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Listening Strategies and L2 Listening Comprehension: Does the Test Method Matter?

Abstract

Many studies have so far tried to examine the relationship between listening strategies and listening comprehension. However, it seems that none of them have focused on the effect of the test method on the findings. The present study has investigated the issue by having 55 English language learners respond to pictorial and non-pictorial listening test items with different response formats. The listening section of the Preliminary English Test (PET) and a 36-item listening strategies questionnaire were administered in the first session and after a week's interval, the participants took a modified version of PET listening. The data were collected in a language laboratory. Several correlation and regression tests were run to investigate the relationships between listening comprehension as measured by the original and modified PET listening tests and metacognitive, cognitive and socio-affective listening strategies. The results showed that L2 learners' use of metacognitive listening strategies is the strongest predictor of listening performance. In addition, the findings indicated that the relationship between the use of listening strategies and listening performance is mediated by the kind of test method which is used for measuring L2 listening. Directions for future research and implications for practice are presented.

Keywords: listening comprehension, listening strategies, test method

Introduction

Various studies have shown that the use of strategies is associated with higher levels of L2 listening comprehension (Chien & Wei, 1998; Smidt & Hegelheimer, 2004), learners with higher listening abilities use metacognitive and cognitive strategies more effectively (Goh, 2002) and use of metacognitive and cognitive strategies significantly correlates with L2 listening proficiency (Kök, 2018). In addition, it has been claimed that language learners can greatly benefit from metacognitive instruction. For example, Vandergrift and Tafaghodtari (2010) examined the effects of a metacognitive, process-based method of teaching listening on learners' comprehension and concluded that the less skilled listeners benefit most from this process-based approach to explore the effects of metacognitive listening instruction on L2 listening comprehension pointed out that the intervention can significantly improve listening performance.

The research studies which investigated the role of listening strategies in listening comprehension, however, neglected the fact that comprehension is a dynamic process and continuously evolves in response to variations in the test methods (Bachman, 1990). In 1996, Bachman and Palmer posited that methods of testing affect test performance, and Kobayashi (2002) provided empirical support for the effect of response format on L2 learners' reading performance. In a meta-analysis of test format effects on listening and reading, In'nami and Koizumi (2009) showed that in L2 listening multiple-choice (MC) formats are easier than open-ended formats. These results are in line with the findings which revealed that the type of listening item affects L2 listeners' performance (Becker, 2016) and the type of listening test format (MC listening vs. integrated listening-to-summarize tasks) impacts listeners' use of different listening strategies (Rukthong, 2021). Despite all the empirical evidence which supports the role of item/task characteristics in L2 listening comprehension, research studies which have examined the contribution of various listening strategies to listening comprehension (Bozorgian, 2014; Kök, 2018; Maftoon & Fakhri Alamdari, 2020) have not tried to triangulate the findings by employing multiple forms of assessment. Therefore, the present study aimed to fill in these research gaps by answering the following questions:

- 1. Are listening strategies significantly related to English language learners' listening comprehension as measured by listening tests with different test methods?
- 2. Is L2 listeners' use of metacognitive strategies a significant predictor of listening strategies as measured by listening tests with different methods?

Literature Review

Second language learners utilize a variety of strategies in the process of language learning. Results of different research studies have indicated that use of these strategies is context-dependent (Huang, 2018) and is related to gender (Liyanage & Bartlett, 2012), learning style (Sahragard, Khajavi, & Abbasian, 2016), age (Tragant & Victori, 2012), shyness, anxiety, and ambiguity of tolerance (Sadeghi & Soleimani, 2016). Many studies have tried to identify these strategies and discussed the complexities involved in the use of them. Oxford (1990), for example, distinguished between direct and indirect strategies and noted that direct strategies consist of memory, cognitive and compensation strategies and indirect strategies comprise metacognitive, social, and affective strategies. Oxford (1990) also devised Strategy Inventory for Language Learning (SILL) for measuring language learners' strategy use. O'Malley and Chamot (1990) proposed another taxonomy of language learning strategies by making a three-way distinction to introduce metacognitive, cognitive, and socio-affective strategies. The models were later used to investigate language learners' use of strategies in listening, speaking, reading, and writing performance. For example, Vandergrift (1997) and Goh (2002) drew on O'Malley and Chamot's (1990) classification to present a list of listening strategies under the three broad categories of metacognitive, cognitive, and socio-affective strategies.

