Chabahar Maritime University
Iranian Journal of English for Academic Purposes ISSN: 2476-3187
IJEAP, 2020, 9(3) (Previously Published under the Title: Maritime English Journal)

High- and Mid-Frequency Vocabulary Size as Predictors of Iranian University EFL Students' Speaking Performance

[1]Ali Derakhshan*
[2]Mostafa Janebi Enayat

IJEAP- 2005-1545
Received: 2020-05-19 Accepted: 2020-07-02 Published: 2020-07-03

Abstract

Literature is replete with the studies focusing on the role of vocabulary knowledge in second language receptive skills. However, the relationship between the aspects of vocabulary knowledge and productive skills in general, and the speaking performance in particular has remained scanty in the related literature. This paper examined the relationship between knowledge of L2 vocabulary size at different word-frequency levels and Iranian university students' English-speaking ability. Moreover, the strength of this association was investigated for the fluency and lexical components of speaking ability. To achieve this goal, 46 (14 males and 32 females) Iranian English as a Foreign Language (EFL) learners, studying English Literature at Golestan University, Iran, took the Vocabulary Levels Test (VLT), a measure of size of vocabulary knowledge, and International English Language Testing System (IELTS) tasks for the speaking skill. Results of hierarchical multiple regression analyses revealed that while knowledge of the 3,000-word-frequency level (high-frequency vocabulary) contributed uniquely to the prediction of the second language (L2) overall speaking ability and its fluency dimension, knowledge of the 5,000-word frequency band (mid-frequency vocabulary) could explain the variance in the lexical dimension scores of L2 speaking over and above the high-frequency vocabulary. The implications of this study pertain to the importance of highlighting the most frequent vocabulary for academic speaking courses while attending to the lower-frequency lexical items for just the vocabulary dimension of this skill, especially for candidates taking the IELTS exam.

Keywords: Vocabulary Size, EFL Speaking, High-frequency Vocabulary, Mid-frequency Vocabulary, IELTS

1. Introduction

Lexical knowledge has been identified as a critical factor in improving the L2 skills, and many researchers have acknowledged the significant role it could play in learning a foreign/second language (Akbarian, 2010; Alharthi, 2020; Dabbagh & Janebi Enayat, 2019; Derakhshan & Kaivanpanah, 2011; Janebi Enayat & Babaii, 2018; Nation & Webb, 2011; Read, 2004; Schmitt & Schmitt, 2014; Taghizadeh & Khalili, 2019). This variable, therefore, could greatly affect the language proficiency level of the students (Milton, 2013; Nation, 2013). For this reason, many studies have been undertaken to probe the extent that different aspects of word knowledge could contribute to the performance of L2 learners. In particular, the size and the depth dimension of vocabulary knowledge have gained more attention. The first one pertains to the quantity of word knowledge, whereas the latter pertains to the quality of lexical knowledge, which can include word associations and use of semantically related lexical items (Henriksen, 1999; Read, 1993; Schmitt, 2008). The contribution made by size and depth dimensions has been extensively studied in regard to different language skills, including listening (Afshari & Tavakoli, 2017; Baleghizadeh & Khaledian, 2016; Dabbagh, 2016; Matthews & Cheng, 2015), reading (Atai & Nikuinezhad, 2012; Cheng & Matthews, 2018; Faghih & Nemati, 2014; Kaivanpanah & Zandi, 2009; Mehrpour, Razmjoo, & Kian, 2011; Qian & Schedl, 2004;

[1] Associate Professor of Applied Linguistics (Corresponding Author), a.derakhshan@gu.ac.ir; Department of English Language and Literature, Faculty of Humanities and Social Sciences, Golestan University, Gorgan, Iran.

[2] Assistant Professor of Applied Linguistics, m.enayat@maragheh.ac.ir; English Department, University of Maragheh, Iran.

Rashidi & Khosravi, 2010; Taghizadeh & Khalili, 2019; Zhang & Anual, 2008), writing (Atai & Dabbagh, 2010; Dabbagh & Janebi Enayat, 2019) and speaking (Miralpeix & Muñoz, 2018; Uchihara & Saito, 2019).

The association of size and depth of word knowledge with receptive skills, especially reading, has been extensively researched in the literature. Kaivanpanah and Zandi (2009), for instance, explored the relationship between vocabulary depth and EFL learners' reading skill as well as the role of syntactic knowledge in this interaction. They found that the depth aspect was significantly linked to L2 reading performance, but grammatical knowledge was a stronger predictor variable. Alternatively, Atai and Nikuinezhad (2012) compared the relative contributions of size and depth of vocabulary as well as grammatical knowledge to EFL reading comprehension. Results showed that while both vocabulary and grammar predicted reading, syntactic knowledge explained a larger variance in the reading comprehension scores. Quite recently, the role of both vocabulary size and depth in English for Academic Purposes (EAP) reading ability was examined by Taghizadeh and Khalili (2019) who reported that these two dimensions of lexical knowledge significantly predicted the academic reading skill of Iranian students. Compared to the reading skill, fewer studies have explored the link between vocabulary knowledge and Iranian EFL listening comprehension. Dabbagh (2016) aimed at finding the extent that vocabulary size and depth predicted EFL listening. He found that, unlike previous studies on vocabulary and reading that revealed a greater contribution for size, vocabulary depth was a stronger predictor for EFL listening comprehension. Baleghizadeh and Khaledian (2016) conducted the same research across different levels of listening proficiency. Contrary to the findings of Dabbagh's (2016) study, the results provided evidence that although both aspects explained the dependent variable, vocabulary size was a stronger determining variable. The contribution of both dimensions, however, was not significant for lower levels of listening proficiency. More recently, Afshari and Tavakoli (2017) undertook a similar study and reported the same results obtained by Baleghizadeh Khaledian (2016).

