

THE ROLE OF VOCABULARY BREADTH, SYNTACTIC KNOWLEDGE, AND LISTENING STRATEGY USE ON LISTENING COMPREHENSION

DİNLEME-ANLAMA BECERİSİNDE KELİME DAĞARCIĞININ,
DİLBİLGİSİNİN VE DİNLEME-ANLAMA STRATEJİ KULLANIMININ
ETKİSİ

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Abstract

Listening is a multi-faceted process which involves three interrelated processes. The processes involved in listening to incoming auditory message are perceptual processing, parsing and comprehension. All these processes have an important role in listening and especially parsing of the incoming message requires both syntactic and lexical knowledge, as well as effective use of listening strategies. In this paper, the aim is to investigate the role of syntactic knowledge, vocabulary knowledge and listening strategy use on listening comprehension. The study was conducted with 73 EFL students at three different proficiency levels assessed by a Michigan Placement Test. In the study, the effects of syntactic knowledge, vocabulary breadth and reported listening strategy use on listening comprehension were investigated using multiple regression analysis. The results showed that vocabulary knowledge is the strongest predictor of listening comprehension. As participants' vocabulary knowledge increased, their listening comprehension scores also increased, and the positive correlation was found to be 0,710. The second strongest predictor of listening comprehension is syntactic knowledge, which had correlated with listening comprehension positively at 0,705. Reported strategy used did not correlate with listening comprehension. Based on this findings, multiple regression analyses were conducted and it was found that vocabulary knowledge, on its own, explained 49.6% of the variance. The combined impact of vocabulary and grammar knowledge on listening comprehension explained 55.6% of the variance. The study showed that vocabulary knowledge and syntactic knowledge have strong impact on listening comprehension. The results of this study are in accordance with earlier reports of the effect of syntactic and vocabulary knowledge on listening comprehension; however, the study did not yield results that are in support of earlier findings on the role of strategy use on listening comprehension. Based on these findings, it is fair to say that there should be a greater focus on lexical development with lower level students. Explicit vocabulary teaching could easily be integrated to existing curriculum. Students' awareness about the role of vocabulary on comprehension could be increased from the beginning of their language learning experience.

Keywords: Listening comprehension, factors, syntactic and lexical knowledge, strategy use

Özet

Dinleme anlama becerisi birbiri ile ilişkili birçok süreci içerir ve çok yönlüdür. Bu süreçlere örnek olarak sesli mesajı duymak, anlamlı parçalara bölmek ve anlamak gösterilebilir. Bu süreçler dinlediği anlamak için önemli olmakla beraber, özellikle duyulan sesli mesajları anlamlı parçalara bölmek için iyi bir kelime dağarcığı, dilbilgisi ve etkili strateji kullanımı gerekmektedir. Bu çalışmada amaç kelime dağarcığı, dilbilgisi ve strateji kullanımının dinlediğini anlama becerisine etkisini araştırmaktır. Çalışma üç farklı dil seviyesinde olan 73 hazırlık sınıfı öğrencisi ile yapılmıştır. Çalışmada hedef etmenlerin etkisi çoklu regresyon analizi yapılarak incelenmiştir. Sonuçlar kelime dağarcığının en belirleyici etmen olduğunu göstermiştir. Öğrencilerin kelime dağarcığı arttıkça onların dinleme anlama becerilerinde de artış gözlemlenmiş ve bu pozitif korelasyon 0,710 olarak bulunmuştur. İkinci belirleyici etmen olan dilbilgisiyle anlama dinleme becerisi arasında 0,705 oranında pozitif korelasyon görülmüştür. Öğrencilerin kullandıkları söyledikleri dinleme anlama stratejileri ile dinleme anlama arasında anlamlı bir ilişki bulunamamıştır. Bu bulgulara dayanarak oluşturulan çoklu regresyon modellerinde elde edilen veriler, dinleme anlama becerisinde kelime dağarcığı tek başına varyansın %49.6'sını açıklarken, dilbilgisi ile

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birlikte ise varyansın %55.6'sını açıkladığı görülmüştür. Bu çalışmanın bulguları, dinleme-anlama becerisinde dilbilgisi ve kelime dağarcığının önemini gösteren önceki çalışma bulgularıyla örtüşmektedir. Ancak, bu çalışmada önceki çalışmaların aksine strateji kullanımı ile dinleme anlama becerisi arasında anlamlı bir ilişki bulunmamıştır. Çalışma bulgularından yola çıkarak, düşük dil seviyedeki öğrencilerin kelime dağarcığının geliştirilmesi için çalışmalar yapılması gerektiği söylenebilir. Kelime öğretimine yönelik etkinlikler ve alıştırmalar mevcut dil öğretimi programlarına kolayca entegre edilebilir. Bunun yanı sıra, kelime dağarcığı ve dil bilgisinin anlama becerisindeki önemi öğrencilere dil öğrenme tecrübelerinin hemen başlarında hatırlatılarak, onların bu iki konuda daha bilinçli öğrenciler olması sağlanabilir.

Anahtar Kelimeler: Dinleme-anlama becerisi, faktörler, dilbilgisi, kelime dağarcığı, strateji kullanımı

INTRODUCTION

Testing listening has always been a challenge for test designers and test takers, mainly because of the complexity of the listening process as a construct, as well as the factors that have an impact on this complex process (Buck, 2001). In any test of listening comprehension, learners are usually confronted with a number of difficulties, including limited vocabulary, unfamiliar topical knowledge, fast speech rates, and unfamiliar accents (Chang, 2007). Due to numerous factors learners need to be aware of and account for when listening to spoken language in the foreign language, listening is considered as one of the most challenging skills for EFL learners to develop (Vandergrift, 2004).

Listening is a complicated skill, because a lot of factors play a role on listening comprehension. These factors include not only contextual ones, which characterize the listener, the speaker, the content of the message and any visual support that accompanies the message (Brown and Yule, 1983), and but also those arising from the complexity of the listening process itself (Vandergrift, 2007). The contextual factors include a wide range of factors from the physical conditions of the context, such as the level of background noise, to the familiarity with the speakers, their speeches and the topic (Brown, 1995).

As for the difficulties arising from the listening process itself, when comprehending a text, learners need to make sense of what they are hearing, as well as understanding the context, the speakers, the relationship between the speakers and contextual variables. Therefore, both linguistic knowledge and world knowledge interact when listeners try to create a mental representation of what they hear (Hulstijn 2003); and as Rost (2002) also emphasizes, listening comprehension, or understanding spoken language, is in essence an inferential process. This complex process actually entails transforming an auditory stimulus to a mental reconstruction on the part of the listener (Rost, 1990) and made up of interrelated-stages of speech perception, word recognition, parsing and interpretation (Anderson, 1995).

These stages cover a range of skills from identifying phonetic sounds to assigning meaning to these sounds. Especially, the skills needed for parsing and interpretation draw heavily on linguistic knowledge (Poelmans, 2003). In a listening comprehension test, both lexical knowledge and knowledge of the rule system of the language are part of the listener's linguistic competence. The knowledge of these is essential to recognize words needed, as well as decoding the grammatical relationships among the words that make up the sentence (Ellis 2000). Similar to Ellis (2000), Anderson & Lynch (2000) elaborate on the role of grammar and vocabulary knowledge by stating that one of the reasons why the listener fails to process incoming speech is that the speech contains words or phrases that the listener can hear adequately but is unable to understand because of serious problems with the syntax or semantics of the language.

Furthermore, Mecartty (2000, p.323) emphasizes the importance of lexical knowledge and grammatical knowledge by stating that lexical knowledge facilitates the process of deriving meaning of the basic propositional content of a sentence on one hand and grammatical knowledge allows the learner to internalize the structure of the language in terms of how its features are ordered, rule-governed, and interrelated on the other. Consequently, she states that learners need to develop basic components of lexical and grammatical knowledge in order for L2 learners to effectively comprehend and process discourse. Based on the support from the literature, it is possible to hypothesize that both knowledge of lexis and knowledge of grammar may have a contribution on listening comprehension. In other words, not only general language proficiency, but also knowledge of lexis and grammar may have an impact on listening comprehension.

As much as linguistic competence, strategic competence (Bachman and Palmer, 1996) is considered as an important factor that has an effect on learners' language use. Especially at lower proficiency levels, Vandergrift (2004) suggests that learners need to employ strategies to compensate for their deficiencies in linguistic competence. Research into the role of strategic competence in listening comprehension showed that skilled learners use more strategies than less skilled learners (cf. Vandergrift, 2007). Furthermore, in their current model of language ability, Bachman and Palmer (1996) state that language knowledge, strategic competence, and affect interact with one another during language use, emphasizing the importance of all the three aspects when defining the construct of language ability. In the light of the support from the literature, it is possible to hypothesize that learners' strategy use may have an impact on their listening comprehension.

Although both the lexical and grammar knowledge, along with strategy use are believed to have an impact on listening comprehension, the number of studies that have directly investigated the role of different factors to explain variance in L2 listening on this area is scarce (Vandergrift, 2007). One reason for the lack of research on L2 listening comprehension is the difficulty of working with oral modality (Bonk, 2000). Another reason is, of course, the dominance of the view that the two receptive skills of listening and reading comprehension are similar in terms of processes involved, because in both skills, learners need to decode the message and comprehend the text in different modalities (Maeng, 2006). There is strong support from research on L2 reading that both lexical and grammar knowledge have an impact on L2 reading comprehension (cf. Shiotsu and Zhang 2007; Zhang, 2012; Jeon and Yamashita, 2014). Nonetheless, recent research on listening comprehension shows that there are differences between L2 listening and L2 reading, and support from L2 reading research may not suffice to explain the complexity of L2 listening process (Vandergrift, 2007). Vandergrift (2007) emphasized the need of future research on factors that could potentially contribute to L2 listening ability. Although there is a lack of research in this area as also emphasized by Vandergrift, the number of studies conducted so far is few. Therefore, this study, in an attempt to address the gap in the related area, examines the relative contribution of knowledge of syntax, knowledge of vocabulary and listening strategy use to EFL learners' performance on listening test at three proficiency levels of elementary, lower intermediate and upper intermediate in a Turkish EFL Preparatory context at tertiary level.

Literature Review

The aim of any language test is to measure the construct of language ability (Bachman, 1990). In tests of listening comprehension, the construct is listeners'

ability to comprehend the spoken language; therefore, first the differences between listening and comprehension should be clarified. Listening can simply be described as hearing. It does not include understanding or comprehending the propositional content of the utterances. Comprehending, on the other hand, is an active process of meaning construction in which the listener draws on various information sources in order to interpret the intended meaning of a message (Faerch & Kasper, 1986). Alternately, Dunkel (1991) states that listening is hearing something, whereas understanding is "the activity of paying attention to and trying to get meaning from something we hear" (Dunkel, 1991: 433). Boyle (1984) defines listening as an active process of meaning construction in which elements of perception, linguistic and world knowledge all interact in a complex manner. Vanderplank (1988) defines comprehension as a listening process of "following" and "understanding". According to Vanderplank, following is supposed to be more language dependent (i.e. linguistic knowledge dependent) than understanding, which is dependent on world knowledge and experience. These definitions highlight the importance of both linguistic knowledge and world knowledge in listening comprehension.

Byrnes (1984) points out problems related to the learners' basic L2 proficiency and knowledge, affirming that because listeners are required to gain entry into a new/form meaning system, their knowledge of basic rules of target language grammar and sufficient amount of vocabulary is necessary to be successful in listening comprehension. Faerch & Kasper (1986), similar to Byrnes (1984), remind that problems can also be caused by a form-meaning mismatch. If a listener identifies the form of a word correctly but has not enough knowledge of its meaning, the recognition process (and ultimately the communication process) will fail accordingly. Word-recognition problems, whether caused by faulty word-boundary identification or by insufficient lexical knowledge, are major sources of miscommunication in listening comprehension; this is, as is discussed, particularly the case in the second language listening comprehension process. Nonetheless, these are only hypothetical, and needs to be validated by empirical research.

Rubin (1994) in an extensive review of research on listening comprehension identified five major factors that have an impact on listening comprehension. These are text-related, task-related, interlocutor-related, listener-related, and process-related factors. Text-, task-, and interlocutor-related factors are concerned with the characteristics of the listening text and tasks used for testing, accounting for the variability arising from the speakers' characteristics such as accent, rate of speech, and pitch. Text-, task-, and interlocutor-characteristics have studied more intensively compared to listener-related and process-related characteristics (Goh, 1999). Process-related factors try to understand the process of listening comprehension from the eyes of the listeners (Vandergrift, 2007).

Listener characteristics, which are more related to the present study, deals with all the factors related to the listener, including memory span, attitude, motivation, language proficiency. Kao (2006) provides a list of listener characteristics, in which he has included language proficiency level, memory, attention, affect, and background information. Goh (1999) investigated factors that influence listeners listening comprehension and found that listeners' comprehension problems generally resulted from poor listening habits, concentration and processing problems. She has concluded that knowledge of vocabulary is essential to overcome the problem of poor listening habits. In a more recent study, Hwang (2005) investigated the listening comprