

Lexical Inferencing in Listening: Depth of Vocabulary Knowledge and Listening Proficiency

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Abstract

Lexical inferencing as an efficient strategy to deal with unfamiliar words is suggested to be the most commonly used strategy among students, thus it has attracted much attention in the comprehension literature. While literature abounds with inferencing studies in reading, few studies have delved into the processes involved in listening. This study sought to investigate the role of depth of vocabulary knowledge (DVK) in lexical inferencing success and determine the relationship between students' DVK and listening proficiency. To this end, 56 upper-intermediate TOEFL applicants from 2 language institutes in Iran participated in this study. The participants were assigned to three levels of High- Mid- and Low-proficiency and in a consequent session were required to take the 40-item DVKT (Depth of Vocabulary Knowledge Test). In the final step the students sat for the lexical inferencing task and were required to identify the meaning of 17 unfamiliar words in 8 listening excerpts. The results indicated that DVK was a determining factor in lexical inferencing success, and that there was a positive relationship between students' DVK and their listening proficiency.

Keywords: lexical inferencing, strategy, listening, DVK

1. Introduction

Vocabulary knowledge underlies a number of language abilities such as L2 proficiency and reading (Grabe & Stoller, 2002; Schmitt, Jiang & Grabe, 2011). It is believed that vocabulary can be regarded as an accurate predictor of a text's difficulty (Nation & Coady, 1988). It is estimated that a 98% coverage of words is needed for comprehension of texts (Schmitt et al., 2011). He believes that in order to function in English, vocabulary as large as 8000–9000 word families is needed for an adequate reading, and as many as 5000–7000 families for functioning in oral discourse (Schmitt, 2008). This is while Laufer (2000) reports that the real size of vocabulary for high-school/university students of English was around 1000 to 4000. Therefore acquiring a vocabulary size of 7000 to 8000 families for coverage of 98-99% of the text sounds an unreasonable, unattainable task. This indicates a need for strategy use since despite the size of the vocabulary knowledge there are always some vocabularies in every text that are unfamiliar. Different strategies are associated with different skills and subskills. Chamot and Kupper (1989) associate strategies of elaboration and inferring with listening comprehension. Making guesses and inferencing are both handy for L2 listening and reading. Haastrup (1991) defines lexical inferencing as “making informed guesses as to the meaning of a word in light of all available linguistic cues in combination with the learners' general knowledge of the world, her awareness of context and her relevant linguistic knowledge” (p. 197). Various studies have indicated the vital role of guessing and inferencing and the learner's tendency to utilize the strategy (Fraser, 1999; Paribakht & Wesche, 1999) One of the prevailing cognitive processes in reading is claimed to be inferencing (Nassaji, 2004). He concludes that “lexical inferencing has been found to be the mostly widely used by L2 learners” (p. 647). Inferencing is an adequate strategy but as stated by Cai and Lee (2010a): “While much research has been done on unfamiliar word processing in reading comprehension, empirical studies specifically investigating this issue in listening comprehension are still limited. Not much is known about how L2 learners process unfamiliar words in listening comprehension” (p. 126).

2. Review of the Related Literature

2.1 *Lexical Inferencing*

Goh (2000) reported that half of students' comprehension problems could be attributed to word recognition and attention failure in perceptual processing of materials. Kurita (2012) regards Vocabulary knowledge as a critical predictor of listening comprehension, he notes that encountering unknown vocabularies might cause listening anxiety and may inhibit deep comprehension. Lexical inferencing as an efficient strategy can be used to deal with unknown words in texts and in fact based on the literature; it is one of the mostly used strategies among EFL learners. Guessing and inferring are two handy strategies for L2 comprehension for students. Fraser's (1999) study, for instance, suggested that 58% of the total strategy use was dedicated to inferencing and Paribakht and Wesche (1999) indicated 80% use of inferencing strategy among students. Also in his study, Nassaji (2003) concluded that “lexical inferencing has been found to be the mostly widely used by L2 learners” (p. 647).

