The effectiveness of English audio scripts on practicing listening comprehension
ประสิทธิผลของบทประกอบการฟังในการฝึกฟังเพื่อความเข้าใจ

Tikamporn Wuttipornpong[1]

บทคัดย่อ

บทความวิจัยนี้ตรวจสอบว่าบทประกอบการฟังภาษาอังกฤษในฐานะภาษาที่สอง (L2 English audio scripts) สามารถช่วยทำให้การฟังภาษาอังกฤษเพื่อความเข้าใจดีขึ้นมากน้อยเพียงใด และการใช้บทประกอบการฟังเป็นการช่วยหรือเป็นการรบกวนการฟังเพื่อความเข้าใจ การวิจัยเป็นแบบกลุ่มตัวอย่างเดียวที่มีการทดสอบก่อนและหลังการทดลองกับกลุ่มตัวอย่างที่เป็นนักศึกษาไทยในระดับมหาวิทยาลัย จำนวน 52 คน ซึ่งต้องฝึกการฟังเพื่อความเข้าใจพร้อมบทประกอบการฟังเป็นภาษาอังกฤษนอกชั้นเรียนเป็นเวลาเจ็ดสัปดาห์ก่อนทำแบบทดสอบหลังการทดลอง ในการทำแบบทดสอบ นักศึกษาจะต้องฟังประโยคภาษาอังกฤษจำนวนสิบประโยค และเขียนสิ่งที่ได้ยินและเข้าใจเกี่ยวกับประโยคเหล่านั้นเป็นภาษาไทย จากนั้นคำในภาษาไทยจะถูกนำมาวิเคราะห์เพื่อตรวจสอบว่า (1) คำในภาษาไทยเหล่านั้นตรงกับคำในภาษาอังกฤษคำใดซึ่งก็หมายความว่าเป็นคำที่ถูกจดจำได้ (2) คำเหล่านั้นถูกวิเคราะห์โครงสร้างทางไวยากรณ์ได้อย่างถูกต้องหรือไม่ และ (3) นักศึกษาเข้าใจข้อความเสียง (aural texts) มากน้อยเพียงใด ผลวิจัยแสดงให้เห็นว่าแม้ว่าการฝึกฟังพร้อมบทประกอบการฟังจำนวนน้อยครั้งจะไม่สามารถทำให้นักศึกษาเข้าใจข้อความเสียงได้ทั้งหมด แต่สามารถช่วยทำให้ขั้นตอนการรับรู้ (perception phase) ง่ายขึ้น โดยทำให้นักศึกษารับรู้คำศัพท์ภาษาอังกฤษได้มากขึ้นในระดับที่มีนัยสำคัญทางสถิติ และช่วยในขั้นตอนการวิเคราะห์โครงสร้างทางไวยากรณ์ (parsing phase) ในระดับที่น้อยกว่าอันเป็นผลจากระดับความรู้ภาษาอังกฤษที่แตกต่างกันของนักศึกษาแต่ละ

1 Faculty of Liberal Art, Ubon Ratchathani University

คน ผลจากแบบสอบถามความคิดเห็นแสดงให้เห็นว่านักศึกษาคิดว่าเทคนิคการฝึกการฟังแบบนี้ช่วยการฝึกได้ดีมากและบทประกอบการฟังไม่รบกวนการฟัง

คำสำคัญ: การฟังภาษาที่สองเพื่อความเข้าใจ บทประกอบการฟัง การอ่านพร้อมกับการฟัง ระดับก่อนระดับปานกลาง

Abstract

This research article examines to what extent L2 audio scripts can improve L2 listening comprehension and whether using audio scripts facilitates or interferes listening comprehension. The study was a one-group pretest and posttest design, with 52 Thai EFL university students who were required to practice listening comprehension with English audio scripts outside the classroom for seven weeks prior to taking the posttest. In completing the tests, they had to listen to ten English sentences and write down in Thai what they heard and understood about each of those sentences. Then the Thai equivalents were analyzed to find out (1) which English words they corresponded to, i.e. the students recognized them, (2) whether the words were parsed correctly, and (3) to what extent the students understood the aural texts. Results show that although a few times of practicing could not enable the students to comprehend the whole ideas in the aural texts, it could ease the perception phase by enhancing them to recognize more English words at significant levels, and ease the parsing phase to a lesser extent due to individual students' different amount of knowledge of the English language. Opinion survey results revealed that the students found this listening practicing technique very supportive and that the scripts did not interrupt the listening.

Key words: L2 listening comprehension, audio scripts, reading while listening, pre-intermediate level

1. Introduction

English has long been the compulsory foreign language taught in most Thai schools and universities and was recently declared as the official language in the ASEAN community. Thai university students are expected to be competent in all four language skills, namely reading, writing, listening and speaking, and able to communicate face-to-face adequately in English. In terms of listening skill, Thai students scarcely get exposed to aural English input and practice this skill, as they live in the learning context where Thai is dominantly used in daily life, and English is generally merely used in classrooms. As a matter of fact, Thai students learn to read English before they learn to listen to it, due to the fact that most of the class time is devoted to reading and writing skills because these skills provide a good basis for vocabulary building and are seen as crucial for searching information, academic skills, and college and future career success.

Practicing listening skill is indeed very time consuming. Thus, it will be of great benefit for students if listening comprehension skill can be practiced outside the classroom. With available advanced audio-visual devices and Internet technology, listening comprehension skill can be self-learned and self-practiced anywhere. To facilitate L2 listening comprehension skill, research suggests that reading while listening produces more satisfactory learning outcome than listening alone (Brown et al. 2008; Chang, 2009; Markham et al, 2001; Osada, 2001; Vandergrift, 2007). Thus, the present study was designed to investigate (1) to what extent self-practice of listening comprehension with audio scripts can enhance Thai EFL university students to improve their listening comprehension skill, and (2) whether the students have positive opinions toward it.

2. Literature review

Listening comprehension is basically referred to as a process in which a person perceives an aural message, assigns a meaning to it, and comprehends it (Ömer & Aslanoğlu, 2009) as well as evaluation and reaction in communication (DeVito 1995). Listening is, in fact, not just a matter of hearing some spoken information. To understand an aural text, the listener needs to structure all types of information at all text levels found in a particular string of words, i.e. sounds, grammar, vocabulary items and supra-sentential structure as well as context, i.e. the topic, the people, the purpose and the setting (Goh 2014). Like other cognitive processes, listening comprehension processing constitutes complex sub-processes, and several processing models are proposed, e.g. the parallel distributed processing (PDP) model of cognition (McClelland et al., 1986), the perception-parsing-utilization language comprehension model (Anderson, 1995), and the construction-integration model (Kintsch, 1998).

Since the present study covers only one-way listening comprehension, it adopts Anderson's (1995, cited in Goh, 2000) perception-parsing-utilization listening comprehension model as it is straightforward and explains distinct mental comprehension processes, which can differentiate L1 listener from L2 listener characteristics, and, in particular, identify different developmental stages useful for distinguishing between less-skilled L2 listeners and skilled L2 listeners. It must also be noted that this model is designed to explain how an aural text is processed and comprehended, thus, is limited to cognitive processing, and does not encompass affective factors, e.g. motivation and anxiety.

2.1 The perception-parsing-utilization listening comprehension model

Based on theoretical perspectives from cognitive psychology, Anderson (1995) proposes a three-phase cognitive framework, the perception, parsing and utilization model to explain complex cognitive processes for listening comprehension. This model is in fact used to explain L1 language comprehension; however, it can be well applied to L2 input comprehension because L1 and L2 comprehensions share several similarities as the fundamental cognitive processes are similar despite the fact that L2 learners face more linguistic and sociolinguistic difficulties (Færch & Kasper, 1986, in Goh, 2000).

According to this model, perception involves word recognition or decoding of words (Goh, 2000). When applied to listening comprehension processing, once an utterance or aural message is perceived, the perceptual processing is activated and draws the listener's attention to the input. The string of sounds are analyzed and separated into smaller sound units (words for most of the time). Depending on the individual listener's ability, some or all sounds are recognized. However, at this stage the "recognized" sounds may or may not be correct or the same as the original sounds or words. The recognized sounds are kept active in echoic short-term memory for a very short time to be further parsed for meaning. If the aural words are not recognized in time, they will be replaced by the incoming words and lost (Goh, 2000). This accounts why L2 listeners often fail to retrieve words they have learned but not often in used, or recall scattered words from the text just heard, which are not sufficient for them to make sense of the whole sentence or utterance.

Anderson (1995, in Goh, 2000) points out that beginning L2 listeners' perception ability relies very much on their L1; they tend to recognize the L2 sounds and distinguish one sound from another (e.g.

between /t/ and /d/) accurately if the sounds are existent or have a similar sound in their L1. The sound perception processing largely involves the bottom-up process of listening, and learners can automatize their ability of word recognition through practice. Once L2 listeners become independent from their natural reliance on L1 sound categories to match with L2 sounds and gain sufficient phonological knowledge of the L2 sounds, their listening ability will progress rapidly.

In the parsing phase, Anderson explains that the connected sounds are segmented into smaller units according to syntactic structures and/or semantic cues. The parsed segments are then combined again to form a meaningful mental representation, supposed to be arranged in the original sequence. At this stage, the forming of the mental representation can be influenced by the existing background knowledge or the top-down processing. L2 listeners try to segment the sounds into meaningful units, using their available phonological analysis and mental lexicon, consisting of lemmas or vocabulary knowledge, for example ORANGE = fruit, round, sour and sweet, often orange in color, countable) and lexemes or grammar knowledge, for instance part of speech, subject/object position, and morphology for plurality or tense, which often show a little difference in pronunciation.

The aural words which are recognized and successfully parsed and combined for meaning are stored in the long-term memory as propositions in the final process, utilization process. The two processes must operate fast and efficiently enough to ensure the mental representation or the literal meaning is attained (and kept in the long-term memory for later use). Otherwise, the incoming input will interrupt and replace the unfinished information.

Both the perception and the parsing phases are not linear. They interface and consult each other until the mental representation

or the meaning of the word is retrieved or discovered within the available time. The success of arriving at the meaning is not guaranteed; the two phases may exhaust and no meaning emerges.

Utilization involves top-down processing. The mental representation realized from the perception and parsing phases is created in association with the listener's existing background knowledge stored in long-term memory (Anderson, 1995, in Goh, 2000). In the utilization phase, listeners basically arrive at their own interpretation of the message usually personally meaningful to themselves in a particular context. This is because they make an interpretation or an inference using their background, pragmatic, and discourse knowledge against the context in the aural text, among other things, e.g. knowledge about the speaker, the tone of voice used in the text, or other relevant information. The utilization process can take place either at the micro level, i.e. at an utterance or part of utterance level, or the macro level, i.e. at the larger level like a string of utterances or the whole of utterances.

The three phases constitute different levels in the larger developmental process, and are divided into two levels: the low-level process and the high-level process. The low-level deals with linguistic processing and embraces the first two phases, i.e. the perception phase and the parsing phase. The high level relates to how the mental representation obtained from the low level processes may be manipulated. The three phases are not linear but all interrelated and recursive, or can even overlap in one listening incident. The information exchange between the three phases through the bottom-up and top-down processes operates recursively. Therefore, the listeners "can be making inferences from the first part of a sentence while they are already perceiving a latter part" (Anderson, 1995: 379).

According to this model, what differentiates native listeners and L2 skilled listeners from less skilled and unskilled listeners is the degree of automaticity. For the former, word recognition processing and sentence parsing processing are automatized, i.e. they are operated effortlessly in the short-term memory, leaving adequate cognitive capacity to work on the higher-level processing. For the latter who have limited linguistic and sociolinguistic knowledge, the lower-level processes are done under a lot of constraints, thus much of or even all of the short-term memory is used, leaving little or no cognitive capacity for the higher-level processing. Automaticity can be enhanced through frequent and regular practice, as this will familiarize L2 listeners with the L2 aural words, making them become more fluent listeners. Then, through frequent exposures to a large amount the aural input, fluent listeners get acquainted with more structure patterns, words and collocations, which enable them to get access to the appropriate meaning of the texts faster (Hulstijn, 2003, in Goh, 2000).

Goh (2000) applied Anderson's (1995) model to pinpoint L2 learners' listening comprehension problems at the different phases, as discussed in section 2.2.

