Arab World English Journal
INTERNATIONAL PEER REVIEWED JOURNAL ISSN: 2229-9327
مجلة اللغة الانكليزية في العالم العربي

Arab World English Journal (AWEJ) Volume.8 Number 3 September, 2017 Pp. 154 -171
DOI: https://dx.doi.org/10.24093/awej/vol8no3.11

Strategies and Predictors of EFL Listening Comprehension

Abdelfattah Dimassi
Schools of Arts, Humanities, and Social Sciences
University of Sharjah, United Arab Emirates

Abstract
The purpose of this study is to compare the efficiency of two methods for teaching listening comprehension – the *cognitive strategy-based instruction method* (CSBM) and the *metacognitive strategy-based instruction method* (MetSBM). Additionally, this study aims to evaluate the way in which three co-variables – *vocabulary knowledge* (VK), *word recognition* (WR) and *working memory (WM)* – contribute to individual differences in listening comprehension. The subjects of this study, 44 female students studying on an English programme at the University of Sharjah in the United Arab Emirates (UAE), were placed in two groups and taught a range of listening comprehension strategies, in accordance with the MetSBM and the mainstream CSBM. Seven pre- and post-tests were used (a listening comprehension test (LCT), vocabulary knowledge tests (VKK1 and VKK2), the Metacognitive Awareness Listening Questionnaire (MALQ), an Aural Word Recognition test (AWR), an Orthographic Word Recognition test (OWR), a Working Memory Span test (WMS). This study considers three questions: (1) Is metacognitive teaching likely to lead to higher listening comprehension scores than the teaching of cognitive strategies, (2) Are students in the control group likely to develop metacogntive strategies on their own, and (3) Are there other variables that are likely to contribute to listening comprehension. The results suggest that the MetSBM is more effective in teaching and learning how to listen for comprehension than the CSBM. In addition, other variables – OWR, AWR, and WM contribute to listening comprehension. A number of recommendations to teachers, material developers, and researchers are provided. The present study contributes to the field of listening comprehension in an Arab context (a so far an unmapped territory). It equips English teachers with feasible ways of teaching EFL listening comprehension more efficiently.
Keywords: Cognitive, metacognitive, listening comprehension recognition, working memory

Cite as: Dimassi, A. (2017). Strategies and Predictors of EFL Listening Comprehension. *Arab World English Journal, 8* (3). DOI: https://dx.doi.org/10.24093/awej/vol8no3.11

I Introduction

1 Problem statement

Teaching listening comprehension to second language (L2) learners has changed considerably over the last few decades, yet learners still struggle with the task of language learning. L2 learners continue to face challenges inside and outside the classroom as they try to improve their listening comprehension abilities (Vandergrift & Goh, 2012). Listening is a highly complex skill, involving both linguistic and non-linguistic knowledge (Anderson, 2005; Buck, 2001).

Further complexity with regard to listening arises from the fact that the processing of different types of knowledge does not occur in a fixed linear way. Instead, various types of processing can occur simultaneously, or at any convenient sequence. In other words, listening is the result of an interaction between a number of information sources, including the acoustic input and the various types of linguistic knowledge outlined above (Buck, 2001).

Equally critical is the gap that exists between the interests of second language research and classroom practitioners. Research does not always translate into practice and despite the fact that researchers advocate that consciousness or a metacognitive awareness-raising approach to listening comprehension instruction contributes to listening comprehension, many new EFL textbooks still advocate a traditional approach to listening (Vandergrift & Goh, 2012).

2 *Significance of the study*

By researching the applicability and effectiveness of metacognitive strategies in listening comprehension instruction, the paper aims to change the way in which listening comprehension is approached in the classroom. The researcher will attempt both to provide teachers with methods that can be used in the teaching of listening and show that metacognitive strategies, previously considered too demanding to apply, can be grasped and applied to listening comprehension activities.

II Theoretical anchoring

1. Key concepts and central issues of listening comprehension

• Definition of listening comprehension

Listening comprehension is an active process of constructing meaning and this is performed by applying knowledge to the incoming sounds (Buck, 2001). Gary (1978) describes listening as an active process in which students' listening competence can be expanded by orally giving them non-verbal tasks to carry out. Lynch and Mendelsohn (2002) claim that listening comprehension consists of a variety of related processes comprising oral word recognition, perception of intonation patterns and interpretation of the relevance of what is being said to the current topic. In addition, for O'Malley and colleagues (1989), what makes listening an *active* process is that listeners focus on selected aspects of the aural input and construct meaning by relating what they hear to their prior knowledge.

• Imprtance of listening

There are four dimensions to the importance of listening – the cognitive, utility, efficiency and affective dimensions. Regarding the cognitive dimension, L2 listening plays a crucial role in the language process since listening provides learners with the input and data they receive throughout their language learning process Gary (1978).

Foreign language learners need listening as a receptive skill more than as a speaking skill (Gary, 1978; Vandergrift, 1999). Listening now constitutes a core component of language proficiency tests, it is an essential skill for university entrance exams (Richards, 2008).