The size aspect of word knowledge has received more attention in the literature with many studies investigating its role in receptive skills, but, as argued by Uchihara and Clenton, (2018), the contribution of this dimension to productive skills has been rarely probed. Schmitt (2014) raised the same argument and pointed out that the association that size and depth of word knowledge could have with productive skills would be an interesting gap to be filled in future studies on vocabulary knowledge. In the context of Iran, a couple of studies have been conducted to probe the association between aspects of vocabulary knowledge and EFL writing (e.g., Atai & Dabbagh, 2010; Dabbagh & Janebi Enayat, 2019). The speaking skill, however, has not received any attention in the literature of vocabulary knowledge and productive skills in the Iranian context. Therefore, this study aimed at finding the role of vocabulary size, as one of the key aspects of word knowledge, in Iranian university EFL learners' oral proficiency.

Previous studies on the relationship between vocabulary and speaking had a number of limitations, which motivated this study to analyze the role of vocabulary size in EFL speaking further. First, the tests they used could not truly measure the construct of vocabulary size. Koizumi and In'nami (2013), for example, utilized translation tasks for finding the size of the students' word knowledge. This format is problematic as the test takers need to understand the meaning of the target words by matching the lexical item with a similar word or its definition in English. The well-known tests of vocabulary size like the VLT and VST follow these principles.

Another limitation concerns the speech samples collected by previous studies. They were mostly short and simple, making the comparison of the speaking performance with the oral proficiency required in real contexts difficult. Uchihara and Saito (2019) used speech samples that were only 30 seconds in length using picture description tasks. They thus recommended future research to obtain more representative samples. As for the format of the samples, Saito, Webb, Trofimovich, and Isaacs (2016) believed that utilizing simple tasks like picture description could not reflect the real nature of the speaking skill, so they suggested the use of more demanding tasks like IELTS speaking test that obtains longer speech samples in more real-life contexts.

Finally, the relative significance of mid- and low-frequency vocabulary size for L2 speaking performance has not been investigated in the literature. Previous studies (e.g., Alharthi, 2020; Koizumi & In'nami, 2013) mostly used measures of vocabulary that focused on the most frequent (first 3,000 word-frequency bands) and ignored the mid-frequency levels (3,000 to 9,000 word families) as well as the low-frequency bands (9,000+) (Schmitt & Schmitt, 2014).

2. Literature Review

2.1. Aspects of Vocabulary Knowledge and Their Measures

The construct of vocabulary knowledge has been developed in the fields of ESL/EFL (Schmitt, Ng, & Garras, 2011) despite the fact that it is a multidimensional and complex construct (Fitzpatrick & Clenton, 2017; Schmitt, 2014; Uchihara & Clenton, 2018). Different frameworks have been developed by vocabulary researchers to clarify this complexity (Henriksen, 1999; Meara, 2009; Nation, 2001, 2013; Read, 2007).

The dichotomy of receptive and productive vocabulary knowledge is perhaps the most ubiquitous subdivision in the literature of L2 lexical competency (Fitzpatrick & Clenton, 2017). While the receptive aspect relates to the reading and listening skills, the productive dimension pertains to the speaking and writing skills in second language acquisition. Put it simply, the receptive dimension of word knowledge is the kind of knowledge necessary for reading and listening whereas the productive dimension is required for the speaking and writing skills (Schmitt, 2010). In vocabulary testing, the test items require the test takers to either demonstrate their knowledge of a single lexical item in multiple-choice or matching formats or to produce the answer (in oral or written forms) in response to a cue of some kind.

The receptive and productive measures of word knowledge are also related to the two aspects of vocabulary size and depth. In fact, the tests of these two aspects are further subcategorized into receptive and productive measures. Vocabulary size, as defined by Schmitt (1999), is "an estimate of how many words testees have in their lexicons" (p. 191), and it has both receptive and productive measures which are mostly designed based on the binding principle of word frequency (Schmitt, Schmitt, & Clapham, 2001). Different tests have been designed for the receptive dimension of vocabulary size. The Vocabulary Levels Test (VLT) (Nation, 1983), is perhaps the most well-known one in the field. The Yes/No check (Meara & Jones, 1988; Meara & Miralpeix, 2017) and Vocabulary Size Test (VST) (Nation & Beglar, 2007) are other measures for size of word knowledge. As for the productive dimension of vocabulary size, fewer tests have been developed compared to the receptive aspect. In his review article, Schmitt (2014) argued that "most measurement and discussion of vocabulary to date have focused on size" (p. 915). The reason may lie behind the more difficult task of measuring productive vocabulary size compared to the receptive dimension (David, 2008; Fitzpatrick, 2007). Additionally, the complicated construct of productive vocabulary knowledge has been more challenging for researchers to define (Fitzpatrick & Clenton, 2017). Notwithstanding these obstacles, a few tasks and formats have been designed for this dimension, such as Productive Vocabulary Levels Test (PVLT) (Laufer & Nation, 1999) and Lexical Frequency Profile (LFP) (Laufer & Nation, 1995). The first one is a sentence completion task that requires test takers to restore incomplete words, while the second one is a free production task that elicits meaning-focused outputs like essays (Uchihara & Clenton, 2018).