2.2 Listening comprehension problems at different processing phases

Goh (2000) conducted a comprehensive study on language learners' listening comprehension problems. Dealing with real-time data collection, her study has provided insights into the problems through the retrospective data to trace the source of listening difficulties. Her participants were 40 undergraduate Chinese students learning English. The data were collected from weekly diaries about their learning listening and the problems encountered, group semi-structure interviews from 17 students, and an immediate retrospective

verbalization procedure based on Ericson and Simon's (1987) principles for collecting verbal data. Goh analyzed each problems emerging in relation to Anderson's (1995) perception-parsing-utilization phases of listening comprehension model. Ten common problems were identified, including five perception problems, three parsing problems, and two utilization problems.

2.2.1. The common listening comprehension problems at each phase

Analysis showed that problems at the perception phase were mainly related to recognizing sounds as words or groups of words, and listening attention. The common perception problems included (1) not recognizing words they know, even words which sounded familiar but immediate recall of meaning was not possible; (2) neglecting the next part when trying to find the meaning of the words just heard, which was an attention problem; (3) unable to segment strings of speech into words, (4) missing the beginning of texts, and (5) concentrating too hard or unable to concentrate. The problems found at the parsing phase were difficulties in developing coherence of mental representation of the parsed speech. The parsing problems included (1) quickly forgetting what is heard, (2) unable to form a mental representation from words heard, and (3) not understanding subsequent parts of input due to earlier problems. Finally, utilization problems were associated with understanding the intended message and processing the text further, due to a lack of prior knowledge or improperly applying prior knowledge. Among these, three were identified by more than half of the students, with the 'quickly forgetting what is heard' the most common, the 'not recognizing words they know' comes second and followed by the 'understanding words but not the intended message.' These findings of Goh's study indicate that most students had

difficulties in the perception phase in recognizing and retaining the heard words for the next phases. Without being able to recognize words in the speech, which is the most fundamental in the listening processing, the meaning of the message cannot be understood.

2.2.2. The plausible causes of the listening problems

Concerning the causes of the perception problems, these causes are associated with the following specific problems. As for the 'not recognizing words they know,' students reported that some words sounded familiar but immediate recall of meaning was not possible. Goh hypothesizes this is a sound-to-script relationship problem, as it is not yet automatized. In other words, the students recognized some words by sight but not by sound. She also assumes another possible cause, i.e. the students' pronunciations did not match with the accurate pronunciations.

Regarding the 'neglecting the next part when thinking about meaning' problem, this often occurred when students stopped to think about the difficult words or try to interpret part of the text. The 'quickly forgetting what is heard' problem frequently arose when the sounds were perceived and even parsed but new input interrupted before recall of words' meanings were completed. Limited capacity of short-term memory is accounted for this problems.

The above listening comprehension problems give rise to the assumption that the three phases of listening processing recur and overlap (Anderson, 1995), and have to do with the learners' limited capacity of short-term memory. That is, if learners cannot process the input fast enough, the old input will be replaced by the new input (Anderson, 1995). As such, learners are struck by several setbacks, impeding them from arriving at the words' meanings. This can be even worse if more constraints are added by the demand of handling with

the language they are not competent with (Call, 1985) or new input presented in unfamiliar words (Goh, 2000). When they have to use much of or nearly all of their cognitive processing capacity to deal with isolating the sounds and speech parsing, little cognitive capacity or even none will be left for the utilization process. The competition between learners' limited capacity of short-term memory and the speech input containing unfamiliar sounds is also the most likely explanation for other perception problems. To overcome these problems, learners need to speed up the sound perception process and carry out the parsing process fast and efficiently enough to ensure the mental representation or the literal meaning is attained as the outcome of the two phases. Importantly, this must be completed before the new input interrupts and wipes out all the information in the on-going processes.

Goh's (2000) study indicates that a major cause of listening comprehension problem at the parsing phase is that students did not get the key or content words. This is the correspondent cause to the 'unable to form a mental representation from words heard' problem. Students tended to grasp words that were familiar to them because familiar words are simple and get recognized right away, but they do not provide bits of content for overall message. With regard to the 'unable to catch the beginning of the spoken text' problem, some students reported that it was because they were not well prepared for the listening.

Concerning the cause of utilization problems, Goh asserts that they are associated with the listener's ability to make inferences from the available information and their prior, pragmatic and discourse knowledge, or respond to the intended meaning of the message. Learners may not make a correct inference or get the intended message although they have reached the literal meaning of the words.

Another possible cause is that the students failed to make use of the information they had to make inferences or interpret the key ideas in the message because they were not confident whether what they had understood was useful. In other words, they could not discern which information was important and which was not. Goh hypothesizes that this might be the result of the fact that students did not listen selectively or did not plan what to listen for, i.e. having no clear listening purpose. This problem may be caused by the students' lack of word recognition and their limited parsing ability. Learners cannot understand which words or bits of information are important if they cannot cover all or most of the words in the aural text.

2.2.3. Different listening ability and listening problems

Goh's (2000) analysis on the basis of the students' listening ability and the listening problems reported by the majority of the students showed that both low and high ability listeners shared two common problems, i.e. the 'not recognizing words they know' problem, which is at the perception phase and the 'quickly forget what is heard' problem, which is at the parsing phase. The first problem is a result of the fact that the students' "speech perception skills were [ ] not yet fully automatised" (Goh, 2000: 67), and the second problem was most likely "due to excessive demands from unfamiliar input on a limited processing capacity (ibid 67). Goh explains further that when the low-level listening processes, e.g. the sound-script and word-referent processing, are not fully automatized, only little or even no mental capacity is left for the high-level listening process to form the correct meaning in relation to the prior, pragmatic and background knowledge in the long-term memory (Goh, 2000), or to arrive at the meaning of the larger part of or the whole utterance. Second, it may be that the mental representations were substituted by the incoming input before

they were utilized. Owing to these explanations, she agrees with Call (1985) that both low-ability and high-ability listeners have limited short-term memory capacity.

Besides the shared common problems, the two groups differ in that while the high ability listeners had the 'understanding words but not the intended message,' which is at the utilization phase, the low ability ones did not. However, this does not mean that the low ability listeners were any better than the high ability ones. The low ability did not have this problem because they had not yet reached this listening processing phase. The last common problem faced by the low ability listeners was the 'neglecting the next part when thinking about meaning,' which is at the perception phase. That is, these low ability listeners were struggling at the low level listening phases, namely the perception phase and the parsing phase.

With regard to the high ability students' problem of 'understanding words but not the intended message,' it is clear that these listeners could get the literal meaning they had successfully recognized and parsed, but they could not make inferences or get the intended meanings. This indicates to the problem of their limited schemata. Regarding the 'neglecting the next part when thinking about meaning' problem of the low ability listeners, this problem was associated with attention and the strategy of fixation that low ability listeners, and even their high ability counterparts, were prone to use to process the text (Goh, 2000). Listeners were inclined to pay attention to some unimportant but difficult part of the text, e.g. thinking hard for the meaning of a word or trying to memorize some words they could recognized for later use. However, the two groups differed in that while the low ability tended to inevitably and temporarily get fixated with certain words and could not move on for the next part of the text, the high ability group could bring themselves to skip the difficult part and

continued with the listening, and so they were less likely to get disrupted for the rest of the text processing.

On the whole, when analyzing deeper in the problems, the sound perception problems are rooted from the listeners' lack of vocabulary knowledge or an underdeveloped listening vocabulary. Clearly, meager sound-script and word-referent automatization predictably results in difficulties and failures in processing the text at the perception and parsing phases, which in turn can guarantee meager or zero comprehension or desperate guesswork. To help students to tackle their listening problems and improve their listening comprehension ability, Goh follows Field's (1998) approach and insists that a series of exercises for practicing listen sub-skills according to their specific problems in short micro-listening exercises should be an effective way. Since words are not uttered in isolation but in a meaningful context, she does not give importance to minimal pairs listening activity, but activities which emphasize top-down processing strategies, e.g making inferences and elaboration, and drawing interpretations.

With regard to the sound-script and word-referent problems, she reasons that there was no indication of students' having problems with words with slightly different phonemes, she therefore reckons that word-final consonants should be more useful than minimal pair exercises. Regular word perception practice is highly recommended to reduce fixation problems.

The problems much harder to tackle is the incorrect or shallow parsing problems because parsing involves complicated mental process and because listening processing does not allow listeners to have time to make sense of the relationships between aural words which keep coming in (Goh, 2000), not to mention the listeners' imperfect language competence and anxiety to immediately respond

the interlocutor (for two-way communication case). Goh does not offer a specific approach to dealing with the parsing problems. She proposes that appropriate comprehension strategies should be used to help listeners to make most use of what they can grasp from the speech, and to cope with their imperfect processing, with the hope that such activities will also help improve the parsing processing.

2.3 Aural-written verification and L2 listening development

L2 learners have great difficulty in comprehending aural input because they live in the environment where their native languages prevail the L2 in everyday life communication; as a result, they are deprived of chances to get exposed and practice with L2 aural input, not to mention their insufficient L2 linguistic knowledge. Consequently, they often find L2 listening comprehension very challenging and, at times, discouraging, finding themselves unable to cope with fast speech and unknown words, or even recognizing words they know in the written forms. Therefore, they need some kind of support to facilitate their listening performance and encourage them to continue on listening, and the concept of using aural-written verification to assist L2 listening was introduced. The written input is used as a helper to reduce the listener's cognitive load in segmenting the utterance and recognizing individual words, which should spare more working memory capacity for the larger meaning of the utterance. However, there is some concern about using this kind of support that it might only help the listener understand the content but not develop the listener's linguistic competence. Researchers started to investigate the effects of providing external support of diverse forms, e.g. visual aids and captions, to aid L2 listening comprehension, and many studies reported positive effects that external support facilitates listening comprehension as well as develops positive psychological effects on

the learning (Chang, 2009). For the purpose of the present study, only previous studies using the written form are reviewed.

Markham et al (2001) investigated the effects of using L1, L2 and no captions on Spanish EFL university students' comprehension of a short DVD passage. The students were divided into three groups, and each group watched the DVD passage only on one of the three treatment conditions. Then all groups wrote a written summary of the passage and took a multiple choice test. Results showed that the L2 English caption group outperformed the L1 Spanish caption group, who in turn surpassed the no caption group. The L2 caption group could recall more L2 vocabulary than the L1 caption group. Markham et al hypothesized that L2 captions might have enhanced L2 reading and listening comprehension. However, Stewart and Pertusa (2004) criticized using L1 as support provision that L1 captions do not encourage L2 listeners to use their listening skills because they would rely on L1 captions and would not push themselves to understand the L2 aural texts. However, they note that L1 captions may be necessary when L2 listeners watch films spoken in intermediate or advanced L2. In contrast, they find watching films with the captions in the target language promotes L2 learning, as learners have visual reinforcement support while they are listening.

Many studies provide empirical evidence that reading while listening benefits L2 listening comprehension and listening skill development (e.g. Osada, 2001; Vandergrift, 2007) as well as L2 vocabulary acquisition (e.g. Brown et al., 2008) which is necessary for listening development. Osada (2001) examined which between the bottom-up and the top-down processing strategies would be preferably exercised by the Japanese speakers. Osada found that these L2 listeners could develop awareness of form-meaning relationships and

word recognition skills through the strategy of matching the aural texts with a transcription of the text.

Brown et al. (2008) conducted a study on the effectiveness of three different modes of input on L2 vocabulary acquisition with 35 Japanese university students of English literature. The students were grouped into three different input modes: reading only, reading while listening, and listening only. They were required to read and listen to three graded-reader stories, each contained approximately 5,500 words. Then, they took a meaning-translation test and a multiple-choice test on word recognition and word recall. Results showed that students could accidentally learned new words in all the three modes. However, the reading-while-listening group learned the most among the words tested, and the listening group learned the least. Additionally, the students also commented on the benefit of the reading-while-listening mode of input that the provided written input reduced their task of segmenting the text while they were reading along, which allowed them to have more time to access and understand the content more effectively, and consequently drew the meaning of the target words more successfully.

Based on the concept of aural-written verification as support for auditory discrimination skills in L2 listening development, Chang (2009) compared two modes of L2 listening learning, i.e. reading-while-listening (R/L) and listening only (L/O) with 84 college students. The students listened to two stories of equal length and level. Then, they took two tests, a sequencing test and a gap-filling test, and completed a short questionnaire to have their opinions on listening to the stories with different modes of input in terms of the stories' interest, length, difficulty, their attention, and their estimated comprehension rates. Results showed that the R/L group gained overall listening comprehension rate only 10% higher than the L/O group. However, the

majority of the R/L students reported that the R/L mode made their listening task easier, required shorter duration, made the stories more interesting, and made them pay much better attention. With these positive psychological effects on learning listening, Chang proposed that the R/L mode of learning could be used to improve L2 listening ability in the long run.

Vandergrift (2007) reviewed recent research studies on, for example, listening in multimedia environments, and academic listening, and looked into the development of perception skills and metacognitive knowledge in particular. Concerning the role of written transcription as support for listening comprehension, he commented that low-proficient L2 listeners received great benefit from aural-written verification stage for developing auditory discrimination skills, and high proficient listeners for refined word recognition.

Overall, it seems that written input can well serve as reinforcement support for L2 listening development, especially for low proficient L2 listeners at the stage of aural-written words verification. Equally importantly, research suggests that it helps create positive attitudes towards learning listening, making the learners want to practice listening and keep on listening. As there have been positive findings for using written scripts to facilitate listening learning, the present study was designed to determine to what extent using audio scripts as outside classroom activity may enhance Thai EFL students' listening comprehension skill, as well as how it may be developed further to offer more effective learning outcome.

3. Research method

3.1 Participants

The present study was a one-group and design. The participants were 52 Thai university students who had passed two

foundation English courses which focused on reading comprehension and some grammar knowledge necessary for understanding pre-intermediate reading texts. Because results of a standardized English proficiency test or the equivalent was not available, grades from formal assessment of their overall study achievement in their previous English course were used to estimate their English ability. Out of 52 students, 44 of earned an A, three received a B+, and only five obtained the rest lower grades. This means that almost all of the students could read pre-intermediate English texts very well.

Regarding times of practice listening comprehension with the audio scripts outside the classroom, results revealed that, on average, they practiced 3.62 times within the course of the experiment of 49 days. That is, they did the practice around three to four times before they took the posttest.

3.2 Research instruments

The study employed three research instruments to collect the data: listening texts for practice, a set of identical pretest and posttest, and an opinion survey. The listening texts for practice were of two forms: audio scripts and audio files. The text were composed using content words in the students' textbook and then turned into audio files (MP3 files). The pretest and the posttest were the same set, containing 10 sentences. However, since the participants informed that sentence 5 was too long and many reported that they could not remember the information in it, this sentence was discarded from the analysis due to the undesirable memory load. The rest of the sentences in the test were basically made up of the content words taken from two reading texts in the students' textbook. These words were rewritten into new sentences to avoid and/or minimize the possibility of students' memorizing the information of parts of the

reading texts in the textbook, and the students were informed about this. The selected words were contextualized in the same way as those in the textbook, so the meaning of the words should be familiar to the students (See the appendix). The opinion survey was designed to elicit the students' opinions on reading audio scripts while practicing listening whether it was helpful or disrupting.

3.3 Data collection

The students were required to take the pretest prior to the commencement of the course, and the seven weeks after that. In completing the test, they listened to ten English sentences (Sentence 5 was taken away from the analysis later), and wrote down what they understood in Thai. Verbatim translation was not necessary. The present study used Thai translation equivalents to the given English words and sentences because the focus was on comprehension of the messages as a whole rather than all details of words, and this method directly elicited the students' comprehension of the English aural texts.

3.4 Data analysis

For data analysis, the whole Thai translation equivalents were analyzed whether they conveyed the same messages as in the English sentences. Then, the individual Thai equivalents were further analyzed whether they corresponded to any English words, i.e. being recognized or not, correctly or incorrectly. It should be noted that only the content or lexical words, e.g. "many," "trees," and "planet," and meaningful grammatical words or units, e.g. "not," the present continuous verb form "are disappearing" rather than the gerund "disappearing," and "for" as in "for food," were analyzed. Other English words or units which were not existent or not lexically meaningful in Thai, e.g. grammatical articles were neglected. Statistics

were employed where appropriate for different analyses, as explained in section 4's sub-sections.

4. Results

The research results are presented into four sub-sections: (1) the effects of practicing listening with the audio scripts on the students' comprehension of the aural texts, (2) comparison of English word tokens recognized at the pretest and the posttest, (3) analysis of text coverage for sufficient listening comprehension, (4) increase in degrees of comprehension, and (5) students' opinions on practicing listening comprehension with audio scripts.

4.1 Effects of practicing listening with the audio scripts on the students' comprehension of the aural texts

To measure an improvement in sufficient comprehension, the number of Thai translation equivalents which contained sufficient and correct information compared to the given English sentences at the pretest and the posttest were counted and compared, using a paired t-test. The results are summarized in Table 1.

Table 1
Comparison of scores for sufficient comprehension of the aural texts at the pretest and the posttest

Test score	N	M	SD	T-value	P-value (2-tailed)
Pretest score	9	1.94	1.91	-1.967	0.55
Posttest score	9	2.37	2.28		

As shown in Table 1, the paired t-test result approached but did not reach significant level (t = -1.967, p = 0.55), meaning the average of 3.62 times of practicing listening with the audio scripts could not significantly enhance these pre-intermediate students to comprehend the aural texts adequately and correctly. As the mean scores indicate, they received considerably low scores at both the pretest and the posttest, earning 1.94 and 2.37 points out of 9 respectively.

Notwithstanding the insignificant results for sufficient comprehension of the literal message in the given aural texts, the students did show improvement in an increase of word recognition after the short-time practice.

4.2 Comparison of English word tokens recognized at the pretest and the posttest

To determine whether the practice with audio scripts significantly helped improve recognition of aural words, the numbes of the tokens of the target words, comprising content words and meaningful grammatical words, which the students recognized and translated for each sentence at the pretest and the posttest were counted and compared, using paired t-tests. The results are summarized in Table 2.

