The Effectiveness of Explicit Instruction of Certain Decoding Skills in Improving Chinese EFL Listeners’ General Comprehension Performance

Dai Chenjun & Liu Li
Dalian University of Technology

Abstract

The importance of decoding skills has long been neglected in L2 listening classes, especially in a Chinese EFL context. To help foreign language teachers and learners see the value of decoding skill instruction, a quasi-experimental study was designed to test the effectiveness of certain decoding skills in improving learners’ general listening comprehension performance. Sixty non-English major freshmen were made the experimental group, and another 57 such students were made the control group. The intervention was 6-week-long explicit instruction of basic decoding skills, mainly based on the training framework proposed by Goh (2000). Data was collected in pre-test, post-test and delayed post-test. The results of data analysis show that the performance of both groups improved in post-test and delayed post-test. However, the experimental group made significantly greater progress in both tests. This study shows that explicit instruction of decoding skills, together with well-designed skill training, contributes to learners’ better understanding and control of the L2 listening processes and thus helps them improve their general comprehension performance. A series of recommendations for both L2 listening pedagogy and future research are also offered.

Key words: L2 listening; decoding skills; effectiveness; explicit instruction

1. Introduction

Probably because of its demanding nature, listening is often the skill that gives L2 learners the greatest difficulty and the strongest sense of frustration. As a result, many researchers turned their attention to listening strategies, in the hope of giving L2 listeners more
The Effectiveness of Explicit Instruction of Certain Decoding Skills in Improving Chinese...

control of their learning process and improving their listening performance (e.g., Field, 1998; 2004; 2008a; Goh, 2000; 2002a; Graham, 2006; Graham, Santos & Vanderplank, 2008; O’Malley, Chamot & Kupper, 1989; Vandergrift, 1997; 1999; 2002; 2003). In spite of the many achievements in listening strategies research, there seems to be a tendency to promote top-down strategies while neglecting bottom-up/decoding skills, with this being especially true in Chinese EFL instruction practice. However, top-down strategies only serve to supplement or compensate listening and too much reliance on top-down strategies might lead to the consequence that “the need for the interlanguage system to be engaged, and to have the chance to change and grow, is reduced” (Skehan, 1998: 15). Wilson (2003: 336) thus argues that “learners’ ultimate aim is to rely less on contextual guesswork, and more on hearing what was actually said”.

Motivated by the above situation in L2 listening research and instruction, a decoding skills training program, mainly based on the framework suggested by Goh (2000), was devised and a quasi-experimental study designed to test its effectiveness in a Chinese EFL context. This study aims to address the following research question: Does explicit instruction and training of certain decoding skills improve L2 listeners’ general listening comprehension performance?

2. Literature review

2.1 Listeners’ difficulties and decoding

Graham (2006) once investigated the opinions of 595 British L2 learners of French. His results show that most participants rank listening as the least successful area of L2 study. In order to ease the frustration of L2 listeners and help them out of the predicament, many researchers propose a diagnostic and remedial approach to L2 listening (e.g., Cross, 2009; Field, 2003; Goh, 2000; Graham, 2006; Wilson, 2003). One of the most interesting findings is Goh’s (2000) that out of the 10 most common listener problems eight are related to decoding (five are perception problems and three are parsing problems). This confirms Field’s statement that what makes a skilled listener is “accurate and automatic decoding, not the ability to make use of context” (2008a: 136).

Decoding involves perception and parsing processes (Anderson, 1985). Goh (2002b: 5) interprets perception as the processes that occur when listeners “hear and recognize sounds as words that they know” and parsing as the processes that occur when listeners “create a mental representation of the combined meaning of the words”. Decoding does not mean being mechanical, as the whole listening process is not only “receptive” but also “constructive” (Rost, 2002: 2). Neither does it mean that decoding involves only bottom-up, because “‘top-down’ is not always synonymous with ‘contextual’” (Field, 1999: 338) and it can also occur at word level. It is more appropriate to use “bottom-up” and “top-down” to refer to different “directions of processing” (Field, 2004: 364). Decoding difficulties could come from different sources. Field (2008a) categorizes decoding problems into two types: process problems (lack of skills) and text problems (lack of target language knowledge). Cross (2009) adds one more type to this taxonomy: intrusion
2.2 Remedies for improving decoding skills

Researchers are not content with only identifying problems; they are more interested in offering remedies.

