

## **Learning to listen strategically: Developing a listening comprehension strategies questionnaire for learning English as a global language**

### **Abstract**

In light of recent developments in the field of language learning strategies, this study aimed to validate a novel instrument to measure listening strategies of L2 learners of English. Items for a questionnaire were adapted from existing sources, generated from qualitative interviews with 34 learners, and created by the researchers themselves based on theoretical developments in self-regulation and English as a lingua franca. Validation involved a process of exploratory factor analysis with 120 learners and confirmatory factor analysis with a total pool of 255 learners of English in a university in Japan. A three-factor model emerged of cognitive strategies, metacognitive strategies, and practice (self-regulation) strategies. Multiple regression revealed that the model of listening strategies was a significant predictor of listening comprehension, as measured by the listening component of the *Test of English for International Communication*. However, only the 'practice (self-regulation)' factor was an independent significant predictor. The results suggest that self-regulation is a robust construct of strategic behaviour. It also reveals several items related to the use of English as a lingua franca as part of this factor, such as applying strategies to communicate with interlocutors of varying proficiencies and accents.

### **Keywords:**

Language learning strategies; listening; self-regulation; English as a lingua franca; Japan

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## 1.0 Background to the study

In language learner strategy research, listening has long been noted as a neglected skill (Vandergrift, 1997). This situation has remained largely unchanged over recent decades of strategy research (Zeng and Goh, 2018). Only 10 of the 61 studies included in Plonsky's (2011) meta-analysis of strategy instruction included measures of listening, compared to 33 of reading and 32 of vocabulary. In a systematic review by Rose *et al.* (2018), listening was the focus of none of the 24 studies that were included in the final systematic map.

Some of this lack of research may stem from an absence of recent theorization and operationalization of listening strategies compared to other areas of language learning. The *Metacognitive Awareness of Listening Questionnaire* (MALQ) (2006) is now 15 years old, and was constructed at the end of a prosperous era of strategy research, after which the field pivoted in response to criticisms in the mid-2000s (Dornyei 2005, Tseng *et al.*, 2006). Since this time, we have seen the emergence of new measures for vocabulary in the *Self-Regulatory Capacity for Vocabulary* (SRCVoc) questionnaire (Tseng *et al.*, 2006) and for writing in the *Writing Strategies for Self-Regulated Learning* (WSSRL) questionnaire (Teng and Zhang, 2016), both of which incorporate self-regulation theory into measures of strategic behaviour.

Unlike research into vocabulary and writing, we have not seen such instrumentation for listening, although Nix (2016) has explored trait-based listening strategies in recent years. He argues that "trait strategy use differs from state strategy use as the former represents experiential memory of habitual strategic use, a stable long-term memory also known as strategic knowledge (Vandergrift, Goh, Mareschal, & Tafagodhtari, 2006), while the latter is idiosyncratic with specific language tasks and often investigated in treatment studies" (Nix, 2016, p. 80). Many measures of strategy use, he argues, problematically generalise trait strategies from measures of what learners do in specific situations. Thus, a sound instrument of strategy use should aim to measure more stable, habitual trait strategy use, as opposed to highly-changeable state strategy use. Further to this, the field of applied linguistics has seen increased importance placed on the need for students to develop strategies to use English as a lingua franca (ELF), necessitating that we revisit

the types of language learning strategies that learners deploy to meet new learning goals for global use of the language.

To fill this gap, this paper details the construction and validation of a new instrument (called the Listening Comprehension Strategies Questionnaire or LCS-Q, Appendix A) to measure L2 listening strategies that incorporates perspectives from self-regulation and ELF to focus on learning to listen in a globalised world. This paper outlines the validation process of the new instrument and shows that it can significantly predict listening comprehension. Although the population of the study was a largely homogeneous group of language learners in a Japanese university, this paper takes an important first step in re-invigorating research possibilities for measuring listening strategies in formal educational settings—that is, in contexts where listening is explicitly taught.

## 1.1 Language learning strategies

### 1.1.1 *Language learning strategies*

Language learning strategies, also referred to as language *learner* strategies, have been defined as the “[t]houghts and actions, consciously chosen and operationalized by language learners, to assist them in carrying out a multiplicity of tasks from the very outset of learning to the most advanced levels of target language performance” (Cohen, 2011, p. 7). Recently, Thomas *et al.* (2019) have suggested a modified version of Oxford’s (2017) definition as “thoughts and actions used by learners with some degree of consciousness for purposes associated with language learning” (p. 10).

Under the broad banner of language learning strategies, a voluminous amount of research has been conducted from an early focus on studying the behaviours of ‘the good language learner’ in the 1970s (e.g. Rubin, 1975) to more recent in-depth investigations of the complexities of strategy use in the 2010s (e.g. Dong, 2016). In Zhang *et al.*’s (2019) historical overview of 118 language learning strategy articles in *System*, they discuss how the field of strategy research has matured over its almost 45-year history, which has been accompanied by a steady growth of research. While the 1990s have been described as a period of boom in strategy research (Cohen and Griffiths, 2015; Griffiths, 2015), the post-2010s have also seen a revival in research. Much of

this resurgence in research interest has been the result of theorization in the direction of self-regulation.