While there are researches that investigated strategy use focusing on reading or writing skills

(Bengeleil & Paribakht, 2004; Huckin & Bloch, 1993; Kaivanpanah & Alavi, 2008; Kern, 1989; Lee & Wolf, 1997; Parel, 2004; Paribakht & Wesche, 1999; Riazi & Babaei, 2008), studies that have investigated the issue in listening mode are quite rare (Cai & Lee, 2010b; Cai & Wu, 2007). Little is known of lexical inferencing in listening and the factors influencing inferencing success in an Iranian context. Cai and Lee (2010b) suggested that contextual clues and language proficiency levels influenced unfamiliar word processing in listening. Lee and Cai (2010) reported the same results and demonstrated that language proficiency actually affects students' use of strategies.

2.2 Factors Influencing Inferencing Success

Different factors have been reported to have influences on lexical inferencing of students. Paribakht (2005) categorizes these factors into two broad categories of contextual and learner-related factors. Based on the previous studies learner-related factors include factors such as learners' previous L2 learning experience (Fraser, 1999; Paribakht & Wesche, 1999, 2006), learner's native language (Paribakht, 2005), learners' attention to text details (Frantzen, 2003), learners' depth of vocabulary knowledge (Nassaji, 2003, 2004; Qian, 1998, 2002, 2005) learners' sight vocabulary, their background knowledge and topic familiarity (Pulido, 2004, 2007; Atef-Vahid, Maftoon & Zahedi, 2013).

2.3 Depth of Vocabulary Knowledge

Various aspects have been associated with word knowledge (Nation, 1990, p31). Qian and Schedl (2004) regard vocabulary as a multidimensional knowledge consisting of depth and breadth. Some researchers such as Schmitt and Meara (1997) and Wesche and Paribakht (1996) noted that to consider merely the breadth of vocabulary knowledge is not of much value since it ignores the more important aspect of word knowledge and that words can be known for a greater or lesser extent. While breadth of vocabulary knowledge refers to size of vocabulary a person knows at a particular level of competence (Nation, 2001), depth of vocabulary knowledge refers to components such as pronunciation, spelling, meaning, register, frequency, and morphological, syntactic, and collocational properties.

It has been acknowledged in recent years that vocabulary is an efficient predictor of students' language performance (Milton et al., 2010; Schoonen, 2010; Stahr, 2008). This is while most researches focus on the size (breadth) of vocabulary knowledge and ignore the more important aspect or depth of vocabulary knowledge. The few studies focusing on depth of vocabulary knowledge and language performance are in the realm of reading (Stahr, 2008). It is reported in the literature that Depth of vocabulary knowledge deeply influences reading comprehension (Akbarian, 2010; Farvardin & Koosha, 2011; Mehrpour, Razmjoo & Kian, 2011; Qian, 1998; Rashidi & Khosravi, 2010). Little evidence exists as to the role of depth of vocabulary knowledge on listening performance of the students. Stahr (2008) and Wang (2015) reported a positive relationship between depth of vocabulary knowledge and listening performance.

On the other hand the role of depth of vocabulary knowledge in lexical inferencing success while reading has been investigated widely and literature supports the positive impact of depth of vocabulary knowledge on comprehension (Ehsanzadeh, 2012; Farahani, 2006; Kaivanpanah

& Soltani-Moghadam; Kaivanpanah & Zandi, 2009). This is while the role of depth of vocabulary on lexical inferencing in listening and the possible relationship between listening proficiency and depth of vocabulary has not yet been investigated.

3. The Present Study

While lexical inferencing seems to be a crucial strategy to deal with unknown words and increase comprehension, and taking into account the vitality of listening comprehension, in an Iranian context lexical inferencing in listening has been left untouched. With regard to the fact that vocabulary is a determining factor in comprehension, and since depth of vocabulary is a factor that might affect students' lexical inferencing success, this study aims to investigate the role of depth of vocabulary knowledge. Having this introduction in mind, the following research questions will be addressed in this study:

1. Is there any relationship between Iranian EFL learners' depth of vocabulary knowledge and their lexical inferencing success?
2. Is there a relationship between students' depth of vocabulary knowledge and their listening proficiency?

4. Methodology

4.1 Participants

A total of 56 male and female students, from two language institutions in Iran, UTLC in Tehran and Zaban-Sara in Zanjan, participated in this study. The students were attending the TOEFL preparation courses and according to the institute placement test they were all upper-intermediate students with regard to their proficiency. The rationale for choosing this proficiency level was to make sure that the students were proficient enough to make inferences. The participants shared their first language as well as their cultural and societal backgrounds. They were university students in different fields both in state and open universities. Their age ranged from 18 to 35. Worthy of note is that some of them were excluded from the analysis, in the cases that they could not complete all the steps of the study; so having gone through all the steps of the study left us with 56 participants (out of 90) for analysis.