Metacognitive strategies have been conceptualized as part of metacognition. Flavell (1979) pointed out that metacognitive monitoring includes metacognitive knowledge or beliefs, metacognitive experiences, tasks or goals and strategies. Later conceptualizations of metacognition also included similar components (Paris & Winograd, 1990; Wenden, 1991, 1998). According to Iwai (2011), metacognition has two dimensions. The first dimension is identified with the knowledge of cognition consisting of declarative knowledge, procedural knowledge, and conditional knowledge. And the second dimension is concerned with the regulation of cognition which includes strategies associated with planning, monitoring, testing, revising, and evaluating.

Chamot and O'Malley (1987) suggested that metacognition is an essential aspect of cognitive processes which are related to the comprehension and production of language and involves planning for learning, monitoring linguistic behaviour, and evaluating achievement. Research findings have shown that the use of metacognitive strategies is significantly correlated with L2 proficiency (Khezrlou, 2012) and metacognitive instruction (Cross, 2015) has positive effects on language learners' performance in listening (Maftoon & Fakhri Alamdari, 2020; Vandergrift & Tafaghodtari, 2010). In addition, metacognitive strategy instruction has been found to affect reading comprehension (Teng, 2020) and writing performance (Forbes & Fisher, 2020). Cognitive strategies have been defined as learners' mental interactions with the input and manipulation of the materials to facilitate comprehension and learning (Chamot & O'Malley, 1987). Examples of such interactions are repetition, note-taking, analyzing, generalizing, associating words, outlining, summarizing, and using imagery (Chamot & O'Malley, 1987; Oxford, 1989; Oxford, 1990). It has been shown that cognitive strategies are significantly related to L2 proficiency (e.g., Oxford & Ehrman, 1995). In a more recent attempt, Kök (2018) provided empirical evidence that indicates use of cognitive strategies significantly contributes to listening proficiency.

Social and affective strategies have been also included in various models of language learning. O'Malley and Chamot (1990) argued that behaviours associated with this type of strategy are concerned with a person's interaction with other individuals or regulation of one's own affection. According to the authors, when learners cooperate to solve a problem or use mental techniques to diminish anxiety, they are involved in the process of using socio-affective strategies to accomplish goals in a learning task. Dreyer and Oxford (1996) reported that use of social strategies was positively linked to L2 proficiency. They also suggested that affective strategies and L2 proficiency were significantly related (Dreyer & Oxford, 1996). However, Mullins's (1992) study contradicted some of their findings as in this study it was shown that affective strategies were negatively related to some measures of L2 proficiency. Similarly, Kök (2018) concluded that the correlation between socio-affective strategies and listening proficiency was not statistically significant. Goh and Kwah (1997) reported that language learners utilize socio-affective strategies less frequently and cognitive and metacognitive strategies are used more often.

Results of studies which explored the role of different strategies in listening comprehension revealed that more proficient listeners employ a wider variety of listening strategies more effectively (e.g., Chien & Wei, 1998; Smidt & Hegelheimer, 2004). The studies have also demonstrated that metacognitive, cognitive, and socio-affective strategies directly contribute to successful listening comprehension. Vandergrift and Tafaghodtari (2010), for example, reported that learners who were given metacognitive instruction and learned how to use prediction, planning, monitoring, evaluating, and problem-solving through a process-based approach to teaching second language listening outperformed the participants in the control group. O'Malley, Chamot, and Kupper (1989) found that listeners who were less successful in listening comprehension easily lost their concentration whereas more successful listeners used inferencing, self-monitoring, and elaboration. More recently, empirical evidence in support of metacognitive instruction has been provided and it has been shown that it can enhance L2 learners' listening performance (Bozorgian, 2014; Maftoon & Fakhri Alamdari, 2020; Rahimirad & Shams, 2014).

In many studies conducted to investigate the role of listening strategies in listening comprehension, a listening test was mostly used to assess the participants' comprehension. However, it seems that the issue needs to be reexamined as various research studies have provided evidence concerning the impact of the test method on test performance (Bachman & Palmer, 1996). Bachman (1990) indicated that test tasks are concerned with the attributes of methods used for eliciting test performance and test performance can be impacted by personal attributes, communicative language ability, random elements which are unpredictable and temporary, and test method facets which cover five aspects including input, testing condition, test rubric, expected response, and the relationship between input and response. Bachman and Palmer (1996) stated that test methods are among the most significant variables attracting language measurement specialists' and instructors' attention. To investigate the issue empirically, several research studies examined the role of test methods in language learners' test performance. Yi'an (1998), for instance, conducted a retrospective study to see what listening comprehension tests measure and came to the following conclusion:

MC method posed threats to the construct validity of the test in two ways: it favoured the more advanced listeners, but put the less able at a disadvantage, and it allowed much uninformed guessing and resulted in the subjects giving the correct answers for the wrong reasons. (p. 40)