### 1.1.2 Self-regulation

Self-regulation has had an undeniable impact on the field of learning strategies over the past 15 years. Self-regulation is a psychological construct that is used to describe the extent that individuals are active agents in their own learning. It is viewed as an individual difference in that it explores learners' own "strategic efforts to manage their own achievement through specific beliefs and processes" (Zimmerman & Risemberg, 1997, p. 105). The application of self-regulation to language learning was demonstrated in Tseng *et al.* (2006) as a robust measure of vocabulary learning strategies, and has since been validated in a number of studies (see Ziegler, 2015; Mizumoto & Takeuchi, 2012).

The emergence of self-regulation as an alternative theory to explore language learner strategy research has had an impact on definitions in the field. Oxford (2017), for example, integrated notions of self-regulation into her 'strategic self-regulation (S2R) model', where self-regulation was depicted as the macro-force powering the gears of strategy use. This illustration also sits well with descriptions of self-regulation as "the glue and the engine that helps students manage their strategic learning" (Weinstein *et al.*, 2011, p. 47). Self-regulation has made inroads into recent definitions of language learner strategies such as the following: "actions chosen by learners (either deliberately or automatically) for the purposes of learning or regulating the learning of language" (Griffiths, 2015, p. 426). Two recent systematic analyses of corpora of language learning strategies have provided quantitative evidence that the field has moved conceptually closer to notions of self-directedness (Thomas *et al.*, 2021a; 2021b).

Scholars have previously argued that language learning strategies and self-regulation examine different parts of the learning process (Gao, 2007), and thus can be incorporated into investigations of strategy use. This is an avenue that Teng and Zhang (2016) explored in their investigation of writing strategies, finding that the overarching constructs could be seen to represent the self-regulation of learners, and the items within these constructs could be defined as the product-based strategies that learners deployed to fulfil the processes of regulation. A systematic review of language learning strategy research in

response to self-regulation concluded that studies such as Teng and Zhang (2016) could be used as a template for future investigations into other language skills and learning areas, including L2 listening (Rose *et al.*, 2018).

## **1.2 Language learning listening strategies**

Drawing on scholarship in the area, Nix (2016) defines listening strategies as “methods of managing personal mental and observable behavior to accomplish a listening task” (p. 80). Previous strategy research has suggested that listening strategies are facilitative to the development of second language listening proficiency (see Goh, 2002; Graham & Macaro, 2008; Vandergrift, 1997, 1999). Other research challenges the importance of listening strategies (e.g. Wang & Treffers-Dallers, 2017, Matthews, 2018; Wallace, 2020) in favour of other variables that better predict listening development and comprehension.

### *1.2.1 Effectiveness of listening strategies*

Zhang (2008) makes a convincing argument that listening strategies are highly teachable, claiming that a “strategies approach remains one of the many possible and effective approaches that can help L2 learners to improve their listening skills if classroom teachers implement it based on a good understanding of its cognitive as well as pedagogical underpinnings” (p. 119). Such claims are supported by research, such as Graham and Macaro’s (2008) investigation of the teaching of listening strategies to UK-based high school learners of French. Their study found that the teaching of strategies for listening resulted in the improvement of scores on listening tests. Similarly, Cross’s (2008) investigation of the teaching of listening strategies to EFL students in Japan found that the control group, who received listening strategy instruction, made greater gains in listening comprehension scores than a comparison group who received no such training.

Zeng and Goh’s (2008) investigated the impact of a self-regulated learning program on the listening performance of two low and two high achieving college students in China. Data were collected over a six-month period and revealed substantive differences in the strategic behaviours of these two types of students. Results suggested that students’ listening development was affected by their ability to self-regulate their listening in independent

settings.

A recent study utilizing advanced quantitative methods by Wallace (2020) has challenged the central importance of metacognitive awareness in second language listening. Using structural equation modelling, his study revealed vocabulary knowledge had the strongest effect on listening comprehension, followed by knowledge of the listening topic and attentional control, with metacognitive awareness showing only an indirect effect. The importance of vocabulary knowledge over awareness of strategy use has also been indicated in several other recent studies (e.g. Matthews, 2018; Vandergrift & Baker, 2015; Wang & Treffers-Daller, 2017).

### *1.2.2 Listening in lingua franca settings.*

The sociolinguistic landscape of English language use in the 21<sup>st</sup> century is a global content where L2 speakers now outnumber L1 speakers (Galloway, 2017). Research in the field of Global Englishes has pointed to a need for increased exposure of L2 listeners to a wider variety of Englishes so that language learners are able to converse with a wide range of L1 and L2 interlocutors. Listeners, thus, need to be flexible when using English, “gauging and adjusting to interlocutors’ linguistic repertoires” and engaging in “supportive listening, signalling non-comprehension in a face-saving way, asking for repetition, paraphrasing, and the like” (Seidlhofer, 2004, p. 227). A focus on learning to listen to a wider range of English varieties is also of rising importance in the field of language testing. Both Abeywickrama (2013) and Ockey *et al.* (2016) have explored the effects of accents on listening comprehension in test-taking contexts, with the later study indicating that familiarity with an accent increases comprehension.