Concerning the efficiency of listening, research shows that language teaching and learning should start with listening comprehension. In other words, exposure to listening before starting to produce language allows learners to learn more meaningful language used earlier in the course since learners can utilise all the limited attention resources of short-term memory (STM) to concentrate on meaning.

Regarding the psychological importance of listening, research (e.g., Vandergrift, 1999) has shown that exposure to listening prior to language production reduces pressure on learners.

2. Predictors of listening comprehension

• *Vocabulary knowledge*

Vocabulary is now recognised as a component of language proficiency as knowledge of words is the most important factor in language proficiency and school success. A major reason for this is the close relationship between vocabulary and comprehension. Moreover, vocabulary knowledge, particularly its size, is a predictor of L2 listening comprehension. It allows L2 learners to maintain the balance between the bottom-up processes for lower order ideas and the top-down processes for higher order ideas (Vermeer, 2001).

• Orthographic *word recognition*

The role of orthographic information in spoken language processing has elicited increasing interest in the field of speech perception. Nevertheless, there is still considerable debate about how precisely orthographic knowledge impacts spoken word recognition (Pattamadilok et al., 2007).

• Aural word recognition

Word recognition in fluent speech is the basis of spoken language comprehension as it is central to the decoding process (McQueen, 2007). It is only by recognising the words we hear that we can recover the speaker's full intentions.

• Anderson's (1995) model of listening comprehension with relation to word recognition

In this paper, the data relating to word recognition are analysed and presented within a cognitive model of language comprehension proposed by Anderson (1995). This model divides the listening process into three stages – perception, parsing, and utilisation. Perceptual processing is the encoding of the acoustic message. In listening, this process involves segmenting the phonemes from the continuous speech stream. During the parsing phase, meaningful mental representations are formed from words. Finally, in utilisation, listeners relate the resulting meaningful units to the information sources in long-term memory in order to interpret the intended or implied meanings.

• *Working memory*

In the present paper, Baddeley and Hitch's (1974) model of WM is adopted, as it is the most inferential one (Shanshan & Tongshan, 2007). In this model, WM refers to a limited capacity

system as the temporary storage and manipulation of input that is necessary for complex tasks such as comprehension and planning.

III The Teaching of language learning strategies

1. Cognitive strategies

Cognitive strategies involve the unconscious ways or specific learning tasks that learners use to acquire the language. Cognitive strategies help learners put together, construct, transform, elaborate, consolidate and apply L2 knowledge. In addition, they allow language learners both to process and recall new information and strengthen associations between their new and already learned information, i.e., background knowledge (Goh, 1998b; Oxford, 2011). Finally, cognitive strategies facilitate the mental structuring of input (White, 2008). The main types of cognitive strategies are inferences, elaboration, prediction, contextualisation, reconstruction, resourcing, grouping, note-taking, summarising, deduction, imagery, and transfer (Clark, 1977).

• *Cognitive strategies in the context of EFL Arab learners*

Despite all the benefits of the cognitive strategies outlined above, English as a Foreing Language
(EFL) Arab learners in the context of the present paper have not yet acquired enough strategic knowledge to allow them to compensate for their L2 linguistic deficiency. There is evidence in the literature that EFL learners have not been trained in how to control cognitive strategies despite the fact that these strategies are included in EFL textbooks that these learners have been deploying for over twelve years now.

2. Metacognitive strategies

Goh (1998b) defines metacognitive strategies as the techniques that "involve thinking about the way information is processed and stored, taking appropriate steps to manage and regulate these cognitive processes" (p. 126). The above definition is based on Flavell's (1976) definition of metacognition. Metacognitive strategies are of crucial importance in all types of learning as they assist learners to regulate or control, manage and oversee their learning processes (Oxford, 2011; Vandergrift, 1999; Wenden, 1995b).

Metacognitive strategies improve language learners' performance in a number of ways, including better use of attentional resources, better use of existing strategies and a greater awareness of comprehension breakdown (Oxford, 1990).

Metacognitive strategies include advance organisation, advance preparation, organisational planning, selective attention, strategy evaluation, self-monitoring, self-evaluation and self-management strategies (Goh, 2002b). In the present paper, the focus will be on planning, monitoring, and evaluation.

• *Metacognitive knowledge*

Metacognitive knowledge consists of three components, namely person knowledge, task knowledge, and strategic knowledge (Vandergrift & Goh, 2012). Person knowledge consists of people's beliefs about the nature of themselves and other people as cognitive processors as well as how a variety of that person knowledge influences language learning (Flavell, 1979a). Task knowledge includes knowledge of the purpose and nature or classification of the task, knowledge

about its demands (Wenden, 1995b) and knowledge regarding the procedures that constitute this task. Strategic knowledge includes knowledge about the strategies that work best and knowledge regarding how best to approach learning in general, or language learning in particular (Vandergrift, 2002).