Table 2

Comparison of numbers of English word tokens recognized by the students at the pretest and the posttest

Sentence	Test	Number of word tokens	M	SD	T-value	P-value (2-tailed)
1	pretest	13	**2.37**	2.28	-7.558	***0.000
	posttest	13	**5.10**	2.82		
2	pretest	7	3.48	1.96	-4.192	***0.000
	posttest	7	4.96	2.71		
3	pretest	8	2.58	2.63	-4.371	***0.000
	posttest	8	4.13	2.92		
4	pretest	7	4.17	2.37	-0.655	0.516
	posttest	7	4.35	1.88		
6	pretest	7	**5.02**	2.08	-2.37	*0.022
	posttest	7	**5.58**	1.73		
7	pretest	12	5.42	2.83	-2.327	*0.024
	posttest	12	6.37	2.53		
8	pretest	7	2.9	1.39	-3.686	**0.001
	posttest	7	3.73	1.57		
9	pretest	6	1.27	1.16	-10.549	***0.000
	posttest	6	4.38	1.14		
10	pretest	9	4.44	2.81	-1.799	0.078
	posttest	9	4.96	2.71		
Overall	pretest	76	**31.7**	13.03	-9.285	***0.000
	posttest	76	**43.6**	15.92		

Notes: * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Based on the results in Table 2, overall, the average numbers of the word tokens recognized and translated at the posttest are significantly higher than those at the pretest ($t = -9.285$, $p < 0.001$). Specifically, the posttest results are significantly greater, at different levels of significance, than the pretest results obtained from all sentences, except those from sentences 4 and 10. The minimum average percentage of word tokens recognized is 18% for the pretest and 38% for the posttest (both from sentence 1, the longest one), while the maximum average percentage for the pretest is 72% and 80% for posttest (both from sentence 6, the shortest and least complex). The overall average percentage of recognized word tokens for the pretest is 42%, and 57% for the posttest. These results suggest that a small number of times of practicing listening comprehension with audio scripts could facilitate these Thai students to recognize English words in the aural forms which were not familiar to them earlier.

Despite statistically significant improvement of aural word recognition after practice, most students were not successful in understanding the whole literal message in the English sentences as indicated by the paired t-test result in Table 1. To reach sufficient comprehension, as research suggests, L2 listeners need to achieve at least 90% of text coverage (van Zeeland & Schmitt, 2012). The next section explores text coverage threshold for sufficient listening comprehension of aural texts by these Thai students.

4.3 Analysis of text coverage for sufficient listening comprehension

To determine a text coverage threshold for the participants to adequately comprehend the whole meaning of the sentences, the number of the English word tokens recognized and translated by the students who showed they had sufficient comprehension, i.e. grasping

correct and adequate information, e.g. who does what, were counted and converted to percentages. The results are shown in Table 3 below.

Table 3
Average number of word tokens covered for sufficient comprehension by the students

Sentence	Number of word tokens	Average number of word tokens recognized (%)
1	13	10.70 (82%)
2	7	6.58 (94%)
3	8	7.25 (91%)
4	7	6.25 (89%)
6	7	6.88 (98%)
7	12	9.67 (81%)
8	7	6.40 (91%)
9	6	5.60 (93%)
10	9	8.25 (92%)
Total	76	67.98 (94%)

Note: Sentence 5 has been discarded.

Based on the results in Table 3, the minimum average percentage of the content words and meaningful grammatical word/unit tokens in the given sentences recognized by the students is 81% while the maximum is 98%, and the average percentage is 94%. Using this result, a tentative text coverage threshold for L2 listening comprehension is 94%. Nevertheless, it must be emphasized that this

threshold includes only content or lexical words and meaningful grammatical words as explained in the research method section, and excludes closed words or grammatical words, which do not exist or do not carry lexical meaning in Thai, e.g. grammatical articles.

4.4 Increase in degrees of comprehension

As indicating earlier, an average number of 3.62 times of practice could not significantly enhance the students to reach sufficient listening comprehension, as the suggested text coverage threshold for the present study is 94%, but their average percentage of text coverage before and after the practice are only 42% and 57% in order. However, when looking more closely at the data, it is found that the practice could enable the students to grasp more of the message in the aural texts. That is, although practicing listening with the audio scripts for a few times could not significantly help increase the number of more students to get the whole message of the given sentences, it did increase the degree of comprehension of the message in all of them, as observed in their Thai translation equivalents to the words and information in the given English sentences.

For convenience of analysis concerning this point, the data are divided into four categories according to the students' degrees of correctness and completeness of comprehension: correct & complete, wrong/mostly incomplete, half correct/half complete, and no response/lack of comprehension, as shown below using some data from test item 2. However, the 'no response/lack of comprehension' category examples are not presented, as this means that students wrote noting or too few words in the test answer sheet.

Item 2. Original English sentence: *Intelligent people are confident but may not be kind.*

Examples of student's Thai translation equivalents put into categories:

Correct & complete:

(1) Student's sentence in Thai: คนที่ฉลาดมีความมั่นใจอาจไม่ใช่คนใจดี

English equivalent: Intelligent people are confident [but] may not be kind.

(2) Student's sentence in Thai: คนที่ฉลาดมีความมั่นใจแต่อาจจะไม่ใจดี

English equivalent: Intelligent people are confident but may not be kind.

Example (2) shows that the student could provide the Thai equivalent to the oral English sentence whereas example (1) illustrates that the student missed one word, "but." Overall, they both got the whole intended message.

Half correct/half complete:

(3) Student's sentence in Thai: คนฉลาดอาจไม่ใจดี

English equivalent: Intelligent people may not be kind.

(4) Student's sentence in Thai: คนที่เก่ง มักจะมีความมั่นใจแต่ไม่

(5) จำเป็นเสมอไป

English equivalent: Intelligent people are often confident but not always the case.

The students' Thai translation equivalents to the original English sentences in the 'half correct/half complete' category are mostly correct but incomplete, as shown in example (3) where the propositions '*are confident but*' were not included as existed in the original. In example (4), the student incorrectly added the propositions '*but not always the case,'* which are not existent in the original sentence.

Wrong/mostly incomplete:

(6) Student's sentence in Thai: คนฉลาด
English equivalent: Intelligent people

(7) Student's sentence in Thai: ความฉลาดของมนุษย์
English equivalent: Human intelligence

(8) Student's sentence in Thai: คนฉลาดอาจไม่ร้องไห้
English equivalent: Intelligent people may not cry.