Other studies have explored ways in which learners can increase familiarity with a range of accents beyond those present in traditional TESOL curricula. Galloway and Rose (2014), for example explored the use of listening journals in students’ self-study of internet and library-based materials as a way for learners to increase exposure to Englishes. Similarly, Sung (2018) encouraged his Hong Kong-based EAP students to seek out opportunities to use English as a Lingua Franca (ELF) outside of the classroom as a structured language learning opportunity. With the recent importance placed on the need for learners to use English in ELF contexts, it seems that good L2 listeners need

to develop listening strategies to adjust to a wide range of global interlocutors. That is, traditional learning strategies such as seeking out opportunities “to use the language by looking for native speakers” (Rubin, 1975, p. 47) or “to talk with native speakers in English” (Oxford, 1989, p. 2) may no longer be appropriate for a learner to fully develop as a user of English as a global language.

### 1.3 Instruments to explore L2 listening strategies

Vandergrift *et al.* (2006) developed the Metacognitive Awareness for Listening Questionnaire (MALQ) as a measure of L2 listening behaviour. MALQ is probably still the most well-known and widely used instruments for exploring L2 listening strategies, and is regarded as one of the first psychometrically tested instruments that focused specifically on L2 listening. As Nix (2016) observes:

The efforts of Vandergrift *et al.* (2006) deserve credit as a solid foundation for construction of a novel listening strategy inventory, as the MALQ describes well-documented strategies such as inferencing, planning, and monitoring. (p. 82).

Research that has investigated the MALQ in relation to listening performance has shown a correlation with listeners’ metacognitive knowledge and their L2 proficiency (Vandergrift, 2005). Other studies have shown that L2 listeners’ self-efficacy is also closely connected to metacognition in listening (e.g. Graham, 2007; Graham & Macaro, 2008). More recently, Vandergrift and Baker (2015) used the MALQ as part of a wider investigation of learner variables in listening comprehension. Their use of path analysis revealed variables such as general skills (auditory discrimination and working memory) to be of initial importance, followed by L1 and L2 vocabulary knowledge, with metacognitive awareness of listening strategies playing a lesser role.

Nonetheless, the field of language learning strategies has progressed greatly since 2006, both in terms of theorization of strategies, and the methods used to construct novel instruments. As already outlined, the studies by Teng and Zhang (2016) and Tseng *et al.* (2006) have helped to re-invigorate writing strategies and vocabulary strategies respectively, which could be used a methodological roadmap for future questionnaire development for listening. Teng and Zhang (2016) have also outlined the possibilities of marrying strategy use with self-regulation. In the systematic review by Rose *et al.* (2018), the team of researchers concludes that there is also “an opportunity to explore

better ways to integrate process-based self-regulatory items alongside product-based items within new instruments in order to explore strategy products operating within their self-regulatory undercurrents” (p. 159). As Wang and Treffers-Daller (2017) aptly state: “The key problem with the MALQ, as recognised by Vandergrift and Baker (2015, p. 210), is that the MALQ does not tap into actual metacognitive activity but rather asks learners to self-report on their awareness of listening processes” (p. 148). Thus, the aim of our study was to explore ways in which a L2 listening strategy questionnaire could be developed to incorporate strategy use from multiple theoretical perspectives, and to go beyond metacognitive awareness. It is important that this instrument sits comfortably within theories of self-regulation, while also remaining true to a product-based approach to describing strategy use. Given recent sociolinguistic trends, we also see it as important to try to integrate, as far as feasible, notions of learning to listen to ELF.

## **2.0 Methods and materials**

The current study aimed to build a L2 listening strategy questionnaire, which fulfilled the following requirements:

- Focusing on L2 listening in formal language learning contexts
- Being useful for EFL teachers to use with learners
- Showing sensitivity to self-regulation, while maintaining a product-based focus
- Incorporating the use of English as a global lingua franca
- Having predictive abilities of L2 listening comprehension

### **2.1 Approaches to questionnaire design**

Questionnaires have a rich history in strategy research, and are a useful method for eliciting students’ interpretations of their own learning behavior. In approaching the creation of our instrument, we went through the standard phases of questionnaire creation and validation, which included the writing of items, pre-piloting these with a sample of students, finalizing a draft instrument, collecting data, performing an exploratory factor analysis, then collecting further data, and performing a confirmatory factor analysis. We then tested the instrument in terms of its predictive power of a standard measure of L2 listening



performance. Each of these phases are presented in further detail in sections 2.3 and 2.4.