3. Language learning strategies and listening comprehension: Previous studies

Thompson and Rubin's (1996) study was the first longitudinal classroom-based study of listening comprehension strategy training to have shown a positive result from such training. The findings of the study confirmed that strategy training, in general, and cognitive and metacognitive strategy training, in particular, improved the experimental participants' self-efficacy, which enhanced their confidence in their ability to listen to authentic Russian. Secondly, in her exploratory study, Carrier (2003) sought to confirm the hypothesis which states that focused listening strategy training allows English as a Second Language Learners (ESL) learners to improve their listening comprehension ability, which prepares them for understanding oral academic content classes. Overall, the findings showed a significant improvement in the participants' discrete and video listening ability, as well as note-taking ability, which allowed Carrier to draw a number of conclusions. Last but not least, in their empirical study, Vandergrift and Tafaghodtari (2010) investigated the effectiveness of a metacognitive process-based approach to L2 listening. The findings showed that teaching a metacognitive cycle to the experimental group participants allowed them to outperform their counterparts in the control group. Also, the less skilled participants in the experimental group showed the highest levels of improvement in their listening comprehension.

IV The study

1. Participants and setting

The subjects that participated in the study were 18-year-old female university students all from the UAE. They were divided into two groups – an experimental group and a control group, each of which consisted of 22 students. The participants belong to the Intensive English Programme (IEP) at the University of Sharjah, Khorfakkan, UAE.

2. Instructional treatment and the two adopted methods

The instructional treatment of this study comprised a two-month training programme teaching listening for comprehension using two different teaching methods. It consisted of 25 lessons for each group. All the lessons were part of the experimental and control participants' regular IEP listening comprehension classes which they attended five days a week for 50 minutes daily.

A. The metacognitive strategy-based listening comprehension instruction method (MetSBM)

The MetSBM was used with the experimental group. It is inspired by the cognitive linguistics approach to teaching listening comprehension. The aim of the MetSBM, as Vandergrift and Goh (2012) state, is to promote learners' ability to self-regulate their own learning. MetSBM attempts to enable learners to manage the process and outcome of specific listening tasks in order to maximise opportunities for comprehending and using the information they have processed". Equally important, MetSBM allows learners to select, manage, and evaluate their own listening development activities outside of formal class time.

The treatment was based on the model proposed by Goh (2000, 2010), Vandergrift and Tafaghodari (2010), Vandergrift (2004), and Vandergrift and Gogh (2012). Each week the participants took three different listening lessons (see Appendix A).

B. The cognitive strategy-based listening comprehension instruction method (CSBM)

The control participants were taught the same battery of cognitive strategies that their experimental peers learned in the first phase of the treatment. In the second phase of the treatment, however, the control participants applied the cognitive strategies that they learned in the first phase of their treatment to the textbook listening activities along the lines of the CBSM. This conventional method treats listening comprehension in three phases: pre-listening, while-listening and post-listening. The process of the cognitive strategy-based instruction is recommended by Goh (2000) (see Appendix B).

3. Study materials

i. *Oxford Quick Placement Test (OQPT)*

The OQPT was conducted in order to choose the participants who have the same level of language proficiency. It assesses reading, vocabulary, and grammar using a typical multiple choice format.

ii. *The Listening Comprehension Test (LCT)*

The LCT included 18 questions related to three short conversations selected from Tanka and Most (2009). One point was given for each correct answer. The scores range from 0 to 12 points maximum.

iii. *Vocabulary Knowledge (VKK1 and VKK2) Tests*

To test the participants' vocabulary size, Paul Nation's on-line 1000 and 2000 Level Test (version B) (http://eish, health.wits.ac.za.39=node/199) was conducted. The test includes 39 items.

iv. *The Metacognitive Awareness Listening Questionnaire (MALQ)*

The MALQ (Vandergrift et al., 2006) was conducted to assess the participants' metacognitive awareness and the perceived use of strategies while listening. The questionnaire is based on a 7-point Likert scale that ranged from 'Strongly Disagree' to 'Strongly Agree' with 1 indicating that the participants 'Strongly Disagree' and 7 that they 'Strongly Agree". It measures problem-solving, planning/evaluation, level of mental translation, personal knowledge and directed attention. The MALQ consists of 21 randomly ordered items related to L2 listening comprehension.

v. *AWR Test*

The participants in both groups took the AWR test, precisely Milton and colleagues'(2010) A_Lex test. The AWR test has a Yes/No format used to estimate the students' aural word recognition abilities. In the AWR test, each participant pressed a button on the screen in order to hear the test word as often as needed to form a judgment. In this case, the participants hadto indicate whether they know each word.

vi. *OWR Test*

To estimate the participants' orthographic word recognition (OWR), Meara and Milton's (2003) X_Lex test was used. The X_Lex test uses a Yes/No format where learners see a word on a computer screen and then, without hearing the word, they have to decide if they know it.

vii. *WMS Test*

The WMS test included two parts: a Listening Span Test and a Listening Comprehension Test. Both parts are taken together.

The Listening Span Test

The participants' working memory capacity was measured by a modified version of the Listening Span Test developed by Daneman and Carpenter (1980). The test consisted of 42 unrelated sentences divided into four groups. Group 1 included three sets of two sentences each, group 2 three sets of three sentences each, group 3 three sets of four sentences each, and group 4 three sets of five sentences each.

The Listening Comprehension Test

The Listening Comprehension test was used in conjunction with the Listening Span test to add to the complexity of the WMS test as a whole, providing it with more validity and reliability. It included three short passages and four MC questions on each passage.