Field (2003: 328) believes it would be helpful if teachers could demonstrate the “tentative nature” of word boundary location. Field (2008b: 48) confirms the “perseveration effect” in both L1 and L2 listening and encourages students to form, test and revise their hypotheses with incoming perceptual evidence. Rost (2002) holds the same opinion and summarizes the commonality of the Logogen Model (Morton, 1969), Cohort Model (Marslen-Wilson, 1984), TRACE Model (McClelland & Elman, 1986) and Fuzzy Logic Model (Massaro, 1994: 20) by saying that “a word is recognized when the analysis of its acoustic structure eliminates all candidates but one”. Broersma and Cutler (2008) show that word recognition involves a process of multiple activation and competition among all the possible candidates and L2 word recognition is slower because L2 listeners activate more candidates than native speakers due to their limited perception ability. They point out that a large vocabulary is extremely helpful in the avoidance of activating phantom words and in raising decoding speed and accuracy.

Mecartty (2000) investigates the correlation between lexical knowledge, grammatical knowledge and listening comprehension and shows that only lexical knowledge explains the variance in listening (14%). However, knowing a word is different from being able to recognize it in connected speech. Lynch (2009: 37) points out the importance of listening vocabulary and encourages teachers to “highlight practice in aural lexical recognition of the natural form(s) of words in connected speech—the word in the ear, rather than the word on the page”.

Earlier research also indicates that suprasegmental/prosodic features (word stress, rhythm, intonation, variation of vowel quality and syllable duration) have greater effects than segmental features (phoneme features) in intelligibility (e.g., Anderson-Hsieh, Johnson & Koehler, 1992; Derwing, Munro & Wiebe, 1998). Sanders, Neville, and Woldorff (2002) and Field (2005) show that lexical stress does play a very important role in intelligibility and that learners are already able to utilize this feature in listening. Rost (2002) points out that it is very likely that listeners process information syllable by syllable rather than phoneme by phoneme, and that the onset of a syllable is more important than coda for perception and recognition. Al-jasser’s study (2008) shows that explicit instruction on phonotactics, such as illegal consonant clusters does help lexical segmentation. Field (2003) is convinced that it is necessary to draw students’ attention to such phenomena as reduced form, assimilation, elision, resyllabification and elicitization in connected speech. Altenberg (2005: 327) finds that markedness of L2 phonology has a great effect on perception of word boundary, because “something that is more marked may be more perceptually salient”.

Most researchers agree that L2 listeners need to seek support from different sources. Rost (2002) and Lynch (2009) point out that syntactic and semantic knowledge is also involved in the decoding process and paralanguage cues and non-verbal cues also deserve attention.
2.3 A gap in the effectiveness of decoding skill training framework
One interesting thing about this line of research is that “whilst there is a considerable body of literature exploring listening strategy use, the literature related to strategy instruction is more sparse” (Macaro, Graham & Vanderplank, 2007) and there is a lack of systematic and teacher-friendly training framework. Christine Goh (2000: 70) is one of the few researchers making efforts to inform instruction. She found that “word recognition problems during perceptual processing often had to do with sound-script and word-referent automatisation” and offered a series of classroom practices for improving decoding skills. However, the effectiveness of her decoding skills training framework has not been tested, especially not in a Chinese EFL context. My research, therefore, aims to bridge this gap. It is hoped that the results of this study can better inform EFL listening teaching and learning.

3. Methods

3.1 Hypothesis
This study adopted a quasi-experimental design after taking into consideration realistic conditions and resources, in order to test the causal relationship between explicit instruction of decoding skills and students’ better performance in general comprehension tests. The independent variable was the intervention—the explicit instruction and training of a package of decoding skills mainly based on the framework of Goh (2000). Its presence and absence was expected to make a difference on the scores of the experimental group and control group in two comprehensive listening tests. The performance, operationalized as test scores of the two groups, was this study’s dependent variable.

The null hypothesis of this study was that explicit instruction and training of decoding skills will not lead to students’ improved performance in the comprehensive listening test, while the alternative hypothesis was that explicit instruction and training of decoding skills will lead to students’ improved performance in the comprehensive listening test. This was also my belief as I argue for a position for decoding/bottom-up skills instruction (e.g., Field, 2003; 2004; 2008a; Goh, 2000; Rost, 2002; Wilson, 2003).

3.2 Participants
Participants in this study were 117 non-English major freshmen enrolled by Dalian University of Technology in September 2009 (101 males and 16 females). They were top high school graduates from across China with at least six years of English learning experience. They seldom had opportunities to use English before, but most of them were highly motivated English learners.