## 2.2 Participants and setting

As our aim was to create an instrument for learners studying in educational settings, we aimed to recruit learners whose main exposure to learning was in a formal classroom environment. To try to control for individual differences as much as was feasible, a uniform group of students were recruited to minimize the effects of group and contextual differences on the data. The participants in this study were 255 learners of English. All participants were Japanese college students, who were aged 18-20. All were female, and were majoring in English at the same university in Japan. General listening proficiency within the whole group ranged from 110 to 450 out of a total of 495 on the TOEIC listening test. As the time of data collection, the mean score for the listening component was 299.0 (SD=59.5). Using the minimum conversion benchmarks for TOEIC to the Common European Framework of Reference for Languages (see Tannenbaum & Wylie, 2013; 2019), these scores indicate a range of A2 (*basic user*)<sup>1</sup> to B2 (*independent user*)<sup>2</sup> of English (Council of Europe, 2001), or approximately 3.0 to 5.5 on the IELTS listening test. We purposely included lower proficiency students as in a recent review of language learning strategies, Thomas *et al.* (2021a) observed a major concern that strategy research had “focused so intensively on ideal learners... ..that less-than-ideal students and teachers in general may have been removed from the frame” (p. 357).

## 2.3 Research procedure

The main research procedure is illustrated in Figure 1. Iwaniec (2020) points out

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<sup>1</sup> A2 Basic User “can understand phrases and the highest frequency vocabulary related to areas of most immediate personal relevance (e.g. very basic personal and family information, shopping, local geography, employment).” (Council of Europe, 2020, p. 177)

<sup>2</sup> B2 Independent user “can understand extended talk and lectures and follow even complex lines of argument provided the topic is reasonably familiar.” (Council of Europe, 2020, p. 177)

that the creation of items for a questionnaire are the most crucial part of questionnaire design, and that writing items from scratch is a complex skill even for highly experienced researchers. For this reason, we included items from the MALQ into a pool of possible items, so as not to assume that these were inadequate for our purposes. We then supplemented the MALQ items with additional items which were generated from qualitative interviews with learners from the same population and setting as our main participants. 34 learners participated in this process. Interviews were conducted in Japanese to ensure that students were able to accurately communicate strategies to the lead researcher. In the interviews students were asked open ended questions about what strategies they used outside of the classroom to improve their listening comprehension, and what strategies they used to improve their comprehension of listening to English in the classroom (See Appendix B for interview protocol). The items were first coded based on the items in the MALQ. Any that were broadly similar to existing items were discarded. Any new strategies, which were not covered in the MALQ, and were mentioned by two or more participants (to ensure they were not unique to one individual) were retained. As a result of this process, 17 novel items were added to the item pool, which were generated from the qualitative data.

Finally, additional, bespoke items were created by the researchers to capture two dimensions that had been missing from previous questionnaires. The first dimension concerned how listening strategies were used in real-life, global practices. These included items related to the use of English as a lingua franca, which resulted in the addition of several items related to global language use, such as:

- When I engage in listening practice, I listen to different accents of English.
- When I listen to people (e.g., classmates) who have low proficiency in English, I have strategies to help me understand.
- When I listen to English speakers who have a strong accent, I have strategies to help me understand.

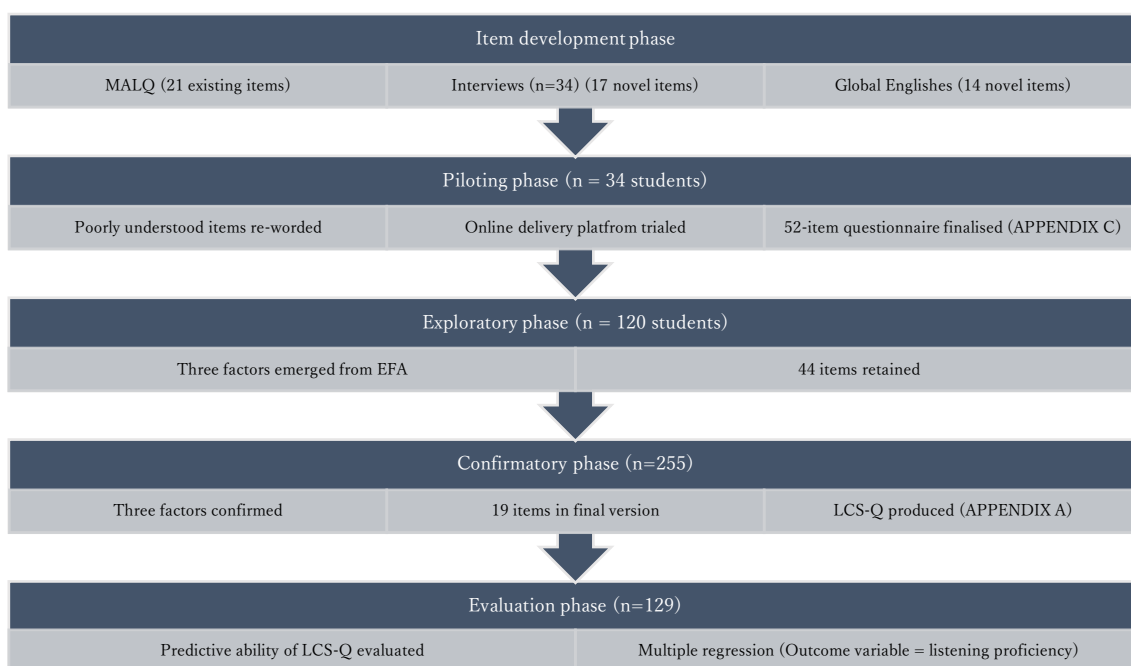
The second dimension incorporated a list of items that were intended to explore self-regulation as an underlying process of strategic behavior. This included wording of items that asked whether learners applied strategies in certain contexts, but not what these strategies were. A result of this process was the inclusion of such items as:

- I have useful listening materials/resources to use for improving my listening skills.
- I have useful practice methods for improving my listening skills.
- I have useful tools (devices/facilities) to use for improving my listening skills

In total, 14 items were included on the initial questionnaire to capture self-regulation as the underlying driving force for strategy use, as well as the use of English as a global language.

Iwaniec (2020) states that when a first draft of the questionnaire is compiled, the next step is to pilot it to reveal any issues with items or omissions in the eyes of the participant. The initial questionnaire was piloted with a small group of learners ( $n=12$ ) from the population who were interviewed. During piloting, the researcher sat with the student as they completed the questionnaire, asking them to circle or underline items which were unclear. After they completed the questionnaire, the researcher went through each marked item to discuss which aspects were unclear. If an item was singled out by more than one student, it was considered a poorly understood item, and it was re-worded based on participant feedback. At the end of the piloting stage, 52 items moved forward to the first phase of data collection. These items are shown in full in Appendix C.

The questionnaire was built within an online survey platform called Qualtrics allowing delivery of the questionnaire to the participants on their mobile devices in class. The same 12 pilot participants were asked to complete the online questionnaire to check its functionality, and the re-worded items. Both were confirmed as ready to enter the next stage.



*Figure 1: Research procedure*

## 2.4 Data collection and analysis in main study

The main study occurred in three related stages: Exploratory; Confirmatory; and Evaluation. In the first phase of the main study, the 52-item questionnaire (Appendix C) was given to 120 participants (Japanese college students; aged 18-20; all female; English major students). We received 120 valid responses from this phase. It has been suggested that a dataset should contain 51 more samples than items in order to conduct EFA (Lawley and Maxwell, 1971). Having met this minimum, EFA was conducted to begin to explore the constructs of the questionnaire. Analysis of the scree plot revealed three clear factors, and items that were improperly loaded to any of these factors were discarded (see Table in Appendix C for factors and factor loadings).

In the second phase of the study, questionnaire data was collected from 255 students to see whether the structure from the first phase could be confirmed with a larger population. CFA was conducted on the new set of data to see whether a good fit could be achieved.

Finally, we tested the predictive abilities of the model on a test of L2 English language listening proficiency in the form of the listening component of the TOEIC (Test of English for International Communication). Test scores were manually matched with 129 participant questionnaire responses using student

numbers provided for those who had taken a TOEIC test in the past six months, and a multiple regression was conducted with each factor in the model inputted as a variable.

### **3.0 Findings**

The following section provides details of the validation process, including the final results of the EFA and CFA. It also presents the results of the multiple regression used to explore the explanatory power of the model on listening comprehension ability within the sampled population.

#### **3.1 Exploring the factors**

Exploratory factor analysis (EFA) is a statistical technique to identify relationships to one or more latent variables within a data set. In questionnaire data EFA can be used to investigate what items appear to measure the same construct or *factor*. By carefully analyzing the scree plot and consulting with a statistician, three factors were determined. As a result of our initial exploration of the three-factor model (Principal Axis Factoring, Promax with Kaiser Normalization; Total Variance Explained: 34.6%), the following seven items were not properly loaded: items 44, 15, 52, 19, 47, 13, 14. When the correlation coefficient was below 0.30, we decided that variable (questionnaire item) was not related to the factor (properly loaded) and thus removed from the analysis. A second EFA was conducted, excluding the seven items, but under the same conditions (Total Variance Explained: 37.7%). As a result, one item was not properly loaded: item 10. A third EFA was conducted under the same conditions, excluding the one improperly loaded item. As a result, all the items were properly loaded (Total Variance Explained: 38.3%). The final factor solution is shown in Appendix C, following the list of full items. Factor One was labelled “Cognitive Strategies” and Factor 2 was labelled “Metacognitive Strategies”. The third factor contained only the novel items that were related to self-regulation, and were labelled “Practice Strategies” as they referred to overarching self-regulatory behavior that guided learning.

#### **3.2 Confirmatory Factor Analysis**

To confirm the factors derived by EFA, new data were collected. Using Qualtrics, the questionnaire was administered with new participants in the same college (all sophomores; aged from 19-22; all female and English majors). Although 138 English major Japanese college students participated, 3 participants were excluded because of either not consenting to their use of data use or duplicate postings). Confirmatory factor analysis using AMOS was conducted on the combined samples ( $n=120+n=135$ ). In this process, items were reduced considerably, and as a result, the following model in Figure 2 was obtained. The model had fit indices ( $GFI=.907$ ;  $CFI=.938$ ;  $RMSEA=.057$ ) which, while not perfect, were deemed satisfactory.