(9) Student's sentence in Thai: ผู้คนที่ฉลาดมักจะเลือกคบผู้คนที่เหมือนกัน
English equivalent: Intelligent people tend to be attracted/make friend with people who are similar to them.

For the 'wrong/mostly incomplete' category, the students' sentences in this category either contain far too insufficient content as in (5), where only the subject of the sentence was given. In (6), the student gave an entirely wrong translation, as the topic or the subject of the sentence of the original message is 'intelligent people' not 'human intelligence.' In (7) and (8), the Thai equivalents are deficient in

terms of content, and they include words that are not mentioned in the original, resulting in the wrong proposition of the whole original English sentence. The results of the students' degrees of comprehension of the texts at the pretest and the posttest are summarized in Table 4.

Based on the results in Table 4, it is evident that the students have shown a tendency of increasing improvement in comprehension of the given aural texts in terms of both the correctness and/or the completeness of the information in the English sentences. In two-thirds of the sentence cases, i.e. in sentences 1, 2, 3, 4, 7, and 8, more students have demonstrated that they reached "correct & complete" comprehension, i.e. sufficient comprehension as a whole, at the posttest than they did at the pretest. In addition, in all cases except sentence 2, the number of the students who arrived at "half correct/half complete" comprehension increased while the number of those who showed "wrong/mostly incomplete" comprehension and "no response/lack of comprehension decreased. These results suggest that, with the help of the audio scripts, many of these students were moving from halfway comprehension or even 'wrong/mostly incomplete comprehension' towards sufficient comprehension.

4.4 Survey results

The survey was designed to obtain the students' opinions on the importance of English listening skill, their interest in practicing listening skill, and above all, practicing listening and reading the audio scripts at the same time. The students completed the survey after the course of the listening practice, and the results are presented in Table 5.

Table 4

Percentages of students' degrees of comprehension of the aural texts at the pretest and the posttest

			Degree of comprehension (%)			
Sentence	Test	N	Correct & complete	Wrong/ mostly incomplete	Half correct/ half complete	No response/ lack of comprehension
1	pretest	52	17	54	19	10
	posttest	52	23	31	46	0
2	pretest	52	17	56	27	0
	posttest	52	23	60	17	0
3	pretest	52	8	73	2	17
	posttest	52	38	58	4	0
4	pretest	52	25	46	29	0
	posttest	52	38	33	29	0
6	pretest	52	52	38	10	0
	posttest	52	46	23	31	0
7	pretest	52	2	69	23	6
	posttest	52	8	44	48	0
8	pretest	52	6	79	13	2
	posttest	52	10	54	37	0
9	pretest	52	23	37	37	4
	posttest	52	19	23	58	0
10	pretest	52	31	56	6	8
	posttest	52	31	52	13	4

Table 5

Percentages of students' opinions on simultaneously listening to aural texts and reading the audio scripts

Statement	Percentage of degree of agreement				
	1	2	3	4	no response
1. You think you have good English listening skill.	18.9	65.8	12.6	0.9	1.8
2. You think you do not have to practice listening in English because					
2.1 English listening skill is not necessary for your study now.	65.0	20.7	2.7	2.7	9.0
2.2 English listening skill is not necessary for you future career.	61.3	10.8	1.8	1.8	24.3
3. Practicing listening in English is too difficult.	9.0	54.1	33.3	1.8	1.8
4. The listening exercises in your textbook are too difficult.	6.3	56.8	32.4	4.5	0.0
5. You are not interested in practicing listening in English.	30.6	44.1	20.7	3.6	0.9
6. You want to practice listening in the English courses.	1.8	7.2	61.3	27.9	1.8
7. In practicing listening, you think that listening and reading the audio scripts at the same time will be more effective than listening alone.	0.9	9.9	31.5	57.7	0.0
8. You think that reading the audio scripts while listening facilitates your listening practice.	0.9	1.8	44.1	52.3	0.9
9. You think that reading the audio scripts while listening interrupts your concentration on the listening, making the listening practice less effective.	37.8	46.8	10.8	2.7	1.8

Notes: "1" = strongly disagree, "2" = disagree, "3" = agree, and "4" = strongly agree

According to the results in Table 5, item 1 shows that 85% (18.9% of strongly disagree and 65.8% of disagree combined) of the students thought that their English listening skill was not proficient. Item 2 reveals that 86% and 72% of the students considered English listening skill as important for their current study and their future career respectively. Items 3 and 4 are closely related, asking for their opinions about the degree of difficulty in practicing listening in English. That is, while 63% of the students felt that practicing listening in English and the listening exercises in the textbook were not difficult, about one-third of them (35% for item 3 and 37% for item 4) reported that doing so was difficult. The exercises in their textbook required them to listen (with no audio scripts) to a paragraph, long introduction of a lecture and choose one out of three multiple choices that gives the main idea of the lecture. Item 5 reveals that 75% of the students had interest in practicing listening in English while 24% did not, meaning that most of them wanted to do listening practice. Item 6 indicates that most students (89%) thought that English courses should provide opportunity for practicing listening skill. Regarding listening practice with audio scripts, item 7 shows that 89% of the students agreed and strongly agreed that practicing listening with the audio scripts would be more effective than doing it without. From item 8, 96% agreed and strongly agreed that the audio scripts made the listening practice easier. Item 9 then shows that 85% disagreed and strongly disagreed that the audio scripts would interrupt the listening practice, which confirms that the audio scripts were supportive for their listening practice.

Overall, the students had positive opinions on the importance and the practice of English listening skills for their current study and future career. They also wanted to practice listening in English despite difficulties encountered. One-third of them thought that the listening

exercises in the textbook, prompting them to listen to long aural texts with no scripts, were difficult. Most of them found practicing listening while reading the audio scripts along helpful, making the practice easier, and did not interfere with listening.

5. Discussion

Results from section 4 show significant improvement of aural word token recognition after practice and increasing degrees of text comprehension, moving from no response/lack of comprehension toward correct and complete comprehension. These results suggest that aural word perception skill can be enhanced even with small amount of practice when the aural words are reinforced by the written scripts. However, it must be noted that this rapid improvement may be only applied to listeners who can at least read pre-intermediate texts efficiently, i.e. having a relatively high amount of language knowledge, including vocabulary and grammar knowledge, necessary for making sense of the perceived input, thus lower proficiency readers may need more time of practice. The discussion of major results is divided into two sub-sections based on Anderson's (1995) model.