4. Post-treatment instruments

Following the three-month treatment, the same pre-tests, apart from the OQPT, were immediately administered to the participants to track their progress in listening comprehension. The researcher retained the same tests and judged that the three-month period between the pre-tests and the post-tests was sufficient time to avoid such an overlap.

5. Methods of data analysis

Two non-parametrical tests were employed – The Mann-Whitney U test and the Wilcoxon sign-ranked test. The Mann-Whitney U test was used to measure the difference between the scores of the two groups independently, whereas the Wilcoxon sign-ranked test was employed to gauge paired differences. All the data were analysed using the statistical package SPSS 19.

V Results

1. Statistical analysis of the pre-treatment collected data

Overall, the analyzed data of the OQPT, LCT, VKK1 and VKK2, AWR, OWR, and WM show that there was no significant difference between the experimental and control participants prior to the study.

2. Statistical analysis of the difference between pre- and post-tests for each group separately

Experimental group

The Wilcoxon signed-rank test showed that the difference between the scores of the experimental group in all pre and post-treatment tests was statistically significant except in VKK1 test (see Appendix C).

Control group

The Wilcoxon signed-rank test showed that the difference between the scores of the control group in all pre- and post-treatment tests is statistically significant except in VKK2 test, MALQ planning/evaluation, and MALQ directed attention (see Appendix D).

3. Statistical analysis of the differences between the two groups for the post-tests predictors of listening comprehension

Results of the post-treatment tests in terms of LC, VKK2, AWR, and WM revealed that the difference between the two groups was statistically significant. However, the difference between the two groups on VKK1 and OWR was not statistically significant (see Appendix E).

MALQ

Results of the MALQ post-test in terms of planning/evaluation, problem-solving, mental translation, person knowledge, and directed attention reveal that the difference between the two groups was statistically significant (see Appendix E).

4. Multiple regression

Experimental group

The prediction model of the experimental group contained six of the ten predictors (aural word recognition, planning/evaluation, orthographic word recognition, problem-solving, directed attention, working memory). The model was statistically significant, $F(6, 15) = 45.222$, $p < .001$, and accounted for approximately 92.70% of the variance of listening comprehension ($R^2 = .948$, Adjusted $R^2 = .927$) (see Table 4.1).

Table 4.1 ***Results of the multiple regression***
(ExperimentalGroup)(N=22)

	B	Std. Error B	Beta
Constant	-37.165	4.224	
Aural word recognition	.019	.003	.760*
Planning/Evaluation	.154	.037	.369*
Oral word recognition	.005	.002	.332*
Problem-solving	.081	.038	.280*
Directed attention	.239	.075	.242*
Working memory	.126	.066	.218*

*Adjusted $R^2 = .927$, * $p < .0.001$*

Control group

The prediction model contained four of the ten predictors (aural word recognition, working memory, mental translation, person knowledge). The model was statistically significant, $F(4, 16) = 44.119$, $p<.001$, and accounted for approximately 89.60% of the variance of listening comprehension ($R^2 = .917$, Adjusted $R^2 = .896$) (see table 4.2).

Table 4.2 ***Standard multiple regression backward method results***
(control group)(N=22)

	B	Std. Error B	Beta
Constant	-25	.481	3.527
Aural word recognition	.012	.001	.668*
Working memory	.081	.017	.375*
Mental translation	.207	.103	.177*
Person knowledge	.129	.055	.149*

*Adjusted R^2 = .896, * p <.0.01*

VI Discussion

1. Hypothesis discussion

In considering the study hypothesis, the results of the post-treatment LCT suggest that the experimental participants succeeded, to a certain extent, in applying the metacognitive strategies that they were taught in the listening comprehension post-test. This was a distinct improvement over those of the pre-treatment LCT, whereas the control participants achieved a much lower mean score (7.50). Moreover, the difference between the scores of both groups on the post-treatment LCT was statistically significant (U = 3750, p < .001).

2 Discussion of research question 1

With regard to the first research question, the answer was mainly 'yes'. The MetSBM training can improve L2 listening comprehension. This confirms what other researchers have found in similar studies (e.g., Goh, 2008; Vandergrift & Tafaghodtari, 2010). In the present study, the experimental participants benefited from the MetSBM training. They became better at regulating or controlling, managing, and overseeing their listening comprehension process. These three benefits are confirmed in the literature (Oxford, 2011; Vandergrift, 1999). These results can be attributed to the various activities that the experimental participants performed during the treatment (planning/evalution, self-management, problem-solving, monitoring, problem identification).

3 Discussion of research question 2

The answer to this research question could only partially be answered in the affirmative. Two different aspects of the CSBM training allowed the control group participants to gain metacognitive awareness on their own, i.e., decrease in mental translation to L1 and person knowledge.

The CSBM training enabled the control group participants to decrease their reliance on mental translation while listening for comprehension as they improved prediction and anticipation, processing inferences, and relating new information to their prior-knowledge and to previously shared information. In addition, the CSBM training increased their working memory and enhanced their word recognition abilities. Equally important, the CSBM training allowed the control participants to become more strategic, in that they reduced their access time to meaning and used their semantic knowledge while listening for comprehension. Finally, the control participants were more effective at predicting, and anticipating incoming inputs. In addition, the final multiple regression model shows that person knowledge was a nearly significant variable that predicted the control participants' listening comprehension.