In another study In'nami and Koizumi (2009) performed a meta-analysis of the effects of open-ended and MC formats on test takers' performance. The results indicated that with a format effect of small to large open-ended tests of L1 reading and L2 listening are more difficult than L1 reading and L2 listening MC tests. In this study, the authors emphasized the role of contextual factors in the usefulness of a test and noted that there is no flawless test format that functions well in all circumstances. Rukthong (2021) also showed that the test method (MC questions vs. integrated listening-to-summarize) influences L2 learners' listening comprehension performance. According to the results of this study, integrated listening-to-summarize tasks measure listening abilities in real-life situations and L2 listeners can complete these listening tasks successfully if they depend on cognitive processing at a higher level.

The results of different research studies, therefore, suggest that the characteristics of a language test including the kind of test method affect L2 learners' listening comprehension performance (Bachman, 1990; In'nami & Koizumi, 2009). However, research studies exploring the role of strategies in listening comprehension (e.g., Kök, 2018; Maftoon & Fakhri Alamdari, 2020) did not utilize listening tests with a variety of test methods. As it was argued by Rukthong (2021), different listening abilities can be assessed by the use of different test formats and learners may rely on different kinds of listening strategies in different listening environments.

Method

Participants

The study sample consisted of 101 female and male undergraduate students who had completed high school and were enrolled in the first year of a bachelor's program in English translator training. They were in the age range of 19 to 22 and volunteered to take part in the study after completing a consent form. Convenience sampling was used to recruit the participants. Those who did not respond to all the items in the questionnaire and/or listening tests were excluded from the study. Boxplot method was used to identify and remove the outliers, which are data points that do not follow the usual pattern within the data (Riazi, 2016). Results of preliminary data analysis also showed that the relationships between strategies and listening comprehension could become statistically significant when learners who performed below the mean, 15, were removed. This might mean that the use of strategies is not significantly related to listening comprehension among learners at the lower levels of listening (e.g., Goh, 2002). Weaker relationships might also indicate that the listening test items which were relatively more difficult for the examinees with lower levels of proficiency displayed more unusual patterns of responses and were less valid for this population of test takers (Reynolds, Perkins, & Brutten, 1995). Therefore, 55 more proficient listeners who were able to answer at least 15, out of 25, listening questions correctly were finally included in the study.

Instrumentation

Several instruments were employed to measure listening comprehension and language learners' ability to use listening strategies. The listening section of PET was utilized to assess listening and the same test was adapted to see if there were any changes in the relationships between use of listening strategies and listening comprehension when the test method changed. Learners' use of listening strategies was assessed by a questionnaire adapted by Chen (2009) (Appendix A, Appendix B).

The Preliminary English Test (PET)

PET or B1 Preliminary is a standardized English test prepared by Cambridge English Language Assessment. The two versions of the test are PET and PET for School. According to the information made available through the website (see http://www.cambridgeenglish.org/exams/preliminary/), PET results show to what degree the learner has acquired the basics of English and to what extent they can use English for every day purposes. The test measures learners' comprehension of spoken materials including announcements and discussions. The listening section of the test contains 25 items which are presented in four sections.

In the first part, the participants listened to a short recording and responded to seven questions by choosing one of the three pictures. In the second section of the test, they listened to an interview with a writer and selected one of the three options which appeared before the stem. There were six questions in this part. In the third section, which contained six items, students were supposed to listen to an announcement and fill in the blanks. Finally, in the last section, they listened to a discussion and showed their comprehension by choosing 'yes' or 'no.' They were supposed to answer six questions in this part. In the present study, students' answers to the listening comprehension questions were first entered into SPSS. Then, Cronbach's alpha value was computed for the 25 listening items and a reliability score of .70 was obtained from the data collected from 94 participants who responded to all the items in the pilot stage. The listening test was, therefore, reliable (Dörnyei, 2007).

Modified Listening Tests

Since the purpose of the study was to investigate the role of listening strategies in listening comprehension as measured by listening tests with different formats, attempts were made to modify them. Therefore, the pictures which appeared in the first part of listening were replaced with words or short phrases describing the pictures. The choices were removed in the second section and, as a result, the participants responded to essay-type items after listening to an interview. With the addition of these two modified parts, six listening tests with different formats were included in the study: (1) listening section of PET as a whole (25 items), (2) MC pictorial PET (original/seven items), (3) MC non-pictorial PET (modified/seven items), (4) MC PET (original/six items), (5) essay-type PET (modified/six items), and (6) fill-in-the-blank PET (original/six items). In Figure 1, sample test items have been presented. Figure 1. Sample test items

A. A multiple choice pictorial item Where are they at the moment?



B. A multiple choice non-pictorial itemWhere are they at the moment?a: swimming pool b: park c: supermarket

C. A multiple choice itemWhat problem did Peter have in the desert?A. His vehicle broke downB. He didn't have enough waterC. He was frightened by an animalD. An essay-type itemWhat problem did Peter have in the desert?

