift; 2004, 2006, 2007; Vandergrift & Tafaghodtari, 2010). According to Goh and Taib (2006), metacognition involves three different types of knowledge, namely person, task, and strategy knowledge. Person knowledge is the knowledge to understand individual and universal traits which impact one's learning. Task knowledge is to comprehend the purpose, the demands, and the nature of learning tasks. Finally, strategy knowledge is to know how to use approaches and techniques that are likely to be effective in accomplishing a task or goal. In terms of listening in L2, the strategy knowledge plays the most important role. Therefore, learners are in need of instruction to acquire metacognitive strategies effectively in order to help them understand and facilitate L2 listening.

According to Peterson (2001), “Metacognitive strategies involve planning, monitoring, and evaluating comprehension” (p.90). On the other hand, Goh and Taib (2006) emphasizes the effective metacognitive instruction should have four focuses: prediction, monitoring, evaluating, and solving problems. They investigated the efficacy of metacognitive process-based instruction to primary level students in Singapore. All the pupils were 11 or 12 years old and they spoke English as a common language, although it was slightly different from the Standard English because of the local variety in terms of pronunciation and grammatical features. Hour-long listening lessons were complimented eight times which focused on three stages of process-based listening instruction: listen and answer, reflect, and discuss. As for the first stage, participants were given listening three to four comprehension questions in multiple choices after listening a text in six lessons. In the last two lessons, they wrote a short answer for each question. At the second stage, students were given a short answer about their perception of how they had completed the listening tasks. As the final stage, students gave a self-report in a discussion time. As a result, pupils successfully established confidence in listening and knowledge in metacognitive, strategy knowledge increased. Also, meta-cognitive instruction enabled students obtain better listening ability observed by the listening comprehension questions (the first stage). Goh and Taib emphasize that process-based instruction and explicit strategy instruction were effective to facilitate low proficient pupils. The participants especially benefit gaining metacognitive strategies by completing listening tasks focusing which is made to guide them to predict, monitor, evaluate, and solve problems.

Vandergrift, et al. (2006) developed and validated an effective indicator of metacognitive awareness of listening. They developed the MALQ (Metacognitive Awareness Listening Questionnaire). It assesses ELL’s metacognitive awareness and perceived strategy use while

listening to a text. It contains five distinct factors: Problem-solving (PS), planning/Evaluation (PE), Mental Translation (MT), Person Knowledge (PK), and Directed Attention (DA). PS represents ELLs' knowledge of inference of their comprehension and to monitor these inferences. PE represents students' preliminary stage of listening and evaluation of their achievement. MT defines whether or not learners translate from what they hear to their L1. PK shows students' strategy use of controlling self-efficacy during listening when they feel difficulty. Finally, DA is listeners' strategy use to focus on listening. It appears that the higher language ability a learner has, the better-balanced metacognitive strategies are used. Vandergrift and Tafaghodtari (2010) similarly claim that "learners with a high degree of metacognitive knowledge and the facility to apply that knowledge are better at processing and storing new information, finding the best way to practice, and reinforcing what they have learned" (p.473).

Metacognitive instruction in L2 can facilitate language proficiency of language learning. Vandergrift and Tafaghodtari (2010) also investigated the efficacy of a metacognitive, process-based teaching approach in French as a second language over a semester. In this study, 106 university-level French language learners were randomly divided into two groups: 59 students in the experimental and 47 students in the control group. Based upon the pre-listening test, the participants who scored more than the mean score (14) were classified as skilled listeners and those who scored less than the mean were classified as less skilled listeners. The experimental group received both metacognitive and listening instructions while the control group did not receive a metacognitive instruction. The same two instructors taught both groups, and the same texts were utilized during the listening training. Listening achievement was measured by a post-experimental test; moreover, metacognitive knowledge change was measured by the MALQ. As a result, it was found that metacognitive processed-based listening instruction was beneficial by

revealing the following facts: 1) The experimental group outperformed the control group on the post-experimental listening comprehension test. 2) Less skilled listeners in the experimental group demonstrated greater improvement on the test. 3) Less skilled listeners in the experimental group significantly raised their metacognitive awareness in listening.

Consequently, many researchers agree on the efficacy of a metacognitive listening comprehension approach particularly for lower skilled ELLs in terms of fostering L2 listening ability. Nurturing metacognitive listening strategies for ELLs helps to comprehend and transfer processing information meaningfully.

Summary

The empirical research done in the field of note-taking revealed a call for instruction for NNSs in order to be successful in an academic context. Although much of it shed light on the importance of note-taking activity, it can be claimed that more research on efficacy of note-taking instruction in a longer period and attitudes toward its training of ELLs is needed. In addition, studies of listening processes explain how to listen effectively in an academic context. Similar to need for further research on the impact of note-taking instruction, research on effect of integrated listening instruction with note-taking activity can contribute to understand how to instruct taking notes in an academic context.

Chapter III: Methodology

This chapter provides detailed information of the research method used in the current study including, participants, materials and procedures, and data analysis.

Participants

The participants in the current study are 23 ESL university students in a Midwestern state of the United States. The university is located in Mankato, Minnesota, the population of which was approximately 40,000 in 2012 according to United States Census Bureau (U.S. Census Bureau, 2014). The university has more than 140 undergraduate programs and 80 graduate programs with online and off-campus learning opportunities. There are more than 18,000 students, including 1,035 international students. The biggest international population is Saudi Arabian (n=177), the second is Korean (n=86), and the third is Nepali (n=73)¹. All international students have to possess a certain level of English ability: TOEFL iBT 61+, TOEFL PBT 500+, or IELTS 5.5+. Newcomers with English language competence lower than a certain level (TOEFL iBT 89) need to take a placement test that is used by the majority of colleges and universities in the state. It contains two sections: listening and reading. Test takers who do not pass this test are required to take ESL courses: Advanced Oracy Development for Non-Native Speakers and/or Introduction to Composition.

The participants were all enrolled in an ESL course, Advanced Oracy Development for Non-native Speakers in Fall of 2013. Although there were 26 students who participated in the pre-test, four of them did not take the post-test because of the optional nature of the data collection environment. Moreover, one participant who took only the post-test was also omitted

¹ As of Fall 2013

² Words Per Minute

³ Reverse scores included

⁴ * indicates the application of reverse score in order to avoid negative scores. In reverse scoring,

from the current study. The majority of the students were from Korea (n=10), and others were from Saudi Arabia (n=4), China (n=2), Jordan (n=1), Libya (n=1), Puerto Rico (n=1), Germany (n=1), France (n=1), and Ivory Coast (n=1). Their language proficiency was relatively homogeneous (TOEFL iBT 60+). There were 18 male and 5 female students in this study. Their length of English study ranged from six months to ten years and nine months (an average of 3.68 years). Furthermore, their length of stay in the U.S. varied from one week to two and half years (an average of 7.81 months), which means that some students had experiences learning at other institutions in the United States before they came to this university; however, others came to the university straight from their home countries. The awareness of their listening comprehension was revealed as well. Their self-assessment of listening ability averaged 2.96 out of 5 (1 – very low, 2 – low, 3 – intermediate, 4 – high, and 5 – very high).