Depth of vocabulary knowledge has received less attention in both receptive and productive dimensions (Schmitt, 2014). This aspect of word knowledge refers to the knowledge of lexical associations of a word built by syntagmatic and paradigmatic relations among words (Read, 1993; Schoonen & Verhallen, 2008). Syntagmatic associations are the linear lexical links between words in a sentence (e.g., kitchen-oven, kitchen-cupboard, and kitchen-cook), whereas paradigmatic links refer to hierarchical associations that connect lexical items through superordinate and subordinate relationships (e.g., bird-animal and bird-eagle). This construct of vocabulary depth has been assessed by a few receptive and productive test forms, but, compared to the tests of vocabulary size, "less progress has been made, both in defining depth as a construct and in developing tests for practical use" (Read, 2007, p. 105). In an attempt to measure productive vocabulary depth, Paribakht and Wesche (1997) developed the Vocabulary Knowledge Scale (VKS) that tests knowledge of single lexical units on a 6-point scale. The Word Associates Test (WAT) checks the receptive aspect of depth of word knowledge (Read, 1993). This measure uses the task of word associations and semantic relations among words to test the quality or depth of vocabulary knowledge.

In addition to the size and depth dimensions of vocabulary knowledge, another more recent aspect of lexical competency is the speed of processing which refers to how fast the L2 learners can recognize and retrieve words from their mental lexicon (Meara, 2005). This new dimension, which equals automaticity or fluency, is particularly important for real-life language uses (Koizumi & In'nami, 2013; Van Moere, 2012). Fluency is a key element in speaking proficiency, so this aspect of lexical competence could be specifically significant for L2 speaking, which needs spontaneous processing (Schmitt, 2010).

2.2. The Role of Vocabulary in Productive Skills

Very few studies have investigated the role of vocabulary knowledge in productive skills in general and speaking skill in particular. Atai and Dabbagh (2010), for example, investigated the role played by vocabulary depth in EFL use of semantic sets in writing across two proficiency levels. They reported that it had dissimilar roles for the lower- and upper-intermediate students. While depth of vocabulary assisted the lower-intermediate learners' production of semantic sets in their essays, no significant contribution was made for the upper-intermediate EFL students. In an attempt to study the simultaneous role of both size and depth of vocabulary in Iranian EFL students' descriptive writing ability, Dabbagh and Janebi Enayat (2019) found that, although both aspects were correlated with the dependent variable, only size of word knowledge was a significant predictor factor. They explained this finding with reference to the writing rubrics they used which put emphasis on lexical sophistication and vocabulary size.

Although the contribution of vocabulary size and depth to Iranian EFL learners' speaking ability has not yet been investigated, a few researchers have undertaken studies in other countries. De Jong, Steinel, Florijn, Schoonen, and Hulstijn (2012), for instance, studied the predictive power of sub-skills, including grammar, vocabulary, and pronunciation in L2 speaking ability. The results of their study showed that vocabulary knowledge and intonation significantly predicted oral proficiency. In another study, Koizumi and In'nami (2013) investigated the prediction of vocabulary size and depth in EFL speaking for Japanese students. The researchers found that the students who had larger vocabulary size had significantly better speaking performance.

In more recent studies, Uchihara and Saito (2019) examined the association between productive vocabulary knowledge with some aspects of L2 speaking. Findings demonstrated that the fluency aspect of L2 speech was linked to word knowledge. Miralpeix and Muñoz (2018) further analyzed the association between vocabulary size and reading, listening, speaking, and writing. Vocabulary size, as they found, predicted the speaking skill. Uchihara and Clenton (2018) also examined the link between the size aspect of vocabulary and L2 speaking ability for high-proficient language learners and reported that vocabulary size was significantly related to the component of vocabulary in the participants' speaking performance, but the students who had a higher vocabulary size did not necessarily produce more lexically sophisticated speeches. Alharthi (2020) recently studied if productive breadth or size of word knowledge was associated with EFL speaking. Results proved that whereas higher-frequency vocabulary predicted EFL oral proficiency, lower-frequency words could not have a significant association with the speaking ability of the students.

This study made an effort to find the contribution of high- to low-frequency vocabulary size to the overall speaking ability of Iranian university EFL students. The separate contribution of these word-frequency bands to the fluency and vocabulary dimensions of the students' speaking was also investigated. The following research questions were, therefore, addressed:

Research Question One: What is the contribution of vocabulary size scores at different word-frequency levels to the prediction of the Iranian EFL university students' L2 speaking ability?

Research Question Two: What is the contribution of vocabulary size scores at different word-frequency levels in the prediction of the fluency and coherence dimension of Iranian EFL university students' L2 speaking ability?