E. Fill-in-the-blank items PLAZA CINEMA – 2.30 p.m. A programme of.....films for all the family CYCLE RACE This year's route is through the.....

After examining Skewness and Kurtosis tests for normality (see Table 2), Pearson correlation tests were run to measure the relationships between the tests. As it is displayed in Table 1, there are statistically significant correlations between performance on each subtest and the total listening score obtained through the listening section of PET (p < .01).

Correlations between Listening Section of PET, MC Pictorial PET, MC Nonpictorial PET, MC PET, Essay-type PET and Fill in the Blank PET

Test types	N of items	Listening section of PET
MC pictorial PET	7	.55**
MC non-pictorial PET	7	.55**
MC PET	6	.67**
Essay-type PET	6	.30*
Fill in the blank PET	6	.56**

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

According to Table 1, except for the essay-type listening scores, which have a weak relationship with the performance on the listening section of PET, correlations between other listening scores and performance on the listening section of PET fall within the acceptable range. As it has been suggested, when "two tests correlate with each other in the order of 0.60, we can say that they measure more or less the same thing" (Dörnyei, 2007, p. 223). The correlation results reported in Table 1 are based on the data obtained from 55 participants who were able to answer at least 15 out of 25 listening comprehension questions correctly. The data were also entered into SPSS to compute Cronbach's alpha reliability. It was found that the value for each listening test was above .60, and therefore it was concluded that the listening tests were reliable (Dörnyei, 2007).

Listening Strategy Questionnaire

The instrument utilized to collect information about listening strategies that the learners used was adapted from Vandergrift (1997) and Goh (2002) by Chen (2009), who developed a listening strategies questionnaire. Vandergrift (1997) and Goh (2002), who were inspired by O'Malley and Chamot (1990), presented a collection of metacognitive, cognitive, and socio-affective strategies in L2 listening. The questionnaire contains 36 questions and the participants can report their use of various strategies on a five-point scale: (1) almost never, (2) seldom, (3) sometimes, (4) usually, and (5) almost always. The first 16 items of the questionnaire assess metacognitive strategy use and items 17 through 32 are intended to measure cognitive strategy use preferences. The other four items are associated with learners' use of socio-affective strategies (Appendix A, Appendix B). The questionnaire was translated into learners' mother tongue considering the guidelines proposed by Dörnyei (2003). The answers provided by 55 participants in the main phase of the study were submitted to SPSS and the reliability of the data for each scale was separately calculated. The results

showed that Cronbach's alpha for metacognitive, cognitive, and socio-affective strategy use was .85, .80, and .45, respectively. The values indicate that meta-cognitive and cognitive data were quite reliable. However, the results associated with socio-affective strategies should be interpreted with caution as Cronbach's alpha fell below .60 (Dörnyei, 2007). Relatively lower reliability values of socio-affective listening strategies were also reported in other studies (e.g., Kök, 2018).

Data Collection Procedure

Before initiating the process of data collection, arrangements were made with the instructor who undertook the responsibility of administering the listening tests and the questionnaire and explanations about the study and process of collecting data were provided. The students who showed their agreement to participate in the study by completing a consent form were included in the study and were first asked to take the listening proficiency test. The listening strategy questionnaire was next distributed among them in the same session. The participants took 35 minutes to answer the listening comprehension questions. After the answer sheets were collected, the questionnaire was administered. They took 15 minutes to complete it. Finally, the modified listening test which consisted of MC non-pictorial (seven items) and essay-type (six items) subtests was administered after a week's interval. The test contained 13 (seven non-pictorial and six essay-type) listening comprehension questions which the participants answered in 20 minutes. The tests and questionnaire were administered in a language laboratory during class time. Students were wearing headphones while answering the questions in the listening tests. The listening scores were later shared with the students as the majority of them felt eager to know how well they performed on the tests.

Results

In the first stage of analysis the data were examined to identify the outliers and check normality of the distributions. Table 2 indicates skewness and kurtosis values fell within the acceptable ranges, and therefore it was concluded that normality was not violated. The table also reports the mean and standard deviation associated with each variable in the study. The mean score associated with the participants' performance on the listening section of PET was 17.96. By comparing the means associated with the essay-type PET and MC PET, it can be suggested that the participants performed less satisfactorily on the essay-type PET. In other words, essay-type PET seems to have been more difficult than MC listening PET. In addition, Table 1 provides information about learners' use of cognitive, metacognitive, and socio-affective strategies. It is evident that compared with cognitive and socio-affective strategies, metacognitive strategies were used more frequently.