I provided students with listening comprehension training, which I adopted from guidelines by Vandergrift (2004), focusing on various metacognitive listening processes (see Table 1). The listening materials used in the class were audio-visual academic lectures. Students first predicted words and key concepts they may hear in a listening text based on pre-listening activities. The pre-listening activities were aimed to activate their schemata to apply when listening. It consisted of discussions, small research projects, reading, and vocabulary learning. In addition, they set their first listening goal before they watched the audio-visual listening text. During the first listening stage, they were instructed to take notes. After listening, they confirmed their initial hypothesis whether it was correct or not, and prepared for a discussion with peers. At this point, students confirmed their listening comprehension in groups and modified information in their notes. Before they listened for the second time, they reflected on their comprehension

Table 1: Pedagogical stages and metacognitive processes of listening from Vandergrift (2004)

Pedagogical Stages	Metacognitive Processes
<p><i>Prelisting: Planning/predicting stage</i></p> <p>1. After students have been informed of the topic and text type, they predict the types of information and possible words they may hear.</p> <p><i>First listen: First verification stage</i></p> <p>2. Students verify their initial hypotheses, correct as required, and note additional information understood.</p> <p>3. Students compare what they have understood/written with peers, modify as required, establish what still needs resolution, and decide on the important details that still require special attention</p> <p><i>Second listen: Second verification stage</i></p> <p>4. Students verify points of earlier disagreement, make corrections, and write down additional details understood.</p> <p>5. Class discussion in which all class members contribute to the reconstruction of the texts main points and most pertinent details, interspersed with reflections on how students arrived at the meaning of certain words or parts of the text.</p> <p><i>Third listen: Final verification stage</i></p> <p>6. Students listen specifically for the information revealed in the class discussion which they were not able to decipher earlier.</p> <p><i>Reflection stages</i></p> <p>7. Based on the earlier discussion of strategies used to compensate for what was not understood, students write goals for the next listening activity.</p>	<p>1. Planning and directed attention</p> <p>2. Selective attention, monitoring and evaluation</p> <p>3. Monitoring, evaluation, planning, and selective attention.</p> <p>4. Selective attention, monitoring, evaluation, and problem solving.</p> <p>5. Monitoring, evaluation, and problem solving</p> <p>6. Selective attention, monitoring, and problem solving</p> <p>7. Evaluation, planning</p>

from the first time, made additional predictions, and set another listening goal. During the second listening stage, students were instructed to add and modify listening information in their notes. Students, again, evaluated their comprehension and had a discussion with peers. At this phase, students discussed the organization of the text in addition to detailed information from their listening. After the second discussion, students listened to the text for the third time at home as homework.

Their listening comprehension and note-taking skills were assessed by assignments. They typed out their notes and, therefore, had enough time to review their notes and reflect on their listening comprehension by themselves in order to complete the tasks. The intention behind the listening processes was to routinize their listening behaviors, increase awareness of their strengths and weaknesses in listening comprehension, and to deepen their listening comprehension. In addition to Vandergrift's (2004) suggested pedagogical stages, I had students work in pairs and groups in order to develop their interactive language, to help and encourage each other, and to prepare for group work projects in this course and in other classes.

In terms of note-taking instruction, students were taught note-taking strategies such as formatting and organizational devices. The format they were taught was the outlining note-taking method because this is flexible and has useful advantages in various classes. Additionally, organizational devices such as abbreviation, symbols including arrows, lists, and diagrams, which were adopted from a study by Carrell (2007), were taught. I gave them note-taking assignments to observe development of their note-taking ability and to increase their attention to note-taking. Their assignments were checked in terms of use of note-taking strategies, and they were given explicit feedback. Moreover, I provided a sample of notes in the appropriate format with many kinds of organizational devices after they completed each listening assignment. This

self-assessment activity allowed students to evaluate their performance by themselves in terms of the number of key terms, organizational devices, and the proper format. This system, “Hierarchical structure of the lecture” was adapted from Song (2011) as described in Chapter II. The model notes, which students used for self-assessment, had five levels: Level 1(topic), Level 2 (main idea), Level 3 (supportive idea), Level 4 (detail information), and Level 5 (minor information). In addition, each level was attached to points: five points, four points, three points, two points, and one point respectively. Therefore, their performance was self-assessed by points (see Appendix C). I intended to have them realize note-taking strategies and their note-taking habits by providing this reflective opportunity to reinforce their note-taking strategy.

Materials & Procedures

The participants took a listening test and survey questionnaires at the time of the pre- and post-tests. The participants were instructed to take notes while listening. After that, two survey questionnaires were distributed: Survey Questionnaire – Listening (Appendix A) and Survey Questionnaire – Note-taking (Appendix B). Students were not specified which survey to fill out first, so the order to fill the surveys was up to participants’ will.

Listening Test. The participants’ listening ability was measured by means of listening model tests from a practice book of TOEFL iBT by Sharpe (2010). In order to facilitate the participants’ awareness of note-taking perceptions and awareness of metacognitive listening, three listening tasks were given. The audio materials utilized were academic lectures in classes of music appreciation, engineering, and anthropology. The length of each lecture was approximately homogeneous (see table 2). They were selected with a consideration of the participants’ diversity of majors. The summary of the three listening texts is presented below. During listening, students were instructed to take notes, and the audio was played only once.

They were encouraged to use their notes in order to answer six questions after each audio. The question items were presented both orally and printed in answer choice documents. All items were multiple choices of four. To respond, they chose from answers on an answer sheet (see Appendix D). However, they were not allowed to read questions and question items during listening.

Table 2: Length of each lecture

	Lecture 1	Lecture 2	Lecture 3
Topic	Music appreciation class	Engineering class	Anthropology class
Length	6:42	5:32	5:50
Word	935	837	936
WPM ²	1.46	1.57	1.70

Survey Questionnaire – Listening. The MALQ (Metacognitive Awareness of Listening Questionnaire) developed by Vandergrift, et al. (2006) was adopted to measure participants’ perspectives on metacognitive ability of listening (see Appendix A). It was designed to assess and regulate language learners’ awareness level of L2 listening comprehension. It was also designed for the use of self-assessment of awareness of the listening process and to reflect listening strategies of L2 listeners. It has 21 questions about metacognitive listening knowledge in relation to five factors: *Planning and Evaluation*, *Problem Solving*, *Directed Attention*, *Mental Translation*, and *Personal Knowledge*. The *Planning and Evaluation* factor presents L2 listeners’ planning stage and reflective evaluation of their understanding. The second aspect, *Problem Solving*, refers to inference strategies during listening by monitoring what they understood. *Directed Attention* measures the participants’ level of concentration. *Mental Translation* explains knowledge of translation. Finally the last factor, *Person Knowledge*, is about students’ reflection on listening such as attitudes and difficulties. It consists of a five-level

² Words Per Minute

scaling from 1 (strongly disagree) to 5 (strongly agree). Participants were asked to answer them after completing the listening tasks.

Survey Questionnaire – Note-taking. A debriefing questionnaire developed by Carrell, et al. (2002) was used in order to measure the participants' perceptions and values of the note-taking activity. It has 22 questions related to their general note-taking habits and experiences. It consists of five measuring scales: 1 – disagree strongly, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, and 5 – agree strongly. Participants were also asked to answer them after completing the listening tasks.