The target population of this study was the Year 2009 non-English major freshmen in Dalian University of Technology. Convenience sampling was used for this study. Namely, I studied four intact freshmen classes (128 persons in total) taught by me. This was based on the following considerations. Firstly, convenience sampling was more realistic and easy for an intervention study in highly centralized Chinese universities. Secondly, these classes
had already had two rounds of stratified random sampling processes before intervention (carried out by the recruiting department). Thirdly, this could reduce the influence of teacher difference and save time and sources for teacher training. Fourthly, I could watch and cope with any emergent problems in the study. Lastly, freshmen were the least contaminated sample on campus.

Since more and more Chinese high school graduates choose to go to private language training schools, such as “New Orient” or “Global IELTS”, and they may have already received systematic strategies instruction and skill training before they start their college days, 11 students of this kind were identified and excluded from data collection and analysis even though they remained in their classes throughout the whole period of this study in order to ensure the validity of findings of this study. Therefore, the valid participants in this study were 117 students.

3.3 Instrument
The research instruments of this study were three different College English Test (CET) band 4 listening tests. CET is a national level standardized language proficiency test system, whose reliability and validity have been tested and improved over many years. So it could be assumed that the three tests were of the same level of difficulty. The CET 4 listening test is composed of three parts and lasts for about 35 minutes. The first two parts are all multiple-choice questions based on listening texts which take the form of either dialogues or short passages. The recording is only played once in the first two parts. The third part is a compound dictation. Students are expected to fill in 8 single words and complete 3 sentences embedded in a passage. The recording is played three times in this part. The full score of the CET 4 listening test is 35.

3.4 Data collection
Two classes were made the experimental group (n=60), and the other two were made the control group (n=57). However, in order to minimize the motivation effect, researchers told both groups that they were all participating in an experiment when asking for their consent. Data was collected at 3 time points: pre-test (beginning of the 1st week), post-test (the end of the 6th week), and delayed post-test (end of the 16th week). As could be foreseen, some highly motivated students may have tried CET 4 tests themselves before they came to college and may be more familiar with the format and degree of difficulty than others. To eliminate this effect, I gave all participants a chance to warm up and learn the format and challenges of this kind of listening test before giving the pre-test. After taking the pre-tests, the control group started receiving 90 minutes traditional audio-lingual training each week in listening classes, which included little top-down strategies instruction. Meanwhile, the experimental group were asked to finish half of their exercises after class themselves and the saved 45 minutes class time each week were used for explicit instruction and training of decoding skills. The intervention only lasted for six weeks, as its main aim was to raise the students’ awareness and guide their autonomous learning. At the end of the intervention, the first post-test was given. Then the experimental group started taking the same kind of listening classes as the control group until the end of the
semester. To investigate the lasting effect, delayed post-test, was given 10 weeks after the completion of the intervention.

3.5 Delivery of intervention
As stated above, the whole intervention only took six weeks, as its main aim was to raise the students’ awareness and guide their autonomous learning. The decoding skills training course was mainly based on Goh’s (2000:72) practice framework for improving perception and parsing skills, but it also included other researchers’ recommendations. Each session had a central theme. Some example exercises are listed in Table 1. Each session took a similar teaching cycle: awareness raising, explicit instruction, and follow-up exercise. Take Session 3 for example, the main purpose of the explicit instruction was to help the students understand that listening was a process of activating the right candidate words and then reducing these competing candidates to only one using incoming information from various sources. I first wrote "act-" on the blackboard and encouraged the students to list as many words as possible which start with “act-”, for example “actor”, “actress”, “active”, “activate”, “actually”, and “activity”. Then, I asked these students to put these words into two groups according to whether the first syllable was stressed. After that, the recording of the first syllable of “activities” was played and the students were asked whether the first syllable was stressed and which word they thought was the most likely candidate. Finally, the complete recording of “activities” was played and the right answer was announced. When the students became more aware of the tentative nature of word recognition (Field, 2003), I told them explicitly that the onset of a word can be used to activate a group of relevant words in long term memory (Rost, 2002) and that other cues like lexical stress and following syllable can be used to reduce the number of competing candidates (Broersma & Cutler, 2008; Field, 2005; Rost, 2002; Sanders, Neville & Woldorff, 2002) so that they can quickly but also accurately identify the right sound-word match. The last stage was follow-up exercises with more examples. For example, “inves-” was first written on the blackboard and students were asked what words were activated in their memory. Then, “investi-” and “investiga-” were given one after another and the students were asked if they had fewer candidates this time. Finally, the recording of “investigation” was played and students found that word recognition had become easier and faster.