Table 2

Descriptive Statistics of Listening Tests and Listening Strategies

Test types and strategies	Ν	Minimum	Maximum	Mean Std.	Deviation	Skewness	Kurtosis
Listening section of PET	55	15	22	17.96	2.11	.18	92
MC pictorial PET	55	2	7	4.27	1.09	.30	52
MC non-pictorial PET	55	1	7	4.98	1.29	44	.34
MC PET	55	2	6	4.54	.93	20	15
Essay-type PET	55	0	6	4.14	1.37	71	.26
Fill in the blank	55	2	6	4.72	1.07	52	59
Cognitive strategies	55	39	70	51.72	7.80	.14	73
Metacognitive strategies	55	40	72	57.85	8.21	14	88
Socio-affective strategies	55	7	19	12.98	2.99	05	80

The first research question probed the relationships between listening strategies and L2 listening performance. The scores were analyzed through several correlation tests and, as Table 3 shows, there are variations in the magnitude of positive correlations between different types of strategies and performance on the listening tests. According to the results, use of cognitive strategies significantly correlated with performance on MC non-pictorial PET (r = .29, p < .001). The highest correlations could be found between listeners' use of metacognitive strategies and performance on different listening tests. Metacognitive strategies and the listening section of PET significantly correlated (r = .38, p < .001) and use of these strategies was also significantly related to performance on MC nonpictorial PET (r = .38, p < .001) and MC PET (r = .27, p < .001).

Table 3

Correlation Tests between Cognitive, Metacognitive and Socio-affective Strategies and Listening Performances

Strategy	Listening section of PET	MC pictorial PET	MC non- pictorial PET	MC PET	Essay-type PET	Fill in the blank PET
Cognitive	.13	.24	.29*	05	.24	.16
Metacognitive	.38**	.27*	.38**	.27*	.12	.26
Socio-affective	.07	.04	.13	.08	.03	.22

*. Correlation is significant at the .05 level (2-tailed).

**. Correlation is significant at the .01 level (2-tailed).

The R-Squared value was also calculated for the weakest (.03) and strongest (.38) correlation using the information displayed in Table 3. The value is the square of correlation and measures the proportions of variation in the dependent variable which can be attributed to the independent variable. As it can be seen in Table 3, the R-Squared values range between .09 ($.03 \times .03$) and .14 ($.38 \times .38$). The results showed that cognitive and socio-affective strategies did not account for a large percentage of the variance in listening comprehension. Use of metacognitive strategies, however, could explain a much larger percentage of variation in the performance on most of the listening tests.

The second research question was answered by running several stepwise and hierarchical regression tests to see to what extent different kinds of listening strategies can contribute to performance on different listening tests. Linear regression which is a form of predictive modelling technique is used to identify the strength of the relationship between one or more predictor variable(s) and one dependent variable. In the present study, the results of stepwise linear regression tests revealed that use of metacognitive strategies was the only variable which could predict performance on the listening section of PET ($R^2 = .14$, F(1, 53) = 9.06, p < .01), MC non-pictorial PET ($\mathbb{R}^2 = .14, F(1, 53) = 9.14$, p < .01) and MC pictorial PET (R² = .07, F (1, 53) = 4.22, p < .05). However, the results showed the regression model which could significantly predict performance on MCPET consisted of both metacognitive and cognitive strategies. Metacognitive strategies accounted for .07 of the variance ($R^2 = .07, F(1, 53) = 4.23$, p < .05) and since cognitive strategy was not excluded, the model could finally explain .14 of the total variance ($R^2 = .14$, F (2, 52) = 4.28, p < .05). None of the variables, however, could significantly predict performance on essay-type and fill-in-the-blank listening tests (p > .05).

Hierarchical regression tests were next used to further examine the relationships. As it can be seen in Tables 4, 5, 6, 7, 8, and 9, the use of cognitive and socio-affective strategies alone was not able to predict listening performance on different listening tests, but the addition of metacognitive strategies could improve almost all the predictive models which consisted of metacognitive, cognitive, and socio-affective strategies as the independent variables and performance on the listening section of PET, MC non-pictorial PET, MC pictorial PET, MC PET, and fill in the blank PET as the dependent variables (Table 4, Table 5, Table 6, Table 8, Table 9). Metacognitive listening strategies, however, could not improve prediction of performance on the essay-type listening test (see Table 7).