Due to the overlap between cognitive and metacognitive strategies and even though the control participants were not trained metacognitively, the explicit CSBM strategy training allowed the control participants to gain two aspects of metacognitive knowledge: task knowledge and strategic knowledge. These two types of knowledge, in addition to person knowledge, constitute the three components of metacognitive knowledge.

However, despite the overlap between the cognitive and metacognitive strategies, CSBM did not allow the control participants to get as high scores in the post-treatment LCT as those of their counterpart participants in the experimental group on the same test. Thus, there is evidence that absence of metacognitive strategies deployed in parallel to cognitive strategies prevented control participants from monitoring or controlling their use of the five cognitive strategies they deployed during listening for comprehension.

4. Discussion of Research Question 3

The answer to the third question is in the affirmative. Results of the experimental group reveal that AWR, OWR, and WM were the co-variables that had an influential impact on the experimental group. As for the control group, AWR and WM had a major impact on their performance in the post-treatment LCT.

• *The reasons behind the improved performance in word recognition of both groups*

There is evidence in the above results that the pedagogical cycle through which the experimental participants passed during the treatment contributed to their improvement in word recognition. The transcript-based activities that these students would complete at the end of the lesson acted as a reinforcement for word recognition during listening. These activities allowed them to improve at deconstructing the sections of the recording that they would find difficult to match to words. In other words, these students became more automatic at matching the oral word with its actual orthographic form in English, a task that is not easy for ESL and EFL Arab learners to do due to many factors. The major factor in this regard is that these learners would find it very difficult to recognise the written form of many familiar English words when they heard them due to the arbitrary relationship between the way these words are pronounced and the way they are spelled in English. These learners never face this problem while listening to their L1 (Arabic) as there is a regular relationship between the spelling of an Arabic word and the way it is pronounced.

The improved performance of both groups on the A_Lex and X_Lex tests shows that the potential of word recognition enabled these participants to perform more effectively on the post-treatment LCT. This is consistent with the potential contribution of word recognition to the comprehension of spoken EFL. In this respect, Jia (2010) considers word recognition in fluent speech central to the decoding process, or the parsing stage.

The increase in OWR in the experimental X_Lex post-test shows that orthographic word recognition impacted these participants' listening comprehension. This is in accordance with the results of many similar studies (e.g., Ziegler & Ferrand 1998), confirming orthographic influence in auditory word recognition. This implies that the improved performance of the participants in both groups on orthographic word recognition positively impacted the three processing stages

that constitute Anderson's (1995) model of listening comprehension, namely perception, parsing, and utilization.

With regard to aural word recognition, being the highest predictor of listening comprehension of the experimental participants, it positively impacted these participants' scores in the post-treatment LCT. This enhanced their ability to recover the speakers' intentions. There is evidence in the literature that this ability impacts L2 listening comprehension.

As for the increase in WM, the first reason behind it is related to the impact of the first phase of the treatment in addition to the CSBM training, both of which enhanced the WM processing and storing from participants in both groups. The application of the various cognitive strategies (predictions and checking predictions, inferences, elaborations, note-taking, and summarisation) enabled the participants in both groups to become more strategic while listening to the different aural inputs which impacted processing and/or storage functions of the WM during listening.

VII Conclusion

1. Summary

This study sought to compare the effectiveness of two approaches to teaching listening comprehension to Arab EFL learners – a metacognitive-based approach based on insights from metacognition and the traditional approach based on the familiar cognitive strategies – prediction, summarisation, inferencing, note-taking and elaboration. Furthermore, the study considered the relationship between vocabulary knowledge, word recognition (aural and written) and WM as co-variables and predictors of listening comprehension.

The findings from the statistical analysis confirmed the primacy of techniques inspired by metacognition over those based on familiar cognitive strategies in learning how to listen for comprehension. Specifically, four metacognitive strategies were found to contribute to listening comprehension – planning/evaluation, problem-solving, directed-attention, and a decrease in relying on mental translation. In addition, it was shown that three co-variables come into play when dealing with learning how to listen for comprehension: aural word recognition, orthographic word recognition, and WM.

Such findings give pedagogical support to the tenets of metacognition (Flavell, 1976; Wenden, 1995b) which were also confirmed by the advocates of the contribution of metacognitive strategies to listening comprehension (e.g., Goh, 1997, 1998b, 2008, 2010; Vandergrift, 2002b). Additionally, the results of my study confirm the findings of other studies using teaching methods based on the insights from metacognition (e.g., Vandergrift and Tafaghodtari, 2010).