4.2 Instruments

4.2.1 TOEFL-PBT Listening Test

The listening section of a TOEFL-PBT taken from a TOEFL-PBT kit (published in 2005) was used to measure the subjects' listening proficiency. The participants were told about the purpose of the study and what they were expected to do in the first 5 minutes and sat for the test for 35 minutes and answered the multiple choice items following the listening excerpts. The total score was 50, based on which the participants were assigned into Low- High and Mid-proficiency levels.

4.2.2 DVKT

For assessing the participants' depth of vocabulary knowledge the students were required to

take the depth of vocabulary knowledge test (DVKT), developed by Qian and Schedl (2004). This test consists of two parts the first of which is related to polysemy and synonymy, and the second to collocations. The participants were asked to choose an alternative and write it in the answer sheet they were provided with. The test consisted of 40 items, for each of them four correct choices were to be selected, therefore the total score was 160.

4.2.3 Lexical Inferencing Task

The students were provided with some listening excerpts which were chosen from a TOEFL-PBT listening subset, each containing 1 to 4 unfamiliar words for inferencing purposes. The listening materials consisted of 4 conversations and 2 lectures as with the TOEFL-PBT listening section. The 8 texts ranged from short conversations of 20 words in 6 seconds of listening and long conversations of around 30 seconds to lectures of 1.5 minutes length. In order to guarantee the appropriateness (being comprehensible with regard to the students' level) of the listening, the excerpts were selected from a TOEFL-PBT test. A panel of 4 teachers checked the appropriateness of the excerpts and the inferencibility of the words. In order to check for the practical issues, a pilot test was conducted with 10 participants similar to the population of the main study in terms of proficiency to check for the comprehensibility of the texts. Haastrup's (1991) set of criteria were taken into account in the next step. Only content words were included and the words instigated the use of different knowledge sources ("Chorus", "subsidized", "drilling" for example represented the use of interlingual cues. "unbeknownst" and "reenactment" were words to be inferred using only intralingual cues) and included diverse comprehension processes (for example the use of affixes; biosphere", "reenactment", "repellent").

In a final step Nation's (1985) criterion was taken into account: that in order to infer word meanings a high percentage (95%) of the words in the co-text should be familiar to students. To keep up with this criterion and as the teachers suggested the word "torso" was omitted and the percentage of unfamiliar text was counted with the following formula: All the words unknown to the students divided by all the words of the texts multiplied by 100. For all the texts the unfamiliarity percent was found to be ranging from 2 to 5 which is acceptable and agrees with the 95% proposed by Nation (2006). Also to make sure that there was a 95 to 98 % of understanding, the students were allowed to ask for the meaning of unknown words other than those to be inferred. Finally all these processes left the study with 17 words in 8 listening excerpts the appropriateness of which was previously affirmed by the pilot study and the 2 teachers of the same institutes.

4.2.4 Vocabulary Knowledge Scale

To ensure that none of the participants had any previous knowledge of the vocabularies, the Wesche and Paribakht's (1996) vocabulary knowledge scale was used. The students were asked to indicate whether they knew a word and choose one of the items of the scale.

4.3 Procedure

The participants of the study were all upper-intermediate and advanced learners of English taking different TOEFL courses at three levels. Since there was no possibility of a test

administered at the same time with all the participants, and the participants were in different classes and at two different institutes in Tehran and in Zanjan, the tests were held in each class at different times. For each test of the study half the test-time was taken from the class time and the other half from the learners who accepted to stay the extra time in the class.

In order to answer the 2nd research question, listening proficiency of the students had to be tested to categorize the students into three levels of High, Mid and Low proficiency and correlate the proficiency level with depth of vocabulary knowledge. In order to examine the listening proficiency of the students, a listening subset of TOEFL-PBT was utilized. The test was of three sections and 50 items which would take 35 minutes. Another 5 minutes at the beginning of the test was dedicated to explaining the test sections and procedures so that the students knew the aim of the test and got familiar with its' sections and therefore were more willing to cooperate. All in all this phase of the study lasted for 40 minutes.