Research Question Three: What is the contribution of vocabulary size scores at different word-frequency levels in the prediction of the lexical resource dimension of L2 speaking ability?

3. Methodology

3.1. Participants

The participants of this research were 46 Iranian university EFL learners (14 boys and 32 girls) who were studying English Literature at Golestan University in 2018. They were selected using convenience sampling. The subjects were all proficient students as they all received a score above 24 out of 30 on the 2,000-word-frequency band of the VLT (Schmitt, 2008). Moreover, three PhD candidates of Teaching English as a Foreign Language (TEFL) were recruited to conduct the speaking sessions. To rate the recorded interviews, two experienced IELTS instructors were also employed. They were assistant professors of TEFL at Golestan University in Gorgan, Iran. The inter-rater reliability estimates are reported in Table 1.

3.2. Instruments

3.2.1. Vocabulary Levels Test (VLT)

The VLT (Nation, 1983) measures the vocabulary size of L2 learners using 120 matching format items to test knowledge of the examinees at 2,000-, 3,000-, 5,000-, and 10,000-word-frequency bands. It has been revised by Schmitt et al. (2001) and its Cronbach's alpha reliability estimate has reached .92 (Qian, 1999).

3.2.2. IELTS speaking test

The IELTS speaking test was used to assess the speaking ability of the participants. IELTS exam follows three parts to evaluate the oral proficiency of the candidates. In part one, the test takers have to answer some general questions on common topics like education, job, and hometown. In part two, a speaking card is given to the candidates with a title some key wh-questions written on it. The examinee has one minute to prepare for the topic and then speaks for 1-2 minutes. In the last part, some follow-up argumentative questions related to the topic of the second part are asked, and the candidate should use enough supporting evidence to answer them. Two speaking cards were used in the second part to obtain larger speech samples. All the three stages were covered for the speaking evaluation of the students.

3.3. Procedure

This study was part of a larger research project that investigated the extent that EFL learners' vocabulary size and depth could contribute to their speaking performance. To answer the research questions addressed in this paper, first, the participants took the VLT during a 30-minute session after receiving the instructions on how to answer the test items. The students were suggested to use informed guessing because the test had no penalties in its scoring system. After a few days, the IELTS speaking exam was administered using interviews with the participants. For this purpose, the PhD candidates of TEFL conducted the interviews in the offices at Golestan University. They first passed a training course on how to cover all the three stages of the IELTS speaking test. Consent forms were filled out by the students to record their speeches for the later assessment.

To rate the speaking performance of the students, two experienced IELTS trainers listened to the recorded speeches and scored them using the IELTS speaking band descriptors which provide a framework for the four dimensions of fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation (available from https://takeielts.britishcouncil.org/sites/default/files/speaking_band_descriptors_0.pdf). A band score of 1 to 9 was given to each participant. Several sessions were used for the rating process in order to reduce the fatigue effect on the part of the raters. Pearson correlations were run to check the agreement rate between the two raters and report inter-rater reliability. Table 1 shows the reliability coefficients for the overall speaking as well as its four components.

Table 1: Results of Correlation Coefficients for the Speaking Framework

	FC2	LR2	GRA	Pron.2	OS2
Fluency & coherence1	.835**				
Lexical resource1		.871**			
Grammatical range & accuracy1			.741**		
Pronunciation1				.851**	
Overall speaking1					.848**

Note: 1 = rater one; 2 = rater two, $^{**}p < 0.01$.

4. Results

4.1. Descriptive Statistics

The descriptive statistics for the scores on the VLT, each frequency band of the VLT, the overall speaking performance as well as its fluency and coherence and lexical dimensions are provided in Table 2. Results show that the scores on the VLT and its levels had acceptable estimates of reliability.

Table 2: Descriptive Statistics for all the Tests and Subtests (n = 46)

Test	MPS	Min.	Max.	Mean	SD	α
VLT	120	38	109	71.65	16.15	.88
2,000	30	24	30	28.13	1.97	.76
3,000	30	12	30	22.93	4.61	.79
5,000	30	3	29	15.32	6.71	.81
10,000	30	0	22	5.26	5.24	.83
Overall speaking	9.0	6.0	7.5	6.73	.49	
Fluency & coherence	9.0	6.0	8.5	7.29	.66	
Lexical resource	9.0	5.0	8.5	6.95	.86	

Note: MPS = Maximum possible score; SD = standard deviation; α = Cronbach's alpha.

4.2. Vocabulary size and overall EFL speaking ability

The research questions of this study aimed at finding the predictive power of each word-frequency level of the VLT for the test takers' overall speaking performance as well as its fluency/coherence and lexical resource dimensions. To answer these questions, hierarchical multiple regression analyses were undertaken by adding the 2,000-word-frequency level in the first block of variables and then adding the remaining 3,000-, 5,000-, and 10,000-word-frequency bands in the second, third, and fourth block, respectively. In each of the regression analyses, the tolerance level was above .20, indicating that the assumption of multicollinearity was met. Also, the assumption of homoscedasticity was satisfied by checking the scatterplots. As for the contribution of these word-frequency levels in the overall IELTS speaking, the insertion of the 2,000-word-frequency level in step one resulted in a model which could explain 33% of the variance in the dependent variable ($F(1, 44) = 21.66$, $p < .001$, $R^2 = .330$). Adding the 3,000-word-frequency band in step two provided an additional 38.9% of predictive power, yielding a model that could predict 71.9% of the variance in L2 speaking scores. The addition of the 5,000- and 10,000-word-frequency levels in steps three and four, respectively, could not add a significant value to the predictive power of the models (see Table 3).

The standardized beta weights also reaffirmed the strength of the relationship between the scores on the 3,000-word-frequency level and L2 speaking in steps two ($\beta = .793$, $t = 7.724$, $p < .001$), three ($\beta = .585$, $t = 4.009$, $p < .001$), and four ($\beta = .592$, $t = 4.067$, $p < .001$). In step four, although the entry of the last word-frequency level did not make a significant contribution, the scores on the 5,000-word-frequency level were moderately associated with increases in the dependent variable ($\beta = .361$, $t = 2.236$, $p < .05$) (see Table 3).

Table 3: Hierarchical Multiple Regression Analysis for Word-Frequency Levels in Overall L2 Speaking Ability

	R	R^2	ΔR^2	Unstandardized		Standardized
				B	SE *B*	β
Step 1	.574	$.330^{***}$				
Constant				2.715	.867	
2,000				.143	.031	$.574^{***}$
Step 2	.848	$.719^{***}$	$.389^{***}$			
Constant				4.200	.599	
2,000				.021	.026	.086
3,000				.084	.011	$.793^{***}$
Step 3	.862	$.743^{***}$	.023			
Constant				4.467	.597	
2,000				.020	.025	.078
3,000				.062	.016	$.585^{***}$
5,000				.019	.010	.261
Step 4	.866	$.750^{***}$	.007			
Constant				4.511	.596	
2,000				.016	.025	.063
3,000				.063	.016	$.592^{***}$
5,000				.026	.012	$.361^{*}$
10,000				-.012	.011	-.131

$^{*}p < 0.05$, $^{***}p < 0.001$.

4.3. Vocabulary size and fluency/coherence dimension of EFL speaking ability

Results of hierarchical multiple regression analysis showed that in the first step where only the 2,000-word-frequency band was inserted could predict 25.5% of the variance in the scores given to the fluency and coherence component of L2 speaking ($F(1, 44) = 15.06$, $p < .001$, $R^2 = .255$). Entering the 3,000-word-frequency level in step two added 36% to the predictive power, resulting in a model that could explain 61.5% of the variance in the dependent variable. Adding the 5,000-word-frequency level in step three provided an additional 7% of unique predictive power which was a significant change ($p < .01$), while the addition of the low-frequency level in step four provided a moderate explanatory power of 3.3% to the model ($p < .05$). Therefore, the last model, where all the word-frequency levels were entered, could explain 71.8% of the variance in the fluency and coherence dimension scores of L2 speaking, $F(4, 41) = 26.07$, $p < .001$, $R^2 = .718$ (see Table 4).

Appraisal of the standardized beta attributed to each of the word-frequency levels in the last step shows that only the 3,000- ($\beta = .387$, $t = 2.500$, $p < .05$) and 10,000-word-frequency levels ($\beta = .274$, $t = 2.179$, $p < .05$) added a significant contribution to the prediction of the fluency and coherence aspect of L2 speaking (see Table 4).

Table 4: Hierarchical Multiple Regression Analysis for Word-Frequency Levels in Fluency and Coherence Dimension

	R	R^2	ΔR^2	Unstandardized		Standardized
				B	SE *B*	β
Step 1	.505	$.255^{***}$				
Constant				2.519	1.233	
2,000				.170	.044	$.505^{***}$
Step 2	.785	$.615^{***}$	$.360^{***}$			
Constant				4.447	.946	
2,000				.012	.040	.035
3,000				.110	.017	$.762^{***}$
Step 3	.828	$.685^{***}$	$.070^{**}$			
Constant				5.070	.890	
2,000				.008	.037	.022
3,000				.058	.023	$.402^{*}$
5,000				.045	.015	$.453^{**}$

Step 4	.847	.718***	.033*			
Constant				4.945	.855	
2,000				.019	.036	.055
3,000				.056	.022	.387*
5,000				.024	.017	.244
10,000				.035	.016	.274*

*p < 0.05, **p < 0.01, ***p < 0.001.

4.4. Vocabulary size and lexical resource dimension of EFL speaking ability

The entry of the first word-frequency band in step one generated a model that could explain 39.8% of the variance in the students' scores on the lexical resource aspect of L2 speaking ($F(1, 44) = 29.06$, $p < .001$, $R^2 = .398$). Inserting the 3,000-word-frequency level in step two provided an additional 25.7% to the predictive power of the second model that explained 65.5% of the variance in this variable. In step three, the addition of the 5,000-word-frequency level increased the explanatory power to 73.1%, and, in the final step, the insertion of the 10,000-word-frequency level provided an insignificant predictive power of 1.5% to the last model ($p < .05$) that could predict 74.6% of the variance in the lexical resource dimension scores of L2 speaking, $F(4, 41) = 30.14$, $p < .001$, $R^2 = .746$ (see Table 5).

Comparison of the standardized beta weights given to all the word-frequency levels in the final step further indicated that the mid-frequency word-level of 5,000 ($\beta = .331$, $t = 2.033$, $p < .05$) and the high-frequency band of 2,000 ($\beta = .243$, $t = 2.407$, $p < .05$) contributed significantly to the prediction of the lexical resource dimension of L2 speaking (see Table 5).

Table 5: Hierarchical Multiple Regression Analysis for Word-Frequency Levels in Lexical Resource

	R	R^2	ΔR^2	Unstandardized		Standardized
				B	SE *B*	β
Step 1	.631	.398***				
Constant				-.792	1.441	
2,000				.275	.051	.631***
Step 2	.809	.655***	.257***			
Constant				1.324	1.165	
2,000				.102	.050	.234*
3,000				.120	.021	.644***
Step 3	.855	.731***	.076**			
Constant				2.170	1.069	
2,000				.096	.044	.221*
3,000				.050	.028	.267
5,000				.061	.018	.474**
Step 4	.864	.746***	.015			
Constant				2.059	1.053	
2,000				.106	.044	.243*
3,000				.048	.027	.256
5,000				.42	.021	.331*
10,000				.031	.020	.188

*p < 0.05, **p < 0.01, ***p < 0.001.

5. Discussion and Conclusion

The focus of this study was investigating the relative contribution of high-, mid-, and low-frequency vocabulary to the overall speaking performance of Iranian university EFL students by finding the separate predictive power of each word-frequency band of the VLT, a test of receptive vocabulary size, in IELTS speaking exam. The same relationship was examined for the fluency and lexical aspects of the EFL speaking ability as well.

Results for the first research question showed that the 3,000-word-frequency band had the highest contribution to L2 overall speaking ability. Put it simply, this study revealed that high-frequency vocabulary could significantly predict L2 speaking, while knowledge of low-frequency words was not predictive of this variable. Schmitt and Schmitt (2014) reassessed the traditional word-frequency levels that identified the first 2,000-word-frequency bands as the high-frequency vocabulary and the levels beyond this threshold up to the 10,000-word-frequency band and above as the low-frequency vocabulary. They used the empirical evidence provided by Nation (2006) to claim that these boundaries need to be revisited based on pedagogic grounds. Nation (2006) analyzed written and spoken corpora to find the percentage of text coverage by each word-frequency level. Results showed that the coverage beyond the 3,000-frequency dropped below 3%, indicating that vocabulary size over this level is unlikely to make a great contribution to language use. For unassisted reading comprehension of diverse authentic genres, Nation (2006) reported that a vocabulary size of 9,000-word families is required. Accordingly, Schmitt and Schmitt (2014) recognized the first 3,000-word-frequency bands as the most frequent vocabulary and word frequencies beyond 9,000 as the least frequent vocabulary. They labeled the levels in between as the mid-frequency vocabulary.

Milton (2009) and Uchihara and Clenton (2018) also reported that the role of vocabulary size beyond the 2,000-word families becomes diminishing in L2 speaking. This could be explained by the fact that the purpose of communication is not to use complex and infrequent words, but to get the meaning across using simple words for the audience (Saito et al., 2016). The speakers could use the most frequent words to express themselves without trying to include sophisticated lexical items in their speech. More recently, Alharthi (2020) further revealed that only knowledge of the 2,000- and 3,000-word-frequency levels made a contribution to the prediction of EFL speaking. This is consistent with the empirical evidence obtained from corpus analysis that 95% of conversational discourse is covered by these levels. Similarly, Dabbagh and Janebi Enayat (2019) found that whereas the mid-frequency vocabulary predicted the EFL students' overall descriptive writing performance, the low-frequency vocabulary was the determining variable for the lexical dimension of their writing performance.

Having knowledge of the most frequent 3,000word families was also predictive of the fluency aspect of Iranian EFL students' speaking ability. This means that high-frequency vocabulary could assist the participants to use the language with fewer pauses in their speech as they did not need to search for the right lexical items. The high coverage of these word-frequency bands could help the IELTS candidates to speak more fluently and have more coherence in their oral performance. This is in line with Uchihara and Saito (2019), who found that students who were more lexically proficient had more fluency in speech, making fewer repetitions and pauses.

The last research question provided empirical evidence that the 5,000-word-frequency band, which is among the mid-frequency word levels (Schmitt & Schmitt, 2014), was predictive of the lexical component of Iranian university EFL students. The rather more significant role of vocabulary size and using less frequent vocabulary in the lexical dimension of IELTS speaking could be explained by the emphasis put on the use of infrequent words in the rating rubrics (Saito et al., 2016). The rubrics in the IELTS speaking framework encourage the use of low-frequency vocabulary. This is also in line with Dabbagh and Janebi Enayat (2019), who found that low-frequency vocabulary contributed to the lexical dimension of L2 descriptive writing.

The significant contribution of high-frequency vocabulary to EFL speaking point to the importance of vocabulary size instruction at these levels in speaking courses without spending much time and energy on teaching and learning low-frequency vocabulary that makes little contribution to oral proficiency. Some teachers and learners have the wrong perception that the inclusion of infrequent vocabulary in speaking could remarkably impress the IELTS examiners, while this could only affect the lexical aspect of oral ability and not the whole performance. Therefore, materials writers are advised to pay more attention to these word-frequency bands in textbooks designed for developing the speaking ability of L2 learners, especially the IELTS candidates. Test developers need to move away from an overemphasis on using infrequent vocabulary and lexical sophistication in speaking rubrics for oral proficiency.