Data Analysis

In addressing the primary research questions, data compiled from the questionnaires on pre- and post-tests were compared and contrasted. In order to answer the first research question, “Is there any difference in terms of perceptions of a note-taking activity during listening before and after experiencing note-taking training?” data from the Survey Questionnaire – Note-taking (Appendix B) was calculated. Likewise, the second research question, “Is there any difference in terms of metacognitive awareness of listening before and after receiving listening instruction?” was addressed by analyzing data from Survey Questionnaire – Listening (Appendix A). The third question, “Did the note-taking activity help participants answering listening comprehension quizzes?” was analyzed by comparing and contrasting their note-taking attitudes and listening test scores.

Summary

Chapter III addressed the methodology of the current study including participants, materials and procedures, and data analysis. This chapter provided readers with the background

of the participants, context of data collection environment, and how the data were collected and analyzed.

Chapter IV: Results

This chapter provides the results of the collected quantitative data gained from the participants' surveys in relation to perspectives on note-taking, metacognitive listening, and the listening test scores. A number of differences in participants' responses on note-taking perceptions were identified based on the debriefing questionnaire by Carrell, et al. (2002). Metacognitive awareness of listening strategy uses were examined according to five factors: problem solving, planning/evaluation, mental translation, person knowledge, and directed attention (Vandergrift, 2004; Vandergrift, et al., 2006). The listening test scores were calculated based on the performances on pre- and post-tests. However, the most important aspect of this data analysis was not participants' achievement; listening tasks were given to increase engagement with the task and to increase attention to their awareness of note-taking and listening strategy use.

Perceptions on note-taking

ESL students' perceptions of taking notes were analyzed first. Table 3 shows the data from pre- and post-instruction surveys about students' perceptions of note-taking. The pre-instruction survey was completed before participants experienced note-taking training, while the second survey was conducted after they had practiced effective academic note-taking from lectures for about four months. All the twenty-two statements were scaled from (1) strongly disagree, (2) disagree, (3) Neither agree nor disagree, (4) agree, or (5) strongly agree.

TABLE 3³: Results of overall perceptions on note-taking

	Pre	post	df
S1	3.70	4.04	0.34
S2	3.91	4.09	0.18
S3	3.70	3.96	0.26
⁴*S4	3.70	4.22	0.52
S5	3.22	3.59	0.37
S6	3.48	3.70	0.22
*S7	2.52	2.83	0.31
*S8	3.04	2.87	-0.17
*S9	2.96	2.87	-0.09
S10	3.52	3.91	0.39
*S11	2.83	3.23	0.40
*S12	2.87	2.64	-0.23
S13	2.61	2.41	-0.20
S14	2.57	3.45	0.88
S15	2.30	2.30	0.00
*S16	3.17	3.09	-0.08
S17	2.13	2.48	0.35
S18	3.57	3.87	0.30
S19	2.43	2.83	0.39
*S20	2.87	3.23	0.36
*S21	2.74	2.83	0.09
S22	2.83	4.04	1.21
Mean	3.07	3.30	0.24
SD	0.49	0.60	0.10

p=.001

As can be seen, the data indicates that students' overall perceptions toward note-taking became slightly more positive after experiencing note-taking training. Before they were trained to take notes, their overall average perception was 3.07; on the other hand, it increased to 3.30. The most significant differences came in response to Statement 11, "I have had training in developing note-taking skills in English." All participants could have marked "strongly agree"

³ Reverse scores included

⁴ * indicates the application of reverse score in order to avoid negative scores. In reverse scoring, 5 changed to 1 and 4 changed to 2.

with five points. However, the result of this statement was 4.04 at the post-test although all of them experienced note-taking training for roughly four months. This can be interpreted that participants were not satisfied with the semester-length note-taking training. They might have felt that they needed more time and practice to gain sufficient self-confidence in note-taking and listening.

As for students' responses to Statement 1, "Taking notes helped me to answer the questions better than if I had not been able to take notes," they increased their perceptions by 0.34 after experiencing the note-taking training. Statement 3, "I felt more at ease when I could take notes than when I could not," indicates how much the participants' felt comfortable taking notes. They first perceived comfort at an average level of 3.70; however, their perceptions increased to 3.96 at the time of the post-test. Therefore, it was found that there seemed to be a clear trend that showed the participants increased positive attitudes toward note-taking and understanding of the benefits and practicality after experiencing the note-taking training.

Furthermore, acquiring note-taking skills seemed to help the participants answer listening comprehension questions and raise their motivation to listen. For example, students' responses to Statement 5, "taking notes helped me listen carefully to the lecture," and Statement 7, "taking notes distracted me from paying close attention to the information in the lectures," indicated that their positive perceptions increased. It appears that the note-taking task helped hold their attention to the lecture. Therefore, taking notes may be able to encourage students to more closely attend to listening tasks. It also could facilitate listening for students who tend to give up because of lacking concentration or losing track. Also, participants seemed to perceive that their notes played a role as "insurance" during listening to hold onto in order to prepare to answer test questions. For example, Statement 6, "taking notes helped me to understand the lectures," and

Statement 19, “taking notes on a sheet of paper interfered with my concentration during the computerized lectures,” both showed positive growth of their perceptions. From these results, it appears that note-taking instruction could help them to be able to listen to the text more closely and control their anxiety toward listening difficulty to some extent.

Another statement to consider from the data is Statement 14, “The questions were about things I had written down in my notes.” At the first data collection phase, their perceptual score was 2.57 whereas it increased to 3.45 at the second phase. More than half of the participants showed agreement on this. This result suggests, therefore, that most of the participants learned what material to focus on during the listening task, and what to take notes on to prepare for prospective listening comprehension questions through the note-taking training. This result contrasts to the finding in Carrell et al. (2002). In their study, only 30% agreed with the statement. This difference can be attributed from the fact that their data was collected without giving participants sufficient training in note-taking training. This difference seems to suggest that note-taking training is essential for L2 listeners to be aware of what to listen for and record in order for better listening performance.

In contrast to most of the positive responses, students also showed negative perceptions on several statements. As one instance, Statement 8, “I wanted more time to review my notes before answering the test questions,” their perception level was 3.04 points from the pre-test and 2.87 from the post-test. They perceived that they needed more time to review their notes and remember the places where information was written in their notes. Therefore, it could have been more helpful for the participants if they had had more time to examine their notes in order to be ready for the listening questions.

Additionally, students responded negatively at the post-test to Statement 13, “I had enough time to take as many notes as I wanted.” The data from pre-instruction of note-taking revealed 2.61 to the response. In contrast, they decreased their perceptions to 2.41. Clearly, students felt that they had enough time at the time of the pre-test; on the other hand, it appears that they needed more time to take notes at the time of the post-test. This can be interpreted as that they likely improved their listening abilities, and therefore, they wanted more time to note down what they could listen.