In the next session and to examine the learners' depth of vocabulary knowledge the DVKT was distributed to the students, with 40 items and 35 minutes to answer the items. The first 5 minutes again was dedicated to spelling the test features and how the students were going to answer the items. Here, before the last phase of the study which was administering the lexical inferencing task, a pilot study with 10 participants with the same features as the participants of the study was conducted in order to check for the reliability of the task and for the consideration of possible flaws. Finally in the third and the last phase of the study, the lexical inferencing task was given to the students to examine their lexical inferencing success, in order to investigate the possible correlations.

4.4 Data Collection

All the students were required to take a TOEFL-PBT listening subset which consisted of 50 multiple choice items. The test took 40 minutes totally, with 35 minutes for the test and another 5 minutes of familiarizing the students with the purpose of the test and the process of the exam. The test was worth a point for each item which made 50 points totally, based on which the students were assigned to 3 levels of proficiency namely High Mid and Low. In the next step, the students were required to take the DVKT developed by Qian and Schedl (2004), which was regarded as a representative of students' depth of vocabulary knowledge. Next in another session the participants sat for the lexical inferencing task.

Before starting the task the students were informed of the purpose of the study and were given some overall information on what they were supposed to do with the data and how the task would be like. The unfamiliar vocabulary was played individually and to ensure that they did not have any previous knowledge of them they took the knowledge of the vocabulary scale developed by Wesche and Paribakht (1996). After indicating their knowledge of the vocabularies in the scale the papers were collected and then they listened to the conversations and the lectures and reported the meanings they had guessed in the answer sheet they were provided with before the task.

4.4.1 Scoring

The tests were scored. The TOEFL-PBT listening subset consisted of 50 items, assigning

each item one point, thus the score the students obtained could range from zero to 50 based on which the participants were categorized into 3 groups of proficiency. In order to determine the DVKT results, the number of correct choices was counted; the test consisted of 40 items, each item had 8 alternatives out of which 4 correct choices were to be selected. Therefore the DVKT could score 160 maximally. To check the third study instrument namely the inferencing task, the answer sheets were corrected by the researcher and another teacher separately. The process of scoring the success or failure of the inferencing task included 3 steps of scoring separately, matching the two sets of scores and finally adjusting for the difference for a high percentage of agreement. Each item could have a value of 0 to 2 points depending on the degree of correctness according to Nassaji (2003)'s criteria, semantically, syntactically and contextually appropriate responses were regarded as totally successful receiving 2 scores, semantically appropriate but syntactically deviant responses or the opposite were regarded as partially successful and received 1 point, responses that did not meet any of the conditions were totally wrong and received 0. There were 17 target words in the lexical inferencing task thus the total score for the task ranged from 0 to 34 scores. After the scoring step the scores were matched and a 94 percent agreement resulted, disagreements were then discussed and then an agreement of 100 percent was achieved.

5. Results

5.1 Students' Depth of Vocabulary Knowledge and their Lexical Inferencing Success

A regression was performed to determine how much of the inferencing scores' variance is explained by the depth of vocabulary knowledge. The results appear in tables 1 and 2, the results indicate that the DVKT scores define 48 percent of the inferencing task success.

Table 1. Model fit

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.693a	0.48	0.47	4.675	0.48	50.713	1	55	0.000

a Predictors: (Constant), DVKT

b Dependent Variable: Inferencing Task

Table 2. ANOVA results for regression analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1108.429	1	1108.429	50.713	0.000
Residual	1202.132	55	21.857		
Total	2310.561	56			

a Dependent Variable: Inferencing Task

b Predictors: (Constant), DVKT

The Sig. value as presented in table 4.6. is 0.00 which is much less than the 0.05 criterion and thus acceptable.

In the Table 3. the unstandardized coefficient for DVKT is 0.199. In order to check its significance a t-test was conducted. The sig is 0.00 as shown in the table; therefore the DVKT affects lexical inferencing success of the students.

Table 3. Coefficientsa

	Unstandardized Coefficients		Standardized Coefficients		T	Sig.
	B	Std. Error	Beta			
(Constant)	-6.262	2.605	---		-2.404	0.02
DVKT	0.199	0.028	0.693		7.121	0.000

a Dependent Variable: Inferencing Task

5.2 Students' Depth of Vocabulary Knowledge and Their Listening Proficiency

In order to investigate the relationship between students' depth of vocabulary knowledge and their listening proficiency, Pearson's correlation was used. Table 4 shows the result.