5.1 Constructive effect on the perception phase

Results from section 4.1, showing a significant increase of recognized aural word tokens, indicate that practicing listening comprehension with audio scripts enhances the perception phase, i.e. recognition of aural words. This is likely that the written scripts ease the task of sound-script and word-referent processing (Goh, 2000), as they serve as visual reinforcement support while listening (Stewart and Pertusa, 2004). The written scripts reduce the task of segmenting the speech into words, which allows listeners to access and process the aural input more easily and understand the content better, sparing more time for

drawing the meaning of the target words more successfully (Brown, 2008; Chang, 2009). Thus, practicing listening comprehension through the strategy of matching the aural texts with a transcription of the text seems to raise the students' awareness of word recognition skills and form-meaning relationships (Osada, 2001). However, the fact that the posttest score did not reach significant level and that the students' low average of text coverage at the posttest (57%) suggest that they were still struggling at the word perception phase.

To successfully practice listening with written support, sufficient reading ability is inevitably required. In effect, good reading ability usually also includes knowing how individual words are pronounced, without which may result in discontinuity of reading while listening, which in turn may disrupt the listening. However, recognizing written words differs from recognizing aural words in that aural words interact with each other in different ways, e.g. sound assimilation, dissimilation and liaison, which make recognizing connected sounds more difficult than recognizing connected written words.

5.2 Effect on the parsing phase

This listening comprehension practice's effectiveness in improving the students' listening processing in the parsing phase is also indicated by the results from section 4.3, showing the students' increasing degrees of text comprehension. As discussed in chapter 2, only recognizing aural words is not enough for listeners to get the meaning, either literal or intended. Without fast and complete processing in the perception and the parsing phases until the mental representation emerges, the recognized and parsed information will be interrupted and replaced by the new input (Anderson, 1995; Hulstijn, 2003). Thus, when a group of aural words representing a set of idea in the utterance is correctly translated by the learner, this means that the

aural words are not only successfully recognized but also correctly parsed. However, this does not mean that the practice with written scripts can improve the learner's language competence necessary for the parsing task. Rather, this would mean that being successful in the perception phase provides the basis necessary for the parsing phase, and that the learner must already have had adequate language knowledge for parsing the input. That is, successful word recognition in the perception phase simply brings out the learner's full competence to parse the input.

In the present study, given that the students had seen the selected words in the textbook, they seemed to have more mismatched sound-script representations prior to the practice. Then, when they got exposures to the correct pronunciations of the words together with the written support from the scripts, they fine-tuned their sound-script representations and could recognize more aural words in the sentences (Goh, 2000). That is, the practice enabled them to make most use of their existing language competence to parse and recombine the input until they come up with the literary meaning or mental representation of more words in the given sentences at the posttest.

The present study does not discuss the effect of the practice with audio scripts on the utilization phase due to the fact that the learning tasks and the pretest/posttest only prompted the students to understand literary meaning of words in the given sentences, and did not require them to make further inferences or interpretations. Also, the tasks and the tests did not demand them to react on a speaker's utterances as the tests were one-way listening.

5.3 Students' opinions towards this technique

Concerning the students' opinions toward the practice, the survey results show that the students had positive opinions on the practice and that reading the audio scripts along did not interfere with listening, instead, it facilitated their listening practice. This is so because while practicing in this mode, the students developed the awareness of matching written forms in audio-scripts and the sounds in the aural texts (Osada, 2001; Vandergrift, 2007) which eased the students' tasks of separating connected words in the aural text, allowing them to have more time to recognize the words and get the meanings more successfully (Brown et al, 2008).

6. Conclusion

The present study has shown that although practicing listening with audio scripts for three to four times could not enable the students to reach sufficient overall comprehension of the aural English texts, it did facilitate listening comprehension skill development at the perception phase in that it improved the students' ability to recognize more word token at significant levels (see section 4.2), and to a lesser extent, at the parsing phase, in which it helped the students to correctly understand more connected aural words. This is in all likelihood because the written scripts delivered visual support for the listening, thus reduced the cognitive load for sound-script and word-referent processing. The scripts also helped fine-tune the students' sound-script representations for better effective recognition of aural input later. Better recognition of the aural words in turn elicited the students' full competence in parsing the input more successfully, which led them to better comprehend the aural text as a whole. It must be emphasized that the written scripts is a shortcut but does not guarantee that it will render L2 learners to master listening skill, as

there are several factors involved, e.g. accent, fast speech and background knowledge about the topic of the text. The written scripts serve as the facilitator for the aural word perception processing and to a lesser extent the speech parsing processing as this also involve individual linguistic knowledge. Regarding the students' opinions, most of them embraced listening practice with the scripts. To them, the scripts eased sound-script verification and word-referent processing, which facilitated the listening practice. They approved that reading while listening was more effective than listening alone.

7. Recommendations for further research

It is evident that using the scripts in practicing listening is beneficial for L2 listeners. However, the low average of 3.62 times of practice suggests that the students did not seem to be encouraged enough to do more practice, i.e. more repetitions on listening practice. As a result, their sound-script and word-referent processing was not improved so much that it could enable them to recognize adequate aural words to meet text coverage threshold for sufficient comprehension of the whole text.

Now, the question is not whether or to what extent practice listening with the scripts is effective, rather it is how to make the students continue with the listening practice. To develop an effective self-practice material for listening comprehension, the self-learning task should cover in terms of both enhancing the listening processes and raising students' motivation to want to practice for more. And this could be a challenge for future research. Future research may explore the characteristics of listening tasks which should both promote learners' language ability and listening comprehension processes and their motivation. It may explore for useful aspects of an effective self-practice listening task, e.g. how those aspects should be implemented

in the task, and how students react to them. Aspects to be explored may include, e.g. effects of task size (i.e. short versus lengthy exercises) and times of exposure; the extent to which the task raises motivation to practice listening, sense of achievement and sense of responsibility; or providing L1 translation as implicit feedback for parsing and comprehension verification benchmark.

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