Similarly, another consideration is Statement 9, “I found it difficult to listen to the test questions and at the same time to look for the specific information in my notes,” also indicates their decreased agreement. According to Carrell, et al. (2002), most of the participants used circles and arrows to indicate where important information is written. This result might indicate their capability of multi-tasking; students could have found it difficult to process information as they listened and noting down important key words in their notes simultaneously (Carrell, et al., 2002). Furthermore, it can be seen that locating information to complete the listening comprehension task was also not easy for them. A possible cause of the results might be the note-taking training they experienced. Participants were allowed to listen to lectures several times while they were training in note-taking strategies. However, for the test, the audio was played only once in pre- and post-test stages. Therefore, students had enough time to review and locate important information while they were in the training.

Lastly, it was found that students used memory relatively more than using their notes when they answered the listening questions from the responses to Statement 16, “I remembered enough of the lecture to answer the test questions without taking notes.” Before the note-taking instruction, they perceived it by 3.17; on the other hand, it decreased to 3.09 after the instruction.

This is a reverse score because it was expected that they would obtain higher perceptions at the post-instruction. Even though the score marked comparatively high, it appears that participants still highly relied on memory when answering the questions. That might mean, however, that taking notes enhanced students' ability to remember the material.

The results gained from the questionnaire of perceptions on note-taking revealed that students have overall positive attitudes on note-taking; however, they also perceived difficulty in relation to utilizing their notes. For example, note-taking instruction enabled students to control self-efficacy and focus on important items in listening materials. On the other hand, noting down fast as they listen, finding answers from their notes to answer multiple-choice questions continued to be difficult.

Awareness of metacognitive listening

The participants' perceptions of metacognitive listening awareness were measured by a questionnaire survey adopted from Vandergrift, et al. (2006). The overall results are shown in the table 4 below. By examining the raw data, the participants decreased their awareness of metacognitive listening skills. Even though their perceptual level was 3.30 from the pre-test, it decreased to 3.21 on the post-test. Students responded to this statement by 4.04 at the time of pre-instruction and 3.04 at the time of post-instruction. A negative factor contributed to this result could be the optional nature of the data collection environment. All students were voluntarily participating in the research; therefore, they probably did not take it seriously. However if it were a high-stake examination, students might have tackled the task without giving up on listening (Vandergrift, 2005).

TABLE 4⁵: Results of overall awareness of metacognitive listening

	Pre	post	df
S1	3.13	3.17	0.04
S2	3.48	3.17	-0.31
* ⁶ S3	2.83	3.09	0.26
*S4	3.57	3.35	-0.22
S5	3.39	2.96	-0.43
S6	3.26	3.3	0.04
S7	3.22	3.39	0.17
*S8	3.00	3.13	0.13
S9	3.61	3.26	-0.35
S10	2.91	3.22	0.31
*S11	3.13	2.87	-0.26
S12	3.32	3.57	0.25
S13	3.00	3.32	0.32
S14	3.26	3.00	-0.26
S15	3.26	3.48	0.22
*S16	4.04	3.04	-1.00
S17	3.57	3.43	-0.14
*S18	4.09	3.74	-0.35
S19	3.09	3.13	0.04
S20	3.00	2.91	-0.09
S21	3.22	2.96	-0.26
Mean	3.30	3.21	-0.09
SD	0.32	0.22	0.31

p= .001

Another significant difference was Statement 5, “I use the words I understand to guess the meaning of the words I don’t understand.” The participants gave their awareness rate at 3.39 first, but it decreased to 2.96. The difference 0.43 is statistically significant. From this result it can be seen that prediction strategy before listening did not work well. As Goh (2008) highlights, making students aware of metacognitive listening strategies needs a lot of scaffoldings while ELLs are working on listening texts. Therefore, the listening instruction should have more emphasis on during-listening activity to help them realize how they can guess unknown vocabulary while listening.

⁵ Reverse scores included

⁶ * indicates the application of reverse score in order to avoid negative scores. In reverse scoring, 5 changed to 1 and 4 changed to 2.

However, as for their responses to Statement 1, “Before I start to listen, I have a plan in my head for how I am going to listen, indicates a positive increase. Also, students increased their awareness on Statement 10, “Before listening, I think of similar texts that I may have listened to,” which indicates that they surely connected their prior knowledge to the listening text as a plan. This can result from the pre-listening activity during the listening instruction. The process of prediction was repetitively done during the instruction; consequently, it seems that students acquired this strategy to listen to the text effectively.

Although students felt difficulty guessing unfamiliar words during listening, they could successfully raise their attention on monitoring while listening. Responses from students to Statement 13, “as I listen, I quickly adjust my interpretation if I realize that it is not correct,” indicates 0.23 increases; they marked 3.00 before the listening instruction intervention but they marked 3.32 after the instruction. Statement 12, “I try to get back on track when I lose concentration” also shows positive increase. Therefore, the instruction focused on metacognitive listening strategy could enhance abilities of monitoring. Moreover, by repeating the same processes of metacognitive listening instruction empowered students to keep listening. However, Vandergrift and Tafaghodtari (2010) emphasize that “this approach to listening could become tedious if always carried out in the same way” (p. 491). Therefore, the listening instruction should have avoided the same way of instruction not to make them feel bored with the routine. This could have changed the result of the data from the post-test.

Examination of the five factors in metacognitive listening strategies was also parsed out. Problem solving (PS) was measured by Statements 4, 11, and 18. Planning/Evaluation (PE) was measured by Statements 1, 10, 14, 20, and 21. Mental translation (MT) was measured by Statements 4, 11, and 18. Personal knowledge (PK) was measured by Statements 3, 8, and 15. Finally, directed attention (DA) was measured by Statements 2, 6, 12, and 16. Table 5 indicates

the mean scores of the participants' perception changes from both pre- and post-test stages on the five metacognitive listening strategies.

TABLE 5: Awareness of five metacognitive listening strategies

	Pre	Post	df
PS	3.31	3.25	-0.07
PE	3.10	3.05	-0.05
MT	3.60	3.32	-0.28
PK	3.03	3.23	0.20
DA	3.53	3.27	-0.26

As is shown in the table, participants perceived a positive change on only *Person Knowledge* (PK). PK is the knowledge of the person to manage emotional factors during listening such as self-confidence. Before they experienced the listening instruction, their PK level was 3.03; however, it increased to 3.23 after the instruction. They perceived listening in L2 to be easier, and they were less nervous. This result indicates that students' self-efficacy in L2 listening increased slightly. Therefore, the difficulty and anxiety level in L2 listening compared to the other three skills decreased, and self-confidence in addition to ease in L2 listening was built through metacognitive listening strategy instruction. Moreover, this result may be attributed from the listening practice they experienced in class. The metacognitive listening training adopted from Vandergrift (2004) contained a second and a third chance to evaluate and identify problems in listening comprehension. This repetitive practice enabled them to gain self-efficacy to overcome affective difficulty in listening.

In contrast, *Mental Translation* seemed likely to be used during both pre- and post-test to overcome listening difficulty. By using this strategy, it can be said that students could control their ability of self-efficacy, PK. However, as Vandergrift, et al. (2006) define it as an

“inappropriate approach,” it might be argued that they should have avoided using too much of their L1 knowledge altogether when they listen in L2 in order to be more successful listeners. In other words, this approach is more likely to be used by novice LLs than experienced ones, and students should develop listening strategies to help them comprehend L2 listening texts effectively without translating into their L1.