Table 4. Correlation between DVK and listening proficiency

N	Correlation	Sig.
57	0.948	0.000

As indicated in Table 4, the sig is 0.00; therefore there is a significant positive relationship between students' depth of vocabulary and their listening proficiency.

6. Discussion

Lexical inferencing performance of Iranian EFL learners was investigated to determine if their DVK could predict their lexical inferencing performance. The results of the study indicate that the learners' DVK might be a determining factor in their lexical inferencing attempts, in a way that the students who obtained better scores in the DVK were more successful in generating correct inferences when encountered with the Target words. This result is in line with Nassaji's (2004) findings that the richness of learners' pre-existing semantic system significantly influences their lexical inferencing performance. It should be mentioned that the semantic richness is gained gradually and with improvements in learners' proficiency which also supports the finding as to the role of listening proficiency in inferencing. One justification for this finding can be that as Nassaji (2003) claims learners with deeper vocabulary knowledge are more successful in making use of the knowledge sources available and can efficiently make semantic networks through the text and thus make more correct guesses. This finding also highlights the importance of the role of lexical knowledge and how it can be helpful in the process of making semantic frameworks and

achieving thorough understanding of the texts.

The results of the study also highlight the relationship between listening proficiency and depth of vocabulary. This finding is in line with previous research which emphasized the role of depth of vocabulary knowledge in skill performances (Milton et al., 2010; Schoonen, 2010) as well as in reading comprehension (Akbarian, 2010; Farvardin & Koosha, 2011; Mehrpour, Razmjoo & Kian, 2011; Qian, 1998; Rashidi & Khosravi, 2010). The results also are in line with previous research pertaining to the role of vocabulary knowledge (Wang, 2015) and depth of vocabulary knowledge in particular (Stahr, 2008) in listening comprehension.

7. Conclusions and Implications

With regard to the fact that vocabulary is vital for language use and that lexical inferencing can be an efficient method for establishing students' focus on new vocabulary items and enter and reinforce lexical items into their semantic networks, studies on lexical inferencing as a strategy can be helpful in giving new insights as to the nature of the processes at hand. However in this study and in other similar studies it is reported that the students, even the proficient ones have difficulties making efficient use of them for generating plausible meanings for the unknown words. Therefore it is crucial that teachers familiarize students with lexical inferencing strategy. Since a considerable degree of input is received by the students through listening, extensive listening can probably serve as an efficient way for students to enhance their vocabulary knowledge. Especially for EFL learners who do not have opportunities of target language input outside the classroom, listening and lexical inferencing as a medium can be of great help. Depth of vocabulary knowledge was found to have a determining impact on students' lexical inferencing success. Teachers should be on the alert to use different opportunities to increase students' depth of vocabulary knowledge and drive the focus away from breadth and towards depth of vocabulary knowledge. Another suggestion for teachers is to implement lexical inferencing exercises in the classroom, basically in the form of listening activities including some unfamiliar words which encourage students inference generation. In conducting lexical inferencing tasks, students' level should be taken into account. Care should be taken that the level of familiarity of the text be appropriate for the students. The text should be at least 95 percent comprehensible for students to be able to derive the meaning of the unknown words. Also it should be pointed that the teachers should emphasize that not all the unknown words encountered are to be inferred and as Field (2008) suggests: they should check their inferences with the upcoming new information. Regarding the crucial role of depth of vocabulary knowledge in listening proficiency, more emphasis should be asserted by teachers on lexical knowledge in the classrooms.

8. Suggestions for Further Research

This study was an attempt to shed some light on lexical inferencing as a strategy to deal with unknown words when listening. Similar studies can be carried out with more participants and with taking gender factor into account. With regard to the findings of the study and the complex nature of lexical inferencing, studies might be conducted to investigate the other factors that might influence lexical inferencing success of students. Different factors might

affect lexical inferencing process and success of Iranian EFL students, such as reader-related factors as gender, proficiency level, and course of study or text factors, for example texts with different genres can be subject to further studies of lexical inferencing. Also further research can be conducted to investigate the vocabulary retention that might occur as a result of lexical inferencing tasks implemented into language classes. This study also investigated the role of students DVK on lexical inferencing success, other studies might be carried out to investigate the role of breadth of vocabulary knowledge on students' lexical inferencing. In other studies the role that breadth of vocabulary knowledge plays may be compared to the role of DVK and how they might happen to act differently for students with different proficiency levels.

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