2. Pedagogical implications

• *Pedagogical implications for teachers*

EFL listening comprehension teachers are required to teach the main stream cognitive strategies in parallel to the neglected metacognitive strategies. They can employ two types of metacognitive activities in order to help learners to engage with the process of listening – integrated experiential listening tasks and guided reflections on listening (Vandergrift and Goh, 2012). Integrated experiential listening tasks allow listeners to experience cognitive and social affective processes of listening comprehension. This can be done by helping listeners to focus

their conscious attention on to what these processes are and reveal to them how they can manage and regulate the processes consciously in order to meet their comprehension goals (Goh, 2010). Guided reflections on listening involve activities such as those based on listening diaries, anxiety and motivation charts, process-based discussions, and self-report checklists.

According to the researcher, the issue of lexical segmentation needs to be given more attention than it currently attracts in the listening classroom. Instruction should raise awareness of cases where the perceptual evidence might match more than one segmentation candidate. One way of doing so is by means of simple transcription tasks (Field, 2008a). In addition, as recommended by Field (2008a), it is worthwhile designing exercises to make learners sensitive to segmentation cues that are specific to the target language as languages appear to vary in the strategies that determine which segmentation is preferred.

Finally, teachers need to develop their learners' bottom-up skills so that all the components of the acoustic signal become meaningful units for listeners. Such skills need to include prosodic features like stress and intonation in order to influence how listeners chunk and interpret connected speech (Vandergrift, 2004).

• *Pedagogical implications for material developers*

Developers of pedagogical materials are required to apply a sound metacognitive framework for EFL listening comprehension in order to design principled metacognitive listening instructional materials that serve the purpose of metacognitive instruction which is to provide various kinds of scaffolding, allowing EFL learners to experience the processes of listening and become aware of the factors that impact overall comprehension and listening development.

• *Implications for researchers*

For researchers in the field of metacognition applicable to EFL listening comprehension to assess any aspect of cognitive and metacognitive knowledge and strategies on general terms, they should use standard definitions. Second, researchers' assessments should clearly reflect processes. In other words, researchers need to ensure that their assessment of the metacognitive strategies (planning/evaluation, problem-solving, controlled mental translation, person knowledge and directed attention) clearly reflect the process as they have defined them. Last but not least, researchers need to identify relevant theories, as any lack of research studies creates confusion in terminology and makes researchers use terms interchangeably Schunk (2001).

3 Limitations and directions for future research

The researcher thought of administering the delayed test, but due to the fact that the participants exited the IEP where I teach at the end of the semester, it was necessary to complete the treatment and the tests within one semester only. For future research, it might be worthwhile administering a delayed test after a period of six months (or even more) to measure the outcome of the strategy training on listening comprehension abilities over time.

Moreover, participants in the present study did not participate in any stimulated-recall session, which might have impacted the validity and reliability of the MALQ results. For further research, it might be worth asking participants to complete the MALQ before, while and after the

strategy training and, in addition, to participate in stimulated-recall sessions each time they complete the MALQ.

Thirdly, it should also be noted that because of the low number of items in certain factors of the MALQ, it might not be possible to generalize the findings to other settings although the results were mainly statistically significant in the present study. Future researchers might be interested in examining the effects of metacognitive awareness as measured by the MALQ and actual strategy use through the use of stimulated recall or think aloud protocols.

Fourthly, the MALQ did not require the participants to verbalize all aspects of their metacognitive knowledge. Instead, it required them to reflect only on the 19 validated statements. In addition, because the MALQ, as a questionnaire, is typically used to quantify responses and examine tendencies in research studies, it did not address individual variation in the present study. This limited the scope and impacted the validity and reliability of the results of the present study.

With regard to the predictors of listening comprehension in the present study, namely WM, word recognition and vocabulary language, further research is needed to provide more insight into understanding their impact on listening comprehension.

Equally important, the fact that vocabulary knowledge, precisely (VKK1) is not a predictor of listening comprehension in the present study suggests the need for further research.

Finally, the fact that orthographic word recognition is a predictor of listening comprehension in the present study suggests the need for further research to investigate the direction of this co-variable.

About the author

Dr. Abdelfattah Dimassi is a faculty at the School of Arts, Humanities, and Human Sciences, University of Sharjah, UAE. Prior to joining the University of Sharjah, 2007, he worked for Ajman University, UAE and several Tunisian, Omani and Emirati high schools for 21 years. His interests are TESOL, TEFL, EFL, psycholinguistics, cognitive linguistics, and applied linguistics.

VII References

Anderson, J. R. (1995). *Cognitive psychology and its implications*. New York: W. H. Freeman and Company.

Anderson, J. R. (2005). *Diagnosing foreign language proficiency: The interface between learning and assessment*. New York: Continuum.

Baddeley, A. D., & Hitch, G. (1974). Working Memory. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Vol. 8). New York: Academic Press.

Buck, G. (2001). *Assessing language*. Cambridge: Cambridge University Press.

Carrier, K. A. (2003). Improving high school English language learners' second language listening through strategy instruction. *Bilingual Research Journal, 27*(3), 383-408.

Clark, H. H. (1977). Inferences in comprehension. In D. LaBerge &S. J. Samuels (Eds.), *Basic processes in reading: Perception and comprehension* (pp. 243-263). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Daneman, M., & Carpenter, P. A. (1980). Individual differences in working memory and reading. *Journal of Verbal Learning and Verbal Behavior, 19*, 450-466.