As it is depicted in Table 4, when the use of metacognitive strategies is entered into the model, the R² value turns out to be .18. This significant increase in the magnitude of R² (p < .01) indicates that the variable can improve the model and predict performance on the listening section of PET.

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (Listening Section of PET)

			Adjusted	Standard	Change statistics				
Model	lodel R R square	R square	error of the estimate	R Square change	F change	df1	df2	Sig. F change	
1	.13	.01	02	2.13	.01	.46	2	52	.63
2	.43	.18	.13	1.96	.16	10.61	1	51	.00*

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: Listening section of PET

Similarly, Table 5 illustrates that much of the variance in the performance on the MC non-pictorial PET can be explained after the use of metacognitive strategies is added to the model. The change in the magnitude of shared variance R^2 is statistically significant (p < .05).

Table 5

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (MC Non-pictorial PET)

				sted Standard error uare of the estimate	Change statistics				
Model	R	R square	Adjusted R square		R square change	F change	df1	df2	Sig. F change
1	.29	.08	.04	1.26	.08	2.39	2	52	.10
2	.40	.16	.11	1.21	.08	5.04	1	51	.02*

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: MC non-pictorial PET

Table 6 provides information about the contribution of metacognitive strategies to the scores on the MC pictorial PET. As it is shown in the table, although there is an increase in the value of R^2 after the use of metacognitive strategies is added to the model, the change is not statistically significant (p > .05).

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (MC Pictorial PET)

		_			Change Statistics				
Model	R	R square	Adjusted R square	Standard error [–] of the estimate	R square change	F change	df1	df2	Sig. <i>F</i> change
1	.25	.06	.03	1.07	.06	1.82	2	52	.17
2	.33	.10	.05	1.06	.04	2.47	1	51	.12

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: MC pictorial PET

According to Table 7, the use of cognitive and socio-affective listening strategies does not significantly predict performance on the essay-type listening test. R-square change value in Table 7 also shows that adding metacognitive strategies does not significantly improve the regression model (p > .05).

Table 7

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (Essay-type PET)

	-	_	Adjusted	Standard error	Change statistics				
Model	del R R square R s	R square	square of the estimate	R square change	F change	df1	df2	Sig. <i>F</i> change	
1	.25	.06	.02	1.36	.06	1.75	2	52	.18
2	.25	.06	.00	1.37	.00	.01	1	51	.99

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: Essay-type PET

Table 8, however, provides stronger evidence in support of metacognitive strategy use. As shown in the table, the magnitude of R^2 change is statistically significant (p < .05) indicating that performance on the MC PET can be predicted if metacognitive strategy use is included in the model.

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (MC PET)

		D	Adjusted	Chandend ernen	Change Statistics				
Model	R R Adjusted S square R square o		of the estimate	R square change	F change	df1	df2	Sig. <i>F</i> change	
1	.12	.01	02	.94	.01	.41	2	52	.66
2	.38	.14	.09	.89	.12	7.69	1	51	.00*

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: MC PET

And finally, as presented in Table 9, a regression model which also consists of metacognitive strategies does not increase the R-squared value significantly (P > .05).

Table 9

R-square Values for Correlation Coefficients between Predictor Variables (Socio-affective, Cognitive, and Metacognitive Strategies) and the Dependent Variable (Fill in the Blank PET)

		R	Adiusted	Standard error	Change statistics				
Model	el R square R square of	of the estimate	R square change	F change	df1	df2	Sig. <i>F</i> change		
1	.23	.05	.01	1.06	.05	1.53	2	52	.22
2	.27	.07	.02	1.06	.02	1.11	1	51	.29

1. Predictors: Socio-affective, Cognitive

2. Predictors: Socio-affective, Cognitive, and Metacognitive

Dependent Variable: Fill in the blank PET

It can be, therefore, suggested that use of metacognitive strategies plays a determining role in predicting performance on the listening section of PET, MC non-pictorial test, and MC listening test (Table 4, Table 5, Table 8). In addition, after the use of metacognitive strategies is added to a regression model which consists of cognitive and socio-affective strategies as the independent variables and performance on the MC pictorial listening test as the dependent variable, it slightly increases the predictive power. The three kinds of strategies, however, do not predict MC pictorial test scores significantly (see Table 6). Furthermore, the results did not provide support for the higher significance of metacognitive listening strategies over cognitive and socio-affective strategies in predicting performance on essay-type and fill-in-the-blank listening tests (Table 7, Table 9).