This study had a couple of limitations which could be addressed in future research endeavors. First, this study used a receptive measure of vocabulary size to find its association with a productive skill. It is suggested that further research projects use productive measures like the PVLT (Laufer & Nation, 1999) and LFP (Laufer & Nation, 1995). Additionally, the inclusion of other aspects of word knowledge like depth of vocabulary could further reveal the contribution of vocabulary size in interaction with other dimensions. Janebi Enayat and Derakhshan (unpublished manuscript) have made an effort to compare the contribution of size and depth of word knowledge to L2 speaking ability. Other studies could also investigate the effects of long-term instruction of these aspects on the oral proficiency of EFL students.

Acknowledgments
This work was supported by Golestan University under the grant number 971641.

References

Afshari, S., & Tavakoli, M. (2017). The relationship between depth and breadth of vocabulary knowledge and Iranian EFL learners' listening comprehension. *International Journal of Research Studies in Language Learning*, *6*(3), 13-24.

Akbarian, I. H. (2010). The relationship between vocabulary size and depth for ESP/EAP learners. *System*, *38*(3), 391-401.

Alharthi, T. (2020). Investigating the relationship between vocabulary knowledge and FL speaking performance. *International Journal of English Linguistics*, *10*(1), 37-46.

Atai, M. R., & Dabbagh, A. (2010). Exploring the role of vocabulary depth and semantic set in EFL learners' vocabulary use in writing. *Teaching English Language*, *4*(2), 27-49.

Atai, M. R., & Nikuinezhad, F. (2012). Vocabulary breadth, depth, and syntactic Knowledge: Which one is a stronger predictor of foreign language reading performance? *Iranian Journal of Applied Linguistics (IJAL)*, *15*(1), 1-18.

Baleghizadeh, S., & Khaledian, P. (2016). Investigating the relationship between depth and breadth of vocabulary knowledge and listening comprehension across different proficiency levels among Iranian EFL learners. *International Journal for 21st Century Education*, *3*(Special), 63-75.

Cheng, J., & Matthews, J. (2018). The relationship between three measures of L2 vocabulary knowledge and L2 listening and reading. *Language Testing*, *35*(1), 3-25.

Dabbagh, A. (2016). The predictive role of vocabulary knowledge in listening comprehension: Depth or breadth? *International Journal of English Language & Translation Studies*, *4*(3), 1-13.

Dabbagh, A., & Janebi Enayat, M. (2019). The role of vocabulary breadth and depth in predicting second language descriptive writing performance. *The Language Learning Journal*, *47*(5), 575-590.

David, A. (2008). Vocabulary breadth in French L2 learners. *The Language Learning Journal*, *36*(2), 167-180.

De Jong, N. H., Steinel, M.P., Florijn, A.F., Schoonen, R., & Hulstijn, J.H. (2012). Facets of speaking proficiency. *Studies in Second Language Acquisition*, *34*(1), 5-34.

Derakhshan, A., & Kaivanpanah, S. (2011). The impact of text-messaging on EFL freshmen's vocabulary learning. *EUROCALL Review*, *19*, 47-56.

Faghih, E., & Nemati, F. (2014). Breadth or depth: The role of vocabulary knowledge in Iranian EAP students' reading comprehension performance. *Journal of English Language Pedagogy and Practice*, *7*(14), 40-52.

Fitzpatrick, T. (2007). Productive vocabulary tests and the search for concurrent validity. In H. Daller, J. Milton, & J. Treffers-Daller (Eds.), *Modelling and assessing vocabulary knowledge* (pp. 116-132). Cambridge: Cambridge University Press.

Fitzpatrick, T., & Clenton, J. (2017). Making sense of learner performance on tests of productive vocabulary knowledge. *TESOL Quarterly*, *51*(4), 844-867.

Henriksen, B. (1999). Three dimensions of vocabulary development. *Studies in Second Language Acquisition*, *21*(2), 303-317.

Janebi Enayat, M., & Babaii, E. (2018). Reliable predictors of reduced redundancy test performance: The interaction between lexical bonds and test takers' depth and breadth of vocabulary knowledge. *Language Testing*, *35*(1), 121-144.

Janebi Enayat, M., & Derakhshan, A. (unpublished manuscript). Vocabulary size and depth as predictors of second language speaking ability.

Kaivanpanah, S., & Zandi, H. (2009). The role of depth of vocabulary knowledge in reading comprehension in EFL context. *Journal of Applied Sciences*, *9*(4), 698-706.

Koizumi, R., & In'nami, Y. (2013). Vocabulary knowledge and speaking proficiency among second language learners from novice to intermediate levels. *Journal of Language Teaching and Research*, *4*(5), 900-913.

Laufer, B., & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 writing production. *Applied Linguistics*, *16*(3), 307-322.

Laufer, B., & Nation, P. (1999). A vocabulary-size test of controlled productive ability. *Language Testing*, *16*(1), 33-51.

Matthews, J., & Cheng, J. (2015). Recognition of high frequency words from speech as a predictor of L2 listening comprehension. *System*, *52*(1), 1-13.