Field, J. (2008a). Revising segmentation hypotheses in first and second language listening. *System, 36*, 35-51.

Flavell, J. H. (1976). Metacognitive aspects of problem-solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231-235). Hillsdale, NJ: Erlbaum.

Flavell, J. H. (1979a). Consciousness and Metacognition. *American Psychologist, 51*,102-116.

Flavell, J. H. (1979b). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist, 34*, 906-911.

Gary, J. O. (1978). Why speak if you don't need to? The case for a listening approach to beginning foreign language learning. In W. F. Ritchie (Ed.), *Second language acquisition research: Issues and implications*. London: Academic Press.

Goh, C. C. M. (1998b). How ESL learners with different listening abilities use comprehension strategies and tactics. *Language Teaching Research, 2*(2), 124-147.

Goh, C. C. M. (2000). A cognitive perspective on language learners' listening comprehension problems. *System, 28*, 55-75.

Goh, C. C. M. (2002b). Exploring listening comprehension tactics and their interaction patterns. *System, 30*, 185-206.

Goh, C. C. M. (2008). Metacognitive instruction for second language listening development: Theory, practice and research implications. *RELC Journal, 40*(2), 188-213.

Goh, C.C.M. (2010). Listening as process: Learning activities for self-regulation. In Nigel Harwood, *English language teaching materials: Theory and practice* (pp.179-206). Cambridge: Cambridge University Press.

Jia, L. (2010). How word recognition is affected by schema activation: An investigation through listening. *Chinese Journal of Applied Linguistics, 3*(41), 64-76.

Lynch, T., & Mendelsohn, D. (2002). Listening. In N. Schmitt, *An introduction to applied linguistics* (pp. 193-210). London: Hodder, Arnold.

McQueen, J. M. (2007). Eight questions about spoken-word recognition. In Gaskell, G. (Ed.), *The Oxford handbook of psycholinguistics* (pp. 37-53). Oxford: Oxford University Press.

Meara, P., & Milton, J. (2003). *The Swansea levels test*. Newburry: Express.

Milton, J., Wade, J., Hopkins, N. (2010). Aural word recognition and aural competence in English as a foreign language. In R., Chacon-Betron, C. Abella-Contless, & M. DelMar Torre Banca-Lopez (Eds.), *Insights into non-native vocabulary teaching and learning* (pp. 55-70). Bristol: Multilingual Matters.

O'Malley, J. M., Chamot, A. U, & Küpper, L. (1989). Listening comprehension strategies in second language acquisition. *Applied Linguistics, 10*(4), 418-437.

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Boston, Massachusetts: Heinle & Heinle Publishers.

Oxford, R. L. (2011). *Teaching and researching language learning strategies*. London: Pearson.

Pattamadilok, C., Kolinsky, R., Ventura, P., Radeau, M., & Morais, J. (2007). Orthographic representations in spoken word priming: No early activation. *Language and Speech, 50*(4), 505-531.

Richards, J. C. (2008). *Teaching listening and speaking: From theory to practice* Cambridge: Cambridge University Press.

Schunk, D. H. (2001). Social cognitive theory and self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement:*

Theoretical perspectives (pp. 125-151). Mahwah, NJ: Erlbaum.
Shanshan, G., & Tongshun, W. (2007). Study on the relationship between working memory and EFL listening comprehension. *CELEA Journal*, 30(6), 46-55.
Tanka, J., & Most, P. (2009). *Interaction 1: Listening and speaking*. Maidenhead Berkshire: McGraw-Hill Education.
Thompson, I., & Rubin, J. (1996). Can strategy instruction improve listening comprehension? *Foreign Language Annals, 29*(3), 331-341.
Vandergrift, L. (1999). Facilitating second language listening comprehension: Acquiring successful strategies. *ELT Journal, 53*(3), 168-176.
Vandergrift, L. (2002b). It was nice to see that our predictions were right: Developing metacognition in L2 listening comprehension. *The Canadian Modern Language Research, 58*,(4), 555-575.
Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics, 24*, 3-24.
Vandergrift, L., Goh, C. C. M., Mareschal, C. J., & Tafaghodtari, M. H. (2006). The Metacognitive awareness listening questionnaire: Development and validation. *Language Learning, 56*(3), 431-462.
Vandergrift, L., & Tafaghodtari, M. H. (2010). Teaching L2 learners how to listen does make a difference. *Language Learning, 60(2)*, 470-49.
Vandergrift, L. & Goh, C.C. M. (2012). *Teaching and learning second language listening: Metacognition in action*. London: Routledge.
Vermeer, A. (2001). Breadth and depth in relation to L1/L2 acquisition and frequency of input. *Applied Linguistics, 22*, 217-234.
Wenden, A. L. (1995b). *Learner strategies for learner autonomy: Planning and implementing learner training for language learners*. London: Prentice Hall.
White, G. (2008). Listening and good learners. In Carol Griffiths, (Ed), *Lessons from good language learners* (pp. 208-217). Cambridge: Cambridge University.
Ziegler, J. C., & Ferrand, L. (1998). Orthography shapes the perception of speech. *Language and Cognitive Processing, 12*, 35-39.