Discussion

The findings have verified the role of metacognitive strategies which include planning, directed attention, selective attention, and monitoring (see Appendix B) in L2 listening comprehension and are consistent with those of Vogely (1995), Vandergrift and Tafaghodtari (2010), Bozorgian (2014), Wang & Treffers-Daller (2017), Kök (2018), Maftoon & Fakhri Alamdari (2020) and Becker (2021). In addition, the results support Kassem (2015) and Kök (2018) who showed that use of cognitive strategies such as inferencing, elaboration, prediction, etc. (see Appendix B) is positively related to L2 listening comprehension. The findings are also in congruence with the results indicating that use of socio-affective strategies which include cooperation and confidence building (see Appendix B) does not significantly contribute to successful L2 listening (Kassem, 2015; Kök, 2018).

Metacognitive strategies have been found to be positively related to all the measures of L2 listening. And as the regression tables indicate, this variable can make L2 listening more predictable. The use of cognitive and socio-affective strategies, however, could not predict listening performance as measured by different types of response formats although both kinds of strategies positively contribute to L2 listening. Compared with cognitive strategies, metacognitive strategies have been generally considered more important in L2 listening comprehension (Janusik & Varner, 2020). The fact that the use of metacognitive listening strategies makes a larger contribution to L2 listening comprehension might be interpreted as confirming that these strategies help learners manage and regulate cognitive processes and products during listening (Flavell, 1979; Iwai, 2011) and success of the cognitive operations under different conditions at least partly depends on learners' ability to use metacognitive listening strategies effectively.

The results also throw new light on the role of test methods in the relationship between the use of listening strategies and L2 listening comprehension. Metacognitive strategy use did not make a statistically significant contribution when it was added to increase the predictive power of regression models which included performance on essay-type and fill-in-the-blank listening test. This might have been due to the fact that assessment of listening through these tasks does not seem to be merely related to listening comprehension and other skills such as writing and reading seem to contribute to learners' performance on these listening tests. However, items containing multiple choice response formats seem to elicit information about learners' listening ability as in the process of listening learners are not supposed to read and/or write to show their comprehension.

The study has presented evidence in support of the robust role of metacognitive listening strategies in listening comprehension especially when it is assessed through multiple choice tests. This is partly confirmed by the results of other studies which used a variety of listening tests to assess L2 listening and reported varying degrees of positive relationships (Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006; Kassem, 2015; Vogely, 1995; Wang & Treffers-Daller, 2017). In other words, as it has been theorized and empirically shown test method affects test performance (Bachman, 1990; Bachman & Palmer, 1990; In'nami & Koizumi, 2009; Kobayashi, 2002). Accordingly, the results of the present study showed that metacognitive listening strategies might play a less important role if listening comprehension ability is assessed through writing and/or reading tasks.

Considering the fact that different listening tests might measure different listening abilities (Becker, 2016; Rukthong, 2021), follow up research may investigate the effects of other test methods on the results. The findings are also restricted to lower intermediate and intermediate EFL learners and therefore it is recommended that future research also investigate combined effects of the test method and proficiency level on the relationships between L2 listening strategies and listening comprehension. And since the construct of listening comprehension also embraces a test input aspect (e.g., Monteiro & Kim, 2020), future studies may focus on the nature of the relationships between L2 listening strategies and listening tests with a variety of input characteristics.

Conclusions

The study investigated the predictive power of metacognitive, cognitive, and socio-affective listening strategies as three independent variables on English language learners' performance on different listening tests. The results provided empirical evidence in support of the superior role metacognitive strategies play in the process of listening (Vogely, 1995; Wang & Treffers-Daller, 2017). Cognitive strategies were shown to be related to listening performance but the results indicated that they play a less important role (Kök, 2018). Socio-affective strategies, however, did not contribute to L2 listening significantly. Another finding of the study was that the relationships between listening strategies and comprehension are mediated by the type of test methods (Bachman, 1990;

Rukthong, 2021) as the results of correlation and regression tests revealed that metacognitive listening strategies can significantly improve our prediction of listening performance especially if the test takers' listening ability is measured by a multiple-choice test.