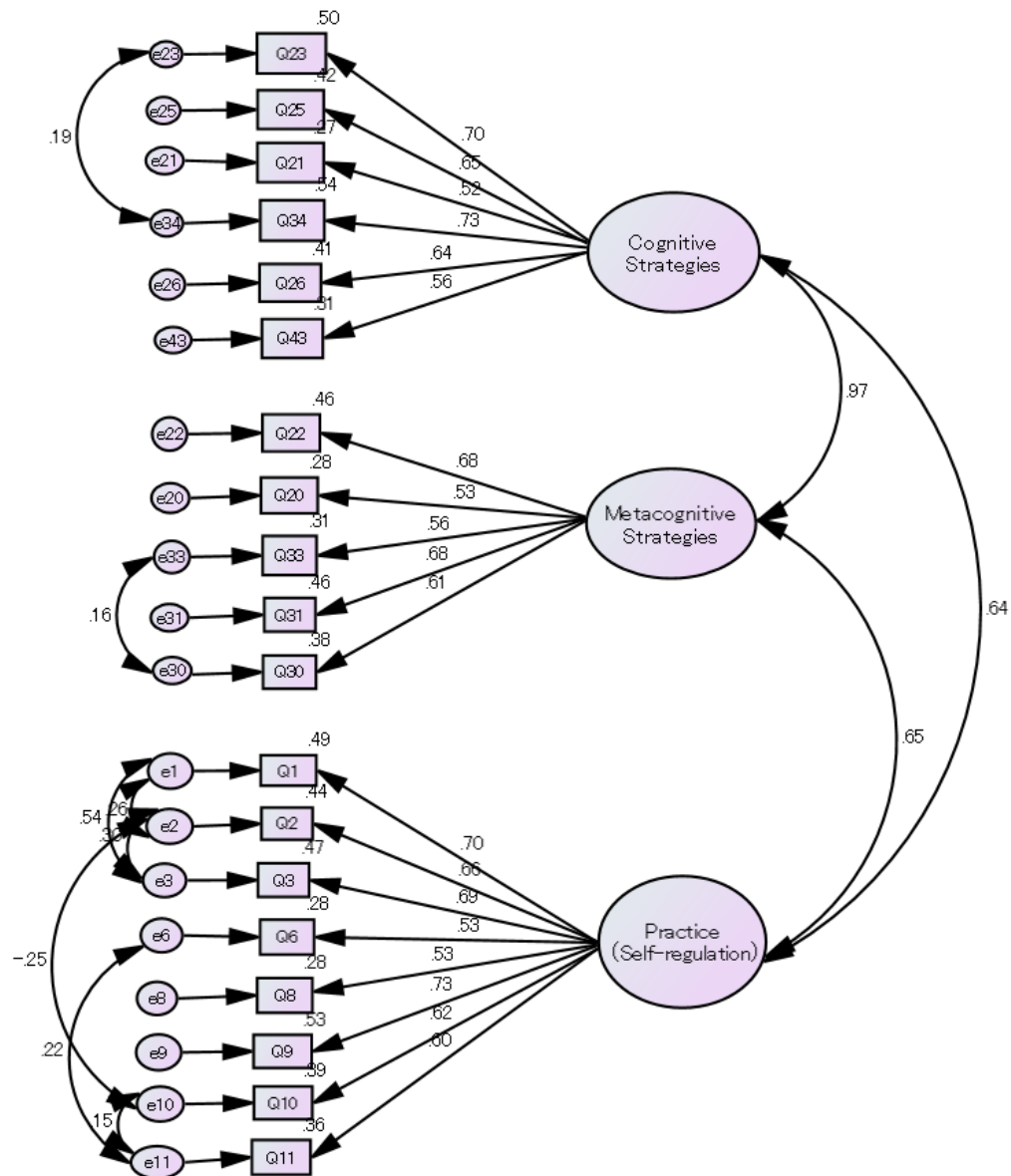


Figure 2: Confirmatory Factor Analysis

### 3.3. Internal reliability

Finally, the internal consistency of the final instrument was tested by calculating the Cronbach's alpha coefficient for the overall scale and for each of the factors. The final factor solution is displayed in Table 1 (see Appendix A for full item descriptions). Internal reliability for the six items in Factor 1 (Cognitive Strategies) was good ( $\alpha=.804$ ). Reliability for the five items in Factor 2 (Metacognitive Strategies) was satisfactory ( $\alpha=.752$ ). The internal reliability of the eight items in Factor 3 (Practice/Self-regulation Strategies) was good ( $\alpha=.853$ ). In total, all 19 items had good internal reliability ( $\alpha=.898$ ).