Table 1. Decoding skill training framework in this study

<table>
<thead>
<tr>
<th>Week</th>
<th>Theme</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning standard pronunciation of phonetic symbols</td>
<td>Distinguish similar sounds like /a:/ and /ʌ/, /ʃ/ and /ʒ/…</td>
</tr>
<tr>
<td>2</td>
<td>From reading vocabulary to listening vocabulary</td>
<td>Pay attention to how new vocabulary items are pronounced, follow along with transcript of recording, dictate new words using recording, play response-time game using recording…</td>
</tr>
</tbody>
</table>
Week  Theme Example

3 Reducing competing candidates /æk…/ may activate a list of words like “actor”, “actress”, “active”, “activate”, “actually”, “activity”… in long term memory, but cues like stress location could help the listener exclude the first three words. Thus, decoding consumes less cognitive resources and less time. Encourage students to learn vocabulary in certain categories which facilitate efficient word activation.

4 Noticing prosodic cues and paralanguage cues Understand that speech is often uttered in short bursts/clusters/chunks with pauses and certain rhythm like “That’s aMAzing// that he survIved// SUCH a horrible accident.” Write down content words from short passages, identify the most prominent words in short utterances, identify meaning groups in sentences of varying lengths, be familiar with common phrases like “how come”, “no wonder”, “in favor of”, “in line with”…

5 Using syntactic and semantic knowledge Listeners should learn to expect an adjective or the passive voice of a verb after “He was…” and a noun as the subject of the sentence after “as a role model…”.  

6 Being aware of variation in connected speech Notice phenomena like weak forms (“does” is pronounced as /daz/), chunks (“more and more” is pronounced as /mɔrmɔr/), resyllabification (“went in” is pronounced as /wen tin/), assimilation (“whiteboard” is pronounced as /waipɔәd/), elision (“east coast” is pronounced as /i:skәust/) and cliticisation (“that’s kind of you” is pronounced in weak-strong-weak-weak pattern)…

3.6 Data Analysis
First, descriptive statistics were run to show the Mean and SD of the different tests at the three time points.

Then, in-group comparisons were performed. T-test was run to compare the scores of the two groups in the pre-test and post-test after 6 weeks of intervention. The t values and p values of the t-test would show whether the two groups’ performance in listening test improves significantly. To identify the possible lasting effect of this decoding skill training program, the scores in the pre-test and delayed post-test were also compared.

Finally, cross-group comparison, the most critical analysis, was carried out. As there may be some group difference before the experiment due to the convenience sampling method, which may influence the comparison of the two groups’ post-test and delayed post-test scores, an ANCOVA was run with the pre-test scores as the covariate. The F value and p values would show whether the score differences of the two groups in the post-test and delayed post-test were statistically significant. If the F value was not at a significant level, it would mean that the difference was probably due to chance. Then the null hypothesis could not be rejected. If the F value reached significant level, it would mean that the difference was unlikely to be due to chance. Then the null hypothesis could be
rejected and the alternative hypothesis supported. The alpha level was set at .05 for all the statistical analyses in this study.

4. Findings and discussion

4.1 Steady improvement in the post-test and delayed post-test

The descriptive statistics of the two groups in the three listening tests are presented in Table 2. Both groups improved during the period of this study, as the mean scores of the two groups show a steady increase in the last two tests.

<table>
<thead>
<tr>
<th>Table 2. Descriptive statistics of the two groups in three tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
</tr>
<tr>
<td>Post-test</td>
</tr>
<tr>
<td>Delayed post-test</td>
</tr>
</tbody>
</table>

In order to see whether this in-group progress was statistically significant, paired samples t-tests were run.

The scores of the experimental group were compared first. The results show that there was a significant difference in the pre-test ($M = 21.792$, $SD = 3.9125$) and post-test scores ($M = 24.500$, $SD = 3.3560$) for the experimental group, $t (59) = -8.674$, $p = .000 < .05$. There was also a significant difference in the pre-test ($M = 21.792$, $SD = 3.9125$) and delayed post-test scores ($M = 26.600$, $SD = 2.5140$), $t (59) = -15.313$, $p = .000 < .05$. The results of t-tests indicate that the experimental group did improve significantly after the intervention.