Another metacognitive listening skill used less by the ESL students was *Directed Attention*. DA is listeners’ strategy used to focus on listening. It represents learners’ strategies to concentrate on texts while listening. Although it was marked 3.53 before the listening instruction, it decreased to 3.27 after it. One possible inference from this result is that students tend to give up listening when they perceive difficulty or are bored during listening; it appeared that they did not try to get back on track when they lost concentration. Again, this can be attributed from the environment that students participated in the current research voluntarily (Vandergrift, 2005).

In sum, students’ awareness of metacognitive strategy use decreased during the course of the semester on the MALQ. It can be interpreted that as students increased their self-efficacy as learners and listeners (as demonstrated in the increased scores on the PK strategy), and therefore were less anxious about how their skill level, they were able to develop more reasonable expectations of their listening skills and strategies. Related to that, participants might have controlled PK by gaining confidence and reducing negative affective levels in L2 listening by using MT strategies. In contrast to Vandergrift (2010), Nakayama, et al. (2013) claim that the process of the translation strategy is commonly used in bilingual education contexts. Therefore, even though translating word by word into L1 from L2 may interfere with the L2 listening process, people who possess multilingual knowledge commonly use the strategy. It could be a potential strategy in the process of language development. As a result, an effective listener

should be able to regulate their emotion by means of effective strategies in order to overcome difficulties in L2 listening.

Listening performance

For analysis purposes, listening comprehension tests were employed before participants filled out the questionnaires. The listening texts contained three listening tasks, and each of them contained six questions. Therefore, the full score was 18. The overall result, out of the total score, was shown in Table 6 below.

TABLE 6: Overall results of the listening score

	pre	Post	df
Mean	9.35	10.26	0.91
SD	2.44	2.79	0.34

Participants outperformed on the post-test compared to the pre test (pre μ : 9.35, post μ : 10.26, df: 0.91). There was not, however, any significant improvement on the listening tests; however, students did gradually and certainly develop listening skills.

TABLE 7: Results of each listening test

	pre		post		overall	
	Mean	SD	Mean	SD	Mean	SD
#1 (Music Appreciation)	3.43	1.06	3.70	1.33	3.57	0.14
#2 (Engineering)	2.52	1.31	3.09	1.18	2.81	0.07
#3 (Anthropology)	3.39	1.13	3.48	1.35	3.44	0.11

Table 7 shows the results of each listening task. As can be seen, they achieved higher scores on the post-tests compared to the pre-tests, a fact which might be attributed from a degree of familiarity with the topics as they take classes at university. The length of exposure in the

English spoken country was also likely to have positively affected their listening ability.

Although all students did not experience studying all of the subjects listed above, most of them studied subjects related to the listening content as general education. The same result found in Carrell, et al.'s (2002) study was found in the current study; students tend to perform better on arts and humanities topics rather than sciences topics with note-taking.

In order to examine the listening skills of participants, they were divided into two groups: higher and lower listening proficient groups (See Table 8). The groups were divided according to the mean score on the pre-test. The average score was 9.35 out of 16 questions. Therefore, participants who scored more than 10 were divided in the higher proficient group; meanwhile, those who scored less than 9 were in the lower group. As can be seen, the group of higher proficient listeners got 12.13 out of 16 on the pre-test; on the other hand, lower proficient listeners got 7.87 out of 16 on average. The number of participants in the higher group is eight, and 15 students in the lower group. The higher listeners increased their average score to 12.50 and lower group averaged 9.07 on the post-test. More prominent growth was observed in the group of lower proficient listeners.

TABLE 8: Results of overall listening mean scores of higher and lower proficient listeners

	pre	post	df
Higher (n=8)	12.13	12.50	1.04
Lower (n=15)	7.87	9.07	1.17

Relationship between listening performance and note-taking perceptions

In order to examine the relationship between the participants' listening scores and note-taking perceptions, the data from participants who had positive perceptions on note-taking was analyzed.

TABLE 9: Positive perception on note-taking and their listening scores

Student	Positive perception on note-taking			Listening score		
	pre	post	df	pre	post	df
1	2.36	3.45	1.09	12	15	1.25
2	3.14	3.24	0.10	9	11	1.22
3	3.32	3.38	0.06	13	9	0.69
4	2.59	2.95	0.36	5	6	1.20
5	2.27	3.29	1.01	9	12	1.33
6	2.73	2.95	0.23	6	9	1.50
7	2.77	3.23	0.45	9	6	0.67
8	3.27	3.59	0.32	9	12	1.33
9	2.86	3.36	0.50	10	10	1.00
10	3.14	3.59	0.45	10	11	1.10
11	3.05	3.09	0.05	12	13	1.08
12	2.86	3.64	0.77	9	9	1.00
13	3.14	3.71	0.58	7	12	1.71
14	2.55	3.27	0.73	8	10	1.25
15	2.50	3.00	0.50	8	11	1.38
16	2.95	3.71	0.76	7	9	1.29
Mean	2.84	3.34	0.50	8.94	10.31	1.19
SD	0.31	0.25	0.31	2.11	2.28	0.26

According to Table 9, there are 16 students who felt an overall positive perception throughout the semester, marked 8.94 on the pre- and 10.31 on the post-listening test (df: 1.19). On the other hand, participants who perceived negatively on note-taking during a listening test obtained 10.29 and 10.14 on the pre- and post-listening test respectively (df: 0.98), which is shown in Table 10.

TABLE 10: Negative perception on note-taking and their listening scores

Student	Negative perception on note-taking			Listening score		
	pre	post	Df	pre	post	df
1	3.55	3.24	-0.31	8	5	0.63
2	3.09	3.00	-0.09	14	15	1.07
3	3.36	3.05	-0.32	11	14	1.27
4	3.41	3.09	-0.32	8	10	1.25
5	3.86	3.60	-0.26	8	6	0.75
6	3.45	3.14	-0.32	8	8	1.00
7	3.45	3.41	-0.05	15	13	0.87
Mean	3.45	3.22	-0.24	10.29	10.14	0.98
SD	0.21	0.20	0.11	2.86	3.68	0.23

In other words, students who increased perception on note-taking during listening outperformed on the post-listening test over those perceived negatively on note-taking. Therefore, there is a clear correlation between positive attitudes toward note-taking and high listening scores.

Relationship between listening performance and awareness of metacognitive listening

Similar to the former section, the relationship between listening scores and metacognitive listening awareness was examined. There were 12 students who increased and 10 students who decreased awareness on the metacognitive listening questionnaire. However, there was only one student who did not report any awareness change at all over a semester. This participant gave the same amount of awareness level on both pre- and post-test. Therefore, this participant was excluded from this analysis. Table 11 indicates participants who increased awareness of their metacognitive listening strategy uses improved their listening performance on the post-listening comprehension test (average scores of listening tests were pre: 9.92 and post: 11.33). On the other hand, Table 12 reveals that participants who showed decreased awareness of metacognitive awareness of listening less significantly improved on their listening performance

on the post-listening comprehension test. The average scores of pre-tests were 8.70 and post-test were 8.80.