**Table 1: Final factor solution**

	Factor 1 ( $\alpha=.804$ )	Factor 2 ( $\alpha=.752$ )	Factor 3 ( $\alpha=.853$ ).
Q34	0.74		
Q23	0.70		
Q25	0.64		
Q26	0.63		
Q43	0.57		
Q21	0.51		
Q22		0.69	
Q31		0.67	
Q30		0.61	
Q33		0.56	
Q20		0.54	
Q9			0.73
Q1			0.70
Q3			0.69
Q2			0.66
Q10			0.62
Q11			0.60
Q8			0.53
Q6			0.53



### 3.4 Exploring the predictive ability of the model

Finally, a multiple regression analysis was conducted to explore the predictive abilities of the strategy measure (LCS-Q) on L2 listening proficiency, as measured by the listening comprehension component of the TOEIC for 129 students who had completed a TOEIC test in the previous 3 months. The minimum score was 140 and the maximum was 445, with a mean of 315.47 (SD=63.852). We first checked that neither variable was significantly skewed or kurtotic, for problems of multicollinearity, and that data met all assumptions of regression, including linearity, normality and homoscedasticity. The sample size was confirmed as meeting the minimum requirements of multiple regression, using the formula suggested by Tabachnick and Fidell (2013, p. 159) of  $n > 50 + 8m$  (where  $m$  = number of independent variables). Data were inputted into the multiple regression using the forced entry method, as stepwise regression is generally “frowned upon by most statisticians” (Field, 2012, p. 322), and there was no theoretical justification for order of input of variables. Put simply, if an aim is to “assess relationships among variables and answer basic question of multiple correlation, the method of choice is the standard multiple regression” (Tabachnick & Fidell, 2013, p. 174).

Results showed that LCS-Q accounted for 12.8% of the variance in the listening score ( $p < .001$ ,  $R^2 = .128$ ). This indicates that the model was significant in predicting listening comprehension for this population of learners, but had a small effect size. Table 2 presents the standardized regression coefficient ( $\beta$ ), t-statistic, p-value, and confidence interval (95% CI). An analysis of the coefficients indicated that Factor 3 (Practice [self-regulation] strategies) was a significant individual predictor for listening proficiency, but the other two factors were not identified as significant predictors.

Table 2: Multiple regression output

Model summary				
Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE
1	.358 <sup>a</sup>	0.128	0.107	60.323

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean square	F	Sig
1	Regression	67007.642	3	22335.881	6.138	.001 <sup>b</sup>
	Residual	454864.451	125	3638.916		
	Total	521872.093	128			

<sup>a</sup> Dependent variable: Listening Score (TOEIC)  
<sup>b</sup> Predictors: Factor 1 (cognitive), Factor 2 (metacognitive), Factor 3 (practice)

Coefficients <sup>a</sup>
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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	178.663	36.932		4.838	0.000
	Factor 1 (Cognitive)	14.054	12.988	0.147	1.082	0.281
	Factor 2 (Metacognitive)	-1.926	11.708	-0.021	-0.164	0.870
	Factor 3 (Practice)	22.425	8.315	0.270	2.697	0.008
a. Dependent Variable: Listening TOEIC score						

## 4.0 Discussion

### 4.1 Self-regulation as part of strategic listening behavior

One of the aims of the study was to explore an instrument that could incorporate self-regulation as part of strategic behavior, while also staying true to traditions of research that depict strategies as behavioral products (i.e. things that learners do). The three-factor model that emerged from the EFA revealed a distinct factor that pooled the items related to self-regulation (Factor 3). The CFA also confirmed this factor, and placed it within a larger model of strategic behavior for listening. Parallels between this finding and Teng and Zhang (2016) can be found, as their model for writing also revealed similar dimensions of cognition, meta-cognition and motivational (self-)regulation, among others. This finding adds further evidence that self-regulation and learning strategies are distinct, but related, variables in models of strategic behavior.

### 4.2. Strategies related to using English as a global lingua franca

A second aim of the study was to explore how items related to learning English as a global lingua franca were integrated into the strategic behavior of L2 listeners. In final model, Item 10 (“When I engage in listening practice, I listen to different accents of English”) was revealed to be improperly loaded on to any factor. This indicates that—at least for our population—this strategy is not situated alongside other strategies within a larger structure of strategic behavior. Previous research into Global Englishes in Japan has pointed to the

fact that Japanese L2 English language learners tend to be drawn to highly standardized North American accents, and that without explicit awareness raising of the importance of comprehending non-native Englishes, many learners in Japan largely adopt a strong standard language ideology (Galloway, 2017). This might explain a lack of strategic behavior surrounding this item. Other populations of learners who engage with a more heterogeneous population of English users might be shown to adopt this strategy.