Meara, P. (2009). *Connected words: Word associations and second language vocabulary acquisition*. Amsterdam: John Benjamins.

Meara, P., & Jones, G. (1988). Vocabulary size as a placement indicator. In P. Grunwell (Ed.), *Applied linguistics in society* (pp. 80-87). London: CILT.

Mehrpour, S., Razmjoo, S. A., & Kian, P. (2011). The relationship between depth and breadth of vocabulary knowledge and reading comprehension among Iranian EFL learners. *Journal of English Language Teaching and Learning*, *2*(222), 97-127.

Milton, J. (2013). Measuring the contribution of vocabulary knowledge to proficiency in the four skills. In C. Bardel, C. Lindquist, & B. Laufer (Eds.), *L2 vocabulary acquisition, knowledge and use: New perspectives on assessment and corpus analysis* (pp. 57-78). EUROSLA Monographs.

Miralpeix, I., & Muñoz, C. (2018). Receptive vocabulary size and its relationship to EFL language skills. *International Review of Applied Linguistics in Language Teaching*, *56*(1), 1-24.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nation, I. S. P. (2006). How large a vocabulary is needed for reading and listening? *Canadian Modern Language Review*, *63*(1), 59-82.

Nation, I. S. P., & Webb, S. (2011). *Researching and analyzing vocabulary*. Boston, MA: Heinle Cengage Learning.

Nation, I.S.P. (2013). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nation, P. (1983). Testing and teaching vocabulary. *Guidelines*, *5*(1), 12-25.

Nation, P., & Beglar, D. (2007). A vocabulary size test. *The Japan Association for Language Teaching*, *31*(7), 9-12.

Paribakht, T.S., & Wesche, M. (1997). Vocabulary enhancement activities and reading for meaning in second language vocabulary acquisition. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy* (pp. 174-200), Cambridge: Cambridge University Press.

Qian, D.D. (1999). Assessing the roles of depth and breadth of vocabulary knowledge in reading comprehension. *The Canadian Modern Language Review*, *56*(2), 282-307.

Qian, D.D., & Schedl, M. (2004). Evaluation of an in-depth vocabulary knowledge measure for assessing reading performance. *Language Testing*, *21*(1), 28-52.

Rashidi, N., & Khosravi, N. (2010). Assessing the role of depth and breadth of vocabulary knowledge in reading comprehension of Iranian EFL learners. *Journal of Pan-Pacific Association of Applied Linguistics*, *14*(1), 81-108.

Read, J. (1993). The development of a new measure of L2 vocabulary knowledge. *Language Testing*, *10*(3), 355-371.

Read, J. (2004). Research in teaching vocabulary. *Annual Review of Applied Linguistics*, *24*, 146-161.

Read, J. (2007). Second language vocabulary assessment: Current practices and new directions. *International Journal of English Studies*, *7*(2), 105-125.

Saito, K., Webb, S., Trofimovich, P., & Isaacs, T. (2016). Lexical profiles of comprehensible second language speech: The role of appropriateness, fluency, variation, sophistication, abstractness and sense relations. *Studies in Second Language Acquisition*, *38*(4), 677-701.

Schmitt, N. (1999). The relationship between TOEFL vocabulary items and meaning, association, collocation and word-class knowledge. *Language Testing*, *16*(2), 189-216.

Schmitt, N. (2008). Review article: Instructed second language vocabulary learning. *Language Teaching Research*, *12*(3), 329-363.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. London: Palgrave Macmillan.

Schmitt, N. (2014). Size and depth of vocabulary knowledge: What the research shows. *Language Learning*, *64*(4), 913-951.

Schmitt, N., Ching Ng, J.W., & Garras, J. (2011). The word associates' format: Validation evidence. *Language Testing*, *28*(1), 105-126.

Schmitt, N., & Schmitt, D. (2014). A reassessment of frequency and vocabulary size in L2 vocabulary teaching. *Language Teaching*, *47*(4), 484-503.

Schmitt, N., Schmitt, D., & Clapham, C. (2001). Developing and exploring the behavior of two new versions of the Vocabulary Levels Test. *Language Testing*, *18*(1), 55-88.

Schoonen, R. & Verhallen, M. (2008). The assessment of deep word knowledge in young first and second language learners. *Language Testing*, *25*(2), 211-236.

Taghizadeh, M., & Khalili, M. (2019). Investigating engineering students' academic reading comprehension: The contribution of attitude, breadth and depth of vocabulary knowledge. *Iranian Journal of English for Academic Purposes*, *8*(1), 49-66.

Uchihara, T., & Clenton, J. (2018). Investigating the role of vocabulary size in second language speaking ability. *Language Teaching Research*. First published date: September-10-2018.

Uchihara, T., & Saito, K. (2019). Exploring the relationship between productive vocabulary knowledge and second language oral ability. *The Language Learning Journal*, *47*(1), 64-75.

Van Moere, A. (2012). A psycholinguistic approach to oral language assessment. *Language Testing*, *29*(3), 325-344.

Zhang, L. J., & Anual, S. B. (2008). The role of vocabulary in reading comprehension: The case of secondary school students learning English in Singapore. *RELC Journal*, *39*(1), 51-76.