VIII Appendices

Appendix A MetSBM treatment

(1) Planning: In pairs, students stated their goal. They also discussed what they knew about the

topic of the listening passage and predicted the information and words/phrases they might hear. Generally speaking, at this stage, two basic listening processes were extensively applied: 'top-down' (using background knowledge and context) and 'bottom-up' (using primarily the individual words uttered).

(2) Listening 1: While the students were listening to the passage, they underlined or circled the words and/or phrases, including L1 equivalents that they had predicted correctly. They also wrote down every new piece of information they heard. After completing their predictions, students listened to the text for the first time. As they listened, they would verify their predictions by placing a check mark beside the predicted information that they may have understood.

(3) Pair process-based discussion: In pairs, the students compared what they had understood so far and explained the strategies used. They also identified the parts that caused confusion and disagreement and made notes on the parts that needed special attention in the *Listen 2*.

(4) Listening 2: The students listened to the confusing parts that had caused disagreement after the *Listen 1* and made notes on any further information they could hear.

(5) Whole-class process-based discussion: As a teacher, I led a class discussion confirming comprehension before discussing with the students the strategies they would use.

(6) Listening 3: The students who were unsuccessful in using the strategies in steps 2 and 4 could then practice using a strategy or a cluster of the strategies modelled by me with the same information.

(7) Script-sound recognition: I provided the students with a transcript of the recording and asked
them to listen for a fourth time, allowing them to match sounds to print and versa for difficult words
or phrases.

(8) Personal reflection: The students reflected on the lesson by answering some guiding questions prepared by me.

Homework: Twice a week participants in the experimental group were asked to complete a listening task, following the same pedagogical cycle and procedures they had used as well as noting how successful they felt about accomplishing the task and generally about the treatment sessions.

Appendix B: CSBM treatment

(1) Pre-listening: As a teacher, I would revisit a cognitive strategy from the first cognitive strategy training phase. I would introduce the topic of the listening passage and ask the students to say what they knew about it. I would write on the board the students' ideas and unfamiliar words. Subsequently, they would read the instructions for the listening activity.

(2) While-listening

(First Listening): I would play the recording and the students would listen
attentively and complete the activity by providing the correct written answers.

(Second Listening): I would play the recording a second time and invite the students to confirm or change their answers. Following this, I would elicit the correct answers from the students without asking them whether they had been inaccurate.

(2) Post-listening: The students would do a follow-up activity, such as writing a summary of the passage or role-playing.

Appendix C: Differences between the pre-treatment and post-treatmen Wilcoxon signed-ranks test scores for the experimental group

	Variables	Z	P
.	Listening Comprehension Test (LCT)	-4.142	<.001
.	Vocabulary Knowledge (K1) (VKK1)	-2.227	.023
.	Vocabulary Knowldege (K2) (VKK2)	-4.148	<.001
.	Working Memory Span (WMS)	-4.109	<.001

.	Aural Word Recognition (AWR)	-4.158	<.001
.	Orthographic Word Recognition (OWR)	-4.075	<.001
.	MALQ (Planning/Evaluation) (PE)	-4.135	<.001
.	MALQ (Problem-Solving) (PS)	-4.114	<.001
.	MALQ (Mental Translation) (MT)	-4.142	<.001
0.	MALQ (Person Knowledge) (PK)	-4.041	<.001
1.	MALQ (Directed Attention)	-4.128	<.001

Appendix D: Differences between the pre-treatment and post-treatment Wilcoxon signed-ranks test scores for the control group

	Variables	Z	P
.	Listening Comprehension (LC)	-3.640	<.001
.	Vocabulary Knowledge (K1) (VKK1)	-3.530	<.001
.	Vocabulary Knowledge (K2) (VKK2)	-1.000	.317
.	Working Memory Span (WMS)	-4.136	<.001
.	Aural Word Recognition (AWR)	-3.572	<.001
.	Orthographic Word Recognition (OWR)	-4.058	<.001
.	MALQ (Planning/Evaluation (PE)	-2.483	.023
.	MALQ (Problem-Solving (PS)	-2.928	<.001
.	MALQ (Mental Translation (MT)	-3.782	<.001
0.	MALQ (Person Knowledge)(PK)	-2.924	<.001
1.	MALQ (Directed Attention) (DA)	-2.514	.028

Appendix E: Statistical analysis of the differences between the two groups

for the post-tests

	Variables	U	P
.	Listening Comprehension (LC)	37.50	.001
.	Working Memory Span (WMS)	.00	.001
.	Vocabulary Knowledge (K1) (VKK1)	230.00	.001
.	Vocabulary Knowledge (K2) (VKK2)	30.00	.731
.	Aural Word Recognition (AWR)	17.50	.001
.	Orthographic Word Recognition (OWR)	217.00	.549
.	MALQ (Planning/Evaluation) (PE)	.00	.001
.	MALQ (Problem-Solving) (PS)	3.00	.001
.	MALQ (Mental Translation) (MT)	4.00	.001
0.	MALQ (Person Knowledge) (PK)	6.00	.001
1.	MALQ (Directed Attention) (DA)	5.00	.001