To test the significance level of the progress of the control group in the three tests, the same paired samples t-tests were run. The results show that the progress made by the control group in both post-test and delayed post-test were also statistically significant even though they received no intervention. In the first pair of comparison, $t (56) = -2.341$, $p = .023 < .05$, while in the second pair of comparison, $t (56) = -14.425$, $p = .000 < .05$.

This result implies that other variable(s) in addition to the intervention exerted great influence on the progress of the two groups. These variables might include the freshmen’s more constant exposure to English on university campus, systematic learning of the English language system in class, intensive exercise in and out of class, high motivation and more investment in self-directed learning.

Since the two groups share all the other variables except for the independent variable (the intervention), it is possible to eliminate the influence of all the other possible variables and examine the effect of intervention only. Therefore, an advanced cross-group statistical analysis, ANCOVA, was conducted. In this way, all the shared influence of other variables was resolved by probability.
4.2 Greater progress by the experimental group
To compare the mean scores of the control group and the experimental group while excluding the possible sampling deficits (pre-experiment difference), the advanced statistical analysis of ANCOVA was run. The possible pre-test score difference between the two groups was made the covariate. The independent/grouping variable was the intervention. The dependent variables were their scores in post-test and delayed post-test.

The post-test scores of the two groups were compared first. The mean score of the experimental group was 24.500 (n = 60, SD = 3.3560), while the mean score of the control group was 22.474 (n = 57, SD = 3.6589) (see Table 2). The result of Levene’s Test of Equality of Error Variances shows that the difference caused by grouping was not statistically significant (p = .485 > .05) and the probability of difference due to chance was 48.5%. Therefore, the grouping difference can be ignored.

The results of Test of Between-Subjects Effects show that the difference in the post-test scores between the two groups was statistically significant (F = 31.987, p = .000 < .05) and that the effect size was large (eta squared = .219).

The result of Parameter Estimates shows that the participants receiving the intervention scored 2.063 more points on average than those receiving no intervention. In other words, the null hypothesis can be rejected and the alternative hypothesis can be supported, namely, that the intervention of this study (explicit instruction of decoding skills) did lead to the experimental group’s significantly better performance in the comprehensive listening test than the control group, even though both groups made significant progress in post-test.

One thing worthy of attention is that this cross-group difference was achieved immediately after the intervention which lasted for only six weeks. This implies that the explicit instruction of decoding skills met the urgent needs of freshmen and effectively filled the gap in their language knowledge system. As Goh (2002a: 187) points out, “a key characteristic of strategic behavior is consciousness”. Explicit knowledge about the decoding process might facilitate the participants’ L2 listening in the following ways: First, a better understanding of the listening task might ease learners’ language anxiety (Goh, 2002a), which could in turn lead to improved focus on the task and better performance. Second, a better understanding of their own mental process in processing information might raise their confidence as agents and facilitate their executive control over their cognitive processes and strategy use (Vandergrift, 2002; 2003).

Next, the scores of the two groups in delayed post-test were compared. The mean score of the experimental group was 26.600 (n = 60, SD = 2.5140), while the mean score of the control group was 24.649 (n = 57, SD = 3.3300) (see Table 2). The result of Levene’s Test of Equality of Error Variances shows that the variances of the two groups were not equal (p = .015 < .05). Consequently, its Spread vs. Level Plot was checked. Since the difference in spread, about 0.8, was small with respect to the difference in level, about 2.0, it could be assumed that the variances across groups were homogenous.

The results of the Test of Between-Subjects Effects show that the intervention did have a significant effect on the two groups’ different performance (F = 55.128, p = .000 < .05) in the delayed post-test and the effect size was large (eta squared = .326). Even though
both groups continued their progress in the delayed post-test as has been discussed, the experimental group made significantly greater progress than the control group in the delayed post-test.

The results of Parameter Estimates show that the experimental group scored 1.983 more points on average than the control group. Therefore, the null hypothesis is rejected and the alternative hypothesis can be supported.