TABLE 11: Increased awareness of metacognitive listening and listening scores

Students	Increased awareness of metacognitive listening			Listening score		
	pre	post	df	pre	post	df
1	3.00	3.52	0.52	12	15	1.25
2	2.57	2.62	0.05	9	11	1.22
3	2.90	3.19	0.29	14	15	1.07
4	3.24	3.52	0.29	11	14	1.27
5	3.15	3.71	0.56	5	6	1.20
6	2.86	3.14	0.29	9	12	1.33
7	2.81	3.14	0.33	8	10	1.25
8	3.52	3.71	0.19	12	13	1.08
9	3.19	3.35	0.16	9	9	1.00
10	3.48	3.62	0.14	8	6	0.75
11	3.95	4.14	0.19	7	12	1.71
12	3.29	3.95	0.67	15	13	0.87
Mean	3.16	3.47	0.31	9.92	11.33	1.17
SD	0.36	0.39	0.18	2.81	2.95	0.24

As it is seen from Table 11, the mean scores of the 12 students who increased metacognitive listening awareness were 3.16 at the pre-test and increased to 3.47 at the post-test. The mean of their listening performance was 9.92 at the pre-test, and it increased to 11.33 at the post-test. They showed a significant growth in listening over the semester-long listening instruction. On the other hand, Table 12 shows that the mean scores of the 10 students who did not increase metacognitive listening awareness were 3.47 at the pre-test and 2.90 at the post-test. The mean of their listening performance was 8.70 at the pre-test and 8.80 at the post-test. In contrast with the other group of students, their achievement is not significant. It is worthy of note that the high achieving group of students rated their metacognitive listening awareness on the

post-test with the same mean score as the low-achieving students rated on their pre-test. In other words, students with less metacognitive awareness and poorer listening skill seem to rate their skills higher than they are, possibly because they are not aware of how much they still have to learn. Therefore, students who had more accurate awareness on metacognitive listening achieved significant growth on listening comprehension improvement. In other words, the pedagogical method used in the current study enhanced their awareness of metacognitive listening process, which can be turned to strategy acquisition. Consequently, metacognitive listening instruction which focused on students' self-awareness of their metacognitive listening processes is helpful for ELLs in order to develop their listening ability.

TABLE 12: Decreased awareness of metacognitive listening and listening scores

Student	Decreased awareness of metacognitive listening			Listening score		
	pre	Post	df	pre	post	df
1	4.00	3.81	-0.19	13	9	0.69
2	3.00	2.86	-0.14	8	5	0.63
3	2.43	2.38	-0.05	6	9	1.50
4	3.48	2.43	-1.05	9	6	0.67
5	3.95	3.24	-0.71	10	10	1.00
6	4.10	3.38	-0.71	10	11	1.10
7	3.05	2.33	-0.71	8	10	1.25
8	3.81	2.57	-1.24	8	8	1.00
9	3.29	3.14	-0.14	8	11	1.38
10	3.62	2.86	-0.76	7	9	1.29
Mean	3.47	2.90	-0.57	8.70	8.80	1.05
SD	0.51	0.46	0.39	1.85	1.89	0.29

In addition to the relationship between ESL students' awareness of their metacognitive listening strategy uses and their listening performance, the relationship between high awareness of metacognitive listening strategy uses and listening performance was analyzed. In order to see

the impact of the metacognitive listening instruction, only the results from the post-test were analyzed.

Table 13: Relationship between the Level of Awareness of Metacognitive Listening Strategies and Listening Score

Student	Higher awareness	Listening score	Lower awareness	Listening score
1	3.52	15	2.62	11
2	3.81	9	2.86	5
3	3.52	14	3.19	15
4	3.71	6	3.14	12
5	3.29	12	2.38	9
6	3.24	10	2.43	6
7	3.38	11	3.14	10
8	3.71	13	2.33	10
9	3.35	9	2.57	8
10	3.62	6	3.14	11
11	4.14	12	2.86	9
12	3.95	13		
Mean	3.60	10.83	2.79	9.64
SD	0.26	2.79	0.32	2.64

As can be seen from Table 13, there were 12 students who reported higher metacognitive listening awareness level than the overall mean score from the post-test. The overall average score from the MALQ was reported 3.21. The students who realized their metacognitive listening strategy uses averaged 3.60, and their listening score was 10.83 on average. The mean score of the listening score was 10.26. On the other hand, there were 11 students who marked their metacognitive listening awareness lower than the average. They reported their awareness 2.79 on average, and the mean score of their listening score was 9.64 out of the possible score of 16. Students who were aware of their effective metacognitive listening strategies, consequently,

outperformed the students who were less aware of their strategy uses. Therefore, there seems to be a positive effect; metacognitive awareness listening instruction may have helped L2 listeners comprehend the listening texts effectively. However, since the number of participants was limited in the current study, additional research with more number of participants is required.

The data in Table 14 shows the mean score of the five factors of metacognitive listening strategies from students who gained higher and lower listening score than the average.

Table 14: Awareness of the five factors of metacognitive listening strategies used by students who gained higher and lower score on the post-listening comprehension test

	Higher Listening score n=8	Low Listening score n=15
PS	3.33	3.16
PE	3.38	2.88
MT	2.13	2.98
PK	3.13	3.07
DA	3.25	3.25

The average score of the listening comprehension test was 10.26 at the time of the post-test. As it is seen, students who achieved a higher score than the average on the post-listening comprehension test used larger number of metacognitive listening strategies effectively than students who attained lower than the mean score on the post-listening test. However, DA (Directed Attention) was the same level. The most highly used metacognitive listening strategy by the students who gained higher listening score was PE (Planning/Evaluation) which means that students likely prepared well before listening and did self-assessment after listening. On the other hand, MT (mental Translation) was least likely used by them. As Vandergrift, et al. (2006) states, MT is more likely utilized by novice language learners. It appears that the participants used the number of metacognitive listening strategies effectively in order to perform well on the

listening task. Therefore, possessing patterns of metacognitive strategies is the key factor to attain high listening score on a listening comprehension test. As a result, it seems that there is a positive effect on the use of metacognitive strategies to develop effective listening ability.

Summary

Participants increased in their positive perceptions on note-taking, a fact which can be interpreted to mean that they found benefits of their note-taking training. Interesting to note, on the other hand, they did not increase their perceptions on metacognitive awareness of listening over a semester-long listening instruction. It can be interpreted that participants first relied on their listening ability and strategies when they listen; however, they found more benefits to using note-taking strategies to answer listening comprehension tests. Consequently, their strategy usage shifted from listening to note-taking. In addition, a correlation was found between positive perceptions of note-taking and better listening performance and high awareness of metacognitive listening strategies and better listening performance. For instance, the note-taking strategy-focused instruction benefited ELLs realizing useful note-taking strategies in order to listen effectively. Also, the metacognitive-focused listening instruction helped them gain self-efficacy in listening ability. It was also found that L2 listeners who possess high listening ability likely to utilize a variety of metacognitive listening strategies effectively. In particular, leading them to be aware of their metacognitive listening strategy use helped developing L2 listening ability.