Two of the ELF items were integrated within Factor 3, which were: Item 11 (“When I listen to people who have low proficiency in English, I have strategies to help me understand”) and Item 12 (“When I listen to English speakers who have a strong accent, I have strategies to help me understand”). This is an indication that two elements of using English as a global lingua franca may be part of the overall regulation of the type of practice-based strategies that the learners deploy. This finding aligns with research emanating from the field of ELF, which suggests that L2 English learners need to develop a repertoire of strategies to comprehend a range of English L1 and L2 interlocutors (Seidlhofer, 2004). For example, a study by Björkman (2011) in the Swedish higher education context has suggested that speakers from different first language backgrounds with varying levels of proficiency make ample use of such strategies. She also suggests that English users in ELF contexts have increased “preparedness for potential communicative breakdown, compared to more homogeneous groups of speakers” (Björkman, 2011, p. 961). It stands to reason, therefore, that research with a more heterogeneous population than was used in our study, might find greater importance placed on such ELF strategies.

#### *4.3 Pedagogical implications*

Returning to the notion that listening strategies are highly teachable, Zhang (2008) argues that a “listening is more often taught than caught, and so are listening strategies... ..and this is especially true in L2 contexts” (p. 122). In this assessment, Zhang suggests that learning to listen and learning to apply effective strategies in L2 contexts are skills that should be explicitly taught to learners. Thus, there are some pedagogical implications that emerge from the current study.

We believe that items in Factor 3 of the measure can be used to discuss with learners whether they have the requisite strategies to cope with

listening in a range of contexts, and those detailed in Factor 1 and Factor 2 can be used to simulate ideas about the processes of listening and types of strategies that can be readily deployed. Nix (2016) notes a strategy inventory is also very useful for strategy training exercises and “may be administered as pre- and post training measurements or as a series of formative assessments during a term of study to gauge growth in listening strategy use” (p. 95).

## **5.0 Limitations, conclusion and future recommendations**

This paper has outlined the development of a novel instrument to measure L2 listening strategies, which has attempted to build on existing foundations of L2 listening strategies with updated items related to self-regulation and ELF. We have demonstrated a valid fit of our data into a model of strategic behavior which succeeded in incorporating self-regulation conceptualizations of learner strategies, as well as effectively including some concepts related to listening in ELF contexts. These findings, while not without their limitations, point to several directions in future research, as well as pedagogical implications.

### *5.1 Limitations*

The study has several limitations, which have affected the findings and their implications. First, the homogenous nature of our sample means that our findings are not easily transferrable to other learner populations. Second, our study used a standard listening proficiency test (TOEIC) as our measure of listening development, as opposed to more nuanced measures of listening comprehension. This may have blunted our ability to detect differences in listening development, and introduced possibilities of Type II errors in the regression findings (i.e. not detecting a significance that may have been present). Further to this, previous research has indicated an importance of other measures of linguistic knowledge such as L2 vocabulary knowledge (e.g. Wang & Treffers-Daller, 2017) and aural vocabulary knowledge (Matthew, 2018), so our study may have benefited from inclusion of such measures. Third, the study failed to demonstrate benefits of cognitive (Factor 1) and metacognitive (Factor 2) strategies for listening comprehension. Until this relationship can be verified in future research, the use of these factors as either diagnostic measures or for strategy training is limited.

### *5.2 Future recommendations*

As the population of the current study was largely homogenous and in a single educational context, a first and necessary step of future research will be to explore the validity of this model in other contexts and for other types of learners. We suggest that future researchers use the final version of the instrument and the three-factor model with other populations to investigate

whether the structure is transferable to different contexts. If unsuccessful, the initial 52-item full instrument prior to EFA and CFA is provided in Appendix C to give future researchers the flexibility to repeat the procedures outlined in this study with a new population of learners. It will also allow them to make adaptations of their own to the instruments' items.

While our study has validated the LCS-Q as a measure of listening strategies, further research is needed to explore how these strategies interplay with different types of language knowledge in listening performance, such as investigated by Vandergrift and Baker (2015) and Wallace (2020). Using the LCS-Q in an exploration of the interplay of listening strategies with other important factors such L2 vocabulary knowledge (e.g. Wallace, 2020; Wang & Treffers-Daller, 2017), aural vocabulary knowledge (Matthews, 2018), topical knowledge (Wallace, 2020) and other learner differences (Vandergrift & Baker, 2015) will help to inform an evidence based approach and contextualize the importance (or lack thereof) of strategy use.

A final area of future investigation is to explore the effects of listening strategies on listening development in a longitudinal study. Our recommendations echo calls from Nix (2016) concerning his own instrument, suggesting that it "be administered as pre- and post-training measurements or as a series of formative assessments during a term of study to gauge growth in listening strategy use" (p. 95). We would go further to also argue that as second language acquisition researchers, we should also be concerned with explorations of language development, and thus explore the role that strategies play in terms of predicting listening development by utilizing pre- and post L2 listening comprehension tests. This way researchers can better understand the relationship between strategic behavior and measurable gains in L2 listening abilities. Such recommendations are in line with Pawlak and Oxford's (2018) recent calls for more research that explores the link between "use and attainment" (p. 528) as well as positioning strategy use as a dynamic construct. With such promising avenues for future research, we hope to see listening re-invigorated in this new era of strategy research, to keep pace with developments in other skill areas.

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