As the delayed post-test was given ten weeks after the completion of the intervention and during these ten weeks the participants of the experimental group took the same listening classes as those in the control group. The retained advantage of the experimental group over the control group indicates that the intervention (explicit instruction of decoding skills) had a lasting effect on those who received it, even ten weeks after the intervention. This is an exciting finding, as it means that explicit instruction of decoding skills can have a “once for all” effect. Once the metacognitive awareness is raised, it remains. Enriched metacognitive knowledge produces conscious learners and makes these learners more goal-oriented and better prepared for their tasks. In addition, the explicit instruction of decoding skills might have assisted participants of the experimental group in approaching self-directed exercises after class and improved the effectiveness of such exercises. Well-informed and goal-clear exercises in turn may speed up the automatization process of decoding skills and help free more cognitive resources for higher order processing and more sophisticated strategy use (Goh, 2002a; Vandergrift, 2002; 2003). All these consequences might have contributed to the experimental group’s continued better performance in the comprehension test.

5. Conclusion and implications

Despite several limitations, this is a well designed intervention study investigating the effectiveness of explicit instruction of decoding skills in Chinese EFL listening classrooms. The results show that both the experimental and the control group made significant progress in the post-test and delayed post-test. However, compared with the control group, the experimental group made significantly greater progress in these two tests. Therefore, this study shows that explicit instruction and well-structured training of decoding skills is effective in improving L2 learners’ performance in general listening comprehension tests. It shows that awareness-raising is an important aspect of L2 learning, metacognitive knowledge can directly and immediately lead to better performance, and that explicit instruction of decoding skills has a lasting effect on L2 learners' learning process and language performance.

This study contributes to L2 listening research not only by answering an important “Yes or No” question but also by offering a practical “How to” guideline. Despite the rather short duration, the intervention program adopted by this study synthesizes latest findings of L2 listening research and is proved to be effective and helpful. The six-themed training framework, ranging from phoneme distinction to connected speech recognition (see Table 1), covers most of the core issues of decoding and informs L2 listening teaching.
immediately. The suggested classroom exercises can be adopted by frontline teachers directly.

The study had limitations because of various real life constrains. Caution should be taken when generalizing the findings of this study. Firstly, no random sampling process was involved in selecting the participants, and this might leave space for some other obscuring variables. Secondly, the effects of some top-down strategy instruction and audio-lingual training was not distinguished, and this made the interpretation of the research result less accurate. Thirdly, some important sociolinguistic factors, such as region of residence and social-economic status, were not examined in this study. It is expected that these constrains can be countered in future research.

This study has several important implications for L2 listening teaching. Firstly, it showed us the great value of explicit instruction of basic decoding skills in L2 listening and the possible help we can offer our students with a well-designed decoding skills training framework. However, it should also be considered that listening is a bi-directional nonlinear process (Field, 2004) and that decoding only represents one dimension of this process, with the other dimension being top-down process. The “Information Source Model in Comprehension” developed by Anderson and Lynch (1988: 13) reminds us that comprehension is best achieved when listeners receive support from various sources. The best listening maybe the “interactive-compensatory model” proposed by Stanovich (1980) and the “crossword mode” proposed by Forster (1989). In other words, successful listeners are those who can integrate bottom-up (decoding) and top-down processes with enough flexibility. Secondly, the results of this study show that the issue of exercise effect and automatization of skills is worthy of our equal attention. The control group also made steady and significant progress in post-test and delayed post-test even though they received no intervention. The intensive exercise widely adopted by the traditional audio-lingual approach is very likely to be the main contributor to this group’s improved performance. They might not be very clear about the decoding process because of the absence of explicit instruction. However, long term repetition of proceduralized activities facilitate the process of automatization, and mental processes consume the least mental resources when they are highly automatic (DeKeyser, 2001). In other words, hard work and painstaking exercise is indispensible for L2 learners, even when many strategies and skills are available.

Due to the above reasons, it can be proposed that it would be more appropriate and practical for L2 teachers to adopt a triangle model (decoding skills instruction + top-down strategies instruction + automatization training) for L2 listening instruction, as shown in Figure 1.

![Figure 1. The proposed triangle model for L2 listening instruction](image-url)
With regard to the direction of future research, as this study only generally tested the effectiveness of a comprehensive training framework of decoding skills, focus could be placed on the investigation of the effectiveness of the individual skills and classroom activities included in this framework. To have a more complete understanding of the benefits and effects of decoding skill instruction and training, a qualitative study, such as semi-structured interviews and learner journals, could also be included later.

References


Vandergrift, L. 2002. “It was nice to see that our predictions were right”: Developing metacognition in L2 listening comprehension. *The Canadian Modern Language Review*, 58(4), 555-575.


(Copy editing: Ian Hunter)