Chapter V: Conclusion

This chapter gives a review of the previous chapters and discusses limitations of this study and implications for L2 pedagogy.

The present study investigated ESL students' perceptual change in terms of taking notes before and after experiencing note-taking training, the impact of metacognitive listening instruction in order to facilitate effective note-taking, and the impact of note-taking instruction for listening development. Chapter I addressed issues behind the relationship between practical and theoretical views of note-taking strategies and listening strategies. Chapter II reviewed literature in relation to note-taking and L2 listening. A serious call for note-taking instruction for ESL students in academic contexts was first emphasized by Dunkel and Davy (1989). In addition, it was revealed that acquisition of effective L2 listening strategies is important in order to enhance students' listening ability. Chapter III explained the research methodology and design that were utilized in the current study. Finally, Chapter IV reported the results of the study.

The major findings were, first, the majority of the students' had more positive impressions of note-taking after experiencing note-taking training. It was found that strategy-based note-taking instruction helped students find practicality and benefits of taking notes. As for metacognitive awareness of listening instruction, it helped students develop their self-efficacy in L2 listening. A further analysis revealed that students who held positive perceptions of taking notes developed L2 listening competence on the listening comprehension test. Similarly, students who had better awareness of their metacognitive listening strategy uses could attain higher scores on the listening comprehension test than those who did not realize their metacognitive listening strategy uses.

To address the first research question, “Is there any difference in terms of perceptions of note-taking activities during listening before and after experiencing note-taking training?” a questionnaire adopted from Carrell, et al. (2002) was utilized. The results showed that students gained positive perceptions of taking notes throughout note-taking training. Students experienced note-taking training during one semester, and this seemed to result in the acquisition of self-confidence. In addition, the participants who increased their perceptions from the time of the pre-test to the time of the post-test also developed L2 listening ability more than those whose perceptions of note-taking did not improve. In the present study, therefore, it was found that positive attitudes gained by note-taking training influenced L2 listening development.

Regarding the second research question, “Is there any difference in terms of metacognitive awareness of listening before and after receiving listening instruction?” students’ responses to the MALQ (Metacognitive Awareness of Listening Questionnaire) adapted from Vandergrift, et al. (2006) was used. The analysis revealed that overall students did not raise their awareness of metacognitive listening through the listening instruction. The result in the present study showed a contrast to the research result of Vandegrift and Tafaghodtari (2010). He found that low proficient students benefited from the instruction focusing on metacognitive listening awareness; however, the participants in the current study were more advanced level ESL students who possessed over 61 on the score of TOEFL iBT. Another finding was that students gained their awareness of metacognitive listening in terms of *Person Knowledge*, which is their self-confidence in listening. They gained higher confidence throughout the listening instruction. Finally, it was found that students who raised their awareness of metacognitive listening gained higher scores on the listening tasks. Therefore, metacognitive listening strategy-focused instruction for advanced level students was helpful to overcome an affective issue in L2 listening

and be aware of how they listen in developing L2 listening ability. Finally, it was found that students who gained higher scores on the listening comprehension test used more varieties of metacognitive listening strategies than who scored lower on the listening test.

Finally, the third research question, “Did note-taking activities help participants when answering listening comprehension quizzes?” was addressed. It was found that note-taking helped L2 listeners pay closer attention to the listening task, catch important information easier, and manage affective control in L2 listening better. In contrast to the result of Carrell, et al. (2002), most of the ESL students felt that note-taking was helpful, it enabled them to listen carefully to the lecture, and they could write important items that were the answers to listening comprehension questions.

In sum, L2 learners whose second language competence is at the advanced level found more benefits from the note-taking instruction when their perceptions of taking notes changed. On the other hand, contrast to the finding by Vandegrift and Tafaghodtari (2010), the participants of the current study did not successfully increase their recognition of their metacognitive listening strategies. This may be because as their listening competence increased, they use the strategies more subconsciously. Therefore, note-taking instruction is more beneficial for high proficient L2 learners as they found practicality of taking notes, and as they reported that note-taking strategies are helpful.

Limitations of the current study

There are a number of considerable limitations in this study. First, the number of participants was too limited in to generate sufficient statistical support. The number of students who participated in the current study was 23 ESL students who attended a university in the U.S. Further research needs more students to make stronger implications.

Also, the instruction was employed in approximately four months; however, a longer period of instruction could be beneficial for making better generalizations. Interesting to note, though, that the participants indicated their perceptions on their experiences of note-taking training was not high enough at the post-instruction. Therefore, a longer instruction period might well help students' satisfaction in note-taking practice. However, further research is needed to get a clearer understanding of just what is the adequate amount of instruction since there is little research done focusing on impact of note-taking instruction.

Finally, the range of the participants' L2 proficiency was another considerable limitation. An examination of the mean and standard deviation scores of the listening comprehension tests showed that the tests were somewhat difficult for some of the participants. The mean score indicated that they achieved 9.35 in the pre-test, and 10.26 in the post-test out of total possible score of 16. Also the standard deviation scores showed a strong variance in students' achievement; 2.44 in the pre-test and 2.79 in the post-test. Moreover, their length of English learning and exposure to the English-speaking people may be another contributing factors. Therefore, some students may have felt negative impressions toward listening, and this could have caused them to respond to the questionnaires with lower scores.

Implications for teaching

Based on the research results, there are several teaching implications to be emphasized to facilitate L2 learners' learning. The teaching of note-taking seems to be beneficial to students' listening comprehension in academic contexts. Therefore, taking notes should be taught rather than having them take notes with their own note-taking strategy. Their note-taking strategies may not be developed effectively to take notes in limited time such as in class while listening to a lecture. Therefore, note-taking training should focus on format and organizational devices (e.g.

symbols and abbreviations) in particular as Carrell (2007) and Hayati & Jalilifar (2009) emphasize.

Also, a careful analysis of individual preferences for note-taking as a learning method is important. Considering their prior learning experiences and language proficiency level in listening and writing (e.g. writing speed) may be strongly beneficial to determine approaches of note-taking instruction. If taking notes is difficult while listening, slowing down the lecture speed can be helpful (Peeverly, et al., 2013). Since technological development is inevitable these days, also, integrating note-taking and technology is necessary. For instance, taking notes with a laptop in class is a practical possibility. In this case, however, technological ability of students such as typing speed and familiarity to functions of software, which is possibly used for taking notes (e.g. Word document), is a considerable factor.

As for metacognitive listening, since the listening instruction by means of academic lectures facilitated the control of their L2 listening anxiety, it may also work for their social life. In other words using other kinds of listening texts may be also beneficial for the high proficient students such as an interactive conversation, which requires other listening abilities. Successfully being aware of metacognitive listening strategies seems likely to enhance L2 learners other general communication ability such as speaking in order to have a meaningful oral conversations.

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Appendixes

Appendix A: Metacognitive Awareness Listening Questionnaire (MALQ)

Metacognitive Awareness Listening Questionnaire (MALQ)

Survey Questionnaire - Listening

Please circle ONE number for each statement.

5 = Strongly agree, 4 = Agree, 3 = Neither agree nor disagree, 2 = Disagree, 1 = Strongly disagree

1	Before I start to listen, I have a plan in my head for how I am going to listen.	1	2	3	4	5
2	I focus harder on the text when I have trouble understanding.	1	2	3	4	5
3	I find that listening in English is more difficult than reading, speaking, or writing in English.	1	2	3	4	5
4	I translate in my head as I listen.	1	2	3	4	5
5	I use the words I understand to guess the meaning of the words I don't understand.	1	2	3	4	5
6	When my mind wanders, I recover my concentration right away.	1	2	3	4	5
7	As I listen, I compare what I understand with what I know about the topic.	1	2	3	4	5
8	I feel that listening comprehension in English is a challenge for me.	1	2	3	4	5
9	I use my experience and knowledge to help me understand.	1	2	3	4	5
10	Before listening, I think of similar texts that I may have listened to.	1	2	3	4	5
11	I translate key words as I listen.	1	2	3	4	5
12	I try to get back on track when I lose concentration.	1	2	3	4	5
13	As I listen, I quickly adjust my interpretation if I realize that it is not correct.	1	2	3	4	5
14	After listening, I think back to how I listened, and about what I might do differently next time.	1	2	3	4	5
15	I don't feel nervous when I listen to English.	1	2	3	4	5
16	When I have difficulty understanding what I hear, I give up and stop listening.	1	2	3	4	5
17	I use the general idea of the text to help me guess the meaning of the words that I don't understand.	1	2	3	4	5
18	I translate word by word, as I listen.	1	2	3	4	5

19	When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess makes sense.	1	2	3	4	5
20	As I listen, I periodically ask myself if I am satisfied with my level of comprehension.	1	2	3	4	5
21	I have a goal in mind as I listen.	1	2	3	4	5

Appendix B: Note-taking Debriefing Questionnaire

Survey Questionnaire - Notetaking

Directions: We'd like to give you the opportunity to give your views about notetaking. Read each of the following statements and indicate your agreement or disagreement with the statement.

Circle the number (5, 4, 3, 2, or 1) that best describes your opinion about the statement.

5 = Strongly agree, 4 = Agree, 3 = Neither agree nor disagree, 2 = Disagree, 1 = Strongly disagree

1	Taking notes helped me to answer the questions better than if I had not been able to take notes.	5	4	3	2	1
2	Taking notes made it easier to remember the lecture information.	5	4	3	2	1
3	I felt more at ease when I could take notes than when I could not.	5	4	3	2	1
4	Taking notes made answering the test questions more difficult.	5	4	3	2	1
5	Taking notes helped me listen carefully to the lectures.	5	4	3	2	1
6	Taking notes helped me to understand the lectures.	5	4	3	2	1
7	Taking notes distracted me from paying close attention to the information in the lectures.	5	4	3	2	1
8	I wanted more time to review my notes before answering the test questions.	5	4	3	2	1
9	I found it difficult to listen to the test questions and at the same time to look for the specific information in my notes.	5	4	3	2	1
10	I used my notes when answering the test questions.	5	4	3	2	1
11	It was difficult to locate the information in my notes and then to mark the answer on the computer.	5	4	3	2	1
12	Taking notes would have helped me more if I had had to answer an essay question.	5	4	3	2	1
13	I had enough time to take as many notes as I wanted.	5	4	3	2	1
14	The questions were about things I had written down in my notes.	5	4	3	2	1
15	The lectures were too short for notetaking to help me very much.	5	4	3	2	1
16	I remembered enough of the lecture to answer the test questions without taking notes.	5	4	3	2	1
17	The lectures were too easy for notetaking to help me very much.	5	4	3	2	1
18	Taking notes was important for me to get a better score on the test.	5	4	3	2	1

19	Taking notes on a sheet of paper interfered with my concentration during the audio lectures.	5	4	3	2	1
20	The talks were too long for notetaking to help me very much.	5	4	3	2	1
21	I relied on my memory more than my notes to answer the test questions.	5	4	3	2	1
22	I have had training in developing notetaking skills in English.	5	4	3	2	1

Appendix C: Sample of the Hierarchical Structure of the Lecture

Marketing Research: Neuromarketing (5pts)

1. Why it developed (4pts)

- Irrational Buying decisions (3pts)
 - Emotional factors/irrational reasons: stronger than logical reason (2pts)
 - Ex.) price, quality info., performance, tastes (1pt)
- Now: motivations for purchases = unconscious (3pts)
 - = ppl don't realize motivations for purchases (2pts)
 - => ppl always don't know the reasons they choose to buy one product over another (2pts)
- Neuromarketing (3pts)
 - to find a scientific method to understand the target market (2pts)
 - Use of medical machines (2pts)
 - Ex.) MRI (1pt)
 - How people think, process info. about products, brands, ads (2pts)

2. How neuromarketing works (4pts)

- Show a picture to a test subject (3pts)
 - Ex.) Arnold Schwarzenegger, rock climbing, TV commercial (2pts)
- Researchers look at the person's brain (3pts)
 - Which parts of the brain are being used (2pts)
 - Patterns of activities (2pts)
- => Use different areas to do different activities (3pts)
- => different functions of the brain located (3pts)

3. Examples (4pts)

- Ex. 1) Study in 2004 (3pts)
 - Method: 2 different colas (2pts)
 - Coca Cola vs. Pepsi (1pt)
 - Result: brain = connected to the feeling of reward (2pts)
 - => brains focus on taste (1pt)
 - After the brand names were given (2pts)
 - $\frac{3}{4}$ Coca Cola, $\frac{1}{4}$ (25%) Pepsi (1pt)
 - Result: Different parts of their brain (2pts)
 - Close to personality & self-image (1pt)

- Coc.: image of brand = preference **(2pts)**
- Ex. 2) Study in Germany **(3pts)**
 - Method: MRI - how men reacted to pictures of cars **(2pts)**
 - Result: men use the back of brain **(2pts)**
 - = a part to recognize faces **(1pt)**
 - Conc: Men = the design of a car like it was a human face **(2pts)**
- Not sure exactly ppl's buying behaviors **(3pts)**

4. Future possibilities and concerns **(4pts)**

- Possibilities **(3pts)**
 - accurately and precisely read pictures of brain activity **(2pts)**
 - Understand human (consumer) feelings ad attitudes **(1pt)**
 - Predict behavior (consumer behavior) **(1pt)**
 - Neuromarketing: target market's preference/desires and needs **(2pts)**
- Concerns **(3pts)**
 - Abuse of neuromarketing **(2pts)**
 - do more than meet consumers' needs **(1pt)**
 - Marketing info: used to unconsciously influence our behavior **(1pt)**

Title = 5 points (1)

1, 2, 3... Main ideas = 4 points (4)

- Supportive ideas = 3 points (12)
- Detail information = 2 points (20)
 - Minor information = 1 point (11)

Total = 108 points

Appendix D: Answering Sheet**Listening Quiz – Answering sheet**

Listening 1
Music Appreciation Class

Listening 2
Engineering Class

Listening 3
Anthropology Class

23. _____

46. _____

29. _____

24. _____

47. _____

30. _____

25. _____ & _____

48. _____ & _____

31. _____

26. _____

49. _____

32. _____

27. _____

50. _____

33. _____

28. _____

51. _____

34. _____