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Hörstrategien und Hörkompetenz in der Zweitsprache: Zur Rolle der gewählten Testmethode

Zusammenfassung

Mehrere bisherige Studien haben versucht, den Zusammenhang zwischen Hörstrategien und Hörkompetenz zu untersuchen. Es scheint jedoch, dass bei keiner davon der Einfluss der Testmethode auf die Ergebnisse in den Mittepunkt der Analyse gestellt wurde. In der vorliegenden Studie wurde diese Frage untersucht, indem man 55 Englischlernern illustrierte und nicht illustrierte Hörverstehensaufgaben mit unterschiedlichen Antwortformaten zu lösen gab. Der Hörteil im Preliminary English Test (PET) und ein aus 36 Punkten bestehender Fragebogen zu den Hörstrategien wurden in der ersten Sitzung bearbeitet, und nach einer Woche Pause legten die Studienteilnehmer eine modifizierte Version des PET-Hörverstehenstests ab. Die Daten wurden in einem Sprachlabor erhoben. Dabei wurden mehrere Korrelations- und Regressionstests durchgeführt, um das Verhältnis zwischen der Hörkompetenz, die mit dem ursprünglichen und modifizierten PET-Hörverstehenstest bewertet wurde, und den metakognitiven, kognitiven und sozio-affektiven Hörstrategien zu untersuchen. Die Ergebnisse zeigten, dass die Verwendung von metakognitiven Hörstrategien bei Zweitsprachenlernern der stärkste Indikator für die Hörkompetenz ist. Darüber hinaus deuteten die ausgewerteten Daten darauf hin, dass der Zusammenhang zwischen Verwendung von Hörstrategien und Hörkompetenz durch die Art der Testmethode vermittelt wird, die zur Bewertung der Hörkompetenz in der Zweitsprache eingesetzt wird. Es werden Wege für zukünftige Forschung und Implikationen für die Praxis aufgezeigt.

Schlüsselwörter: Hörkompetenz, Hörstrategien, Testmethode

Appendix A

Strategies	Sample items
Metacognitive	I have a plan in my mind for how I am going to listen. When my mind wanders, I recover my concentration right away. I evaluate how much I've understood this time, e.g., I could compre- hend 80% of the text.
Cognitive	I use mental or actual pictures to help me comprehend the texts. I use what I have just heard to guess what the next part is. I write down the words and concepts that I heard in my mind.
Socio-affective	I ask my classmate or friends to clarify my comprehension. I am not anxious and keep calm while listening.

Sample Items of Listening Strategies Questionnaire

Appendix B

Listening Strategies Classification Scheme (Vandergrift, 1997; Goh, 2002) by Chen (2009)

Cognitive Strategies	Metacognitive Strategies
Topdown processing	1. Planning (Preparing mentally and emo-
1. Listen for gist	tionally for a listening task)
 Listen for main ideas first. 	Preview contents;
2. Inferencing (Filling in missing information	 Rehearse sounds of potential content
and guessing meaning of words)	words.
 Use contextual clues; 	2. Directed Attention (Monitoring atten-
 Use information from familiar content words; 	tion and avoiding distractions)
 Draw on knowledge of the world; 	 Concentrate hard;
 Apply knowledge about the target language; 	 Continue to listen in spite of difficulty.
 Use visual clues. 	3. Selective Attention (Decide in ad-
3. Elaboration (Embellishing an initial	vance to listen for specific aspects of
interpretation to make it meaningful and	input)
complete);	Decide in advance to:
 Draw on knowledge of the world; 	- listen for familiar content words;
 Draw on knowledge about the target lan- 	- notice how information is structured
guage.	(e.g.discourse markers);
4. Prediction (Anticipating the contents of	- pay attention to repetitions;
a text)	- notice intonation features (e.g. failing
Anticipate general contents (global); Anticipate details while listening (local)	and rising tones).
• Anticipate details while listening (local).	4. Monitoring (checking/ comming un-
5. VISUAIIZATION (FORTHING a mental picture of what is heard)	Confirm that comprohension has taken
- Imagina scanos ovents objects etc. being	
described	Identify words or ideas not understood:
 Mentally display the shape (spelling) of key 	Check current interpretation with the
Words	context of the message
Bottomup processing	Check current interpretation with prior
6. Understanding each word and detail	knowledge
Try to figure out the meanings of most of	5. Evaluation (Checking interpretation of
words or sentences of the input;	accuracy, completeness and acceptability
• Try to understand most of the details of the	after listening)
input.	 Check interpretation against external
7. Translation (Changing words, phases or	sources;
sentences into L1 before interpretation)	 Check interpretation using prior knowl-
 Find L1 equivalents for selected key words; 	edge;
 Translate a sequence of utterances. 	 Match interpretation with the context of
8. Fixation (Focusing attention on under-	the message.
standing a small part of text)	
 Stop to think about the meaning of words or 	Social/ Affective Strategies
parts of the input;	1. Cooperation
 Memorize/repeat the sounds of unfamiliar 	 Ask for explanation/clarification.
words.	2. Confidence Building (encouraging
Cognitive	oneself)
9. Summarization	Iell oneself to relax;
• Organise important information in my mind.	 Use positive selftalk.
10. NOTETAKING	
• write down key words and concepts while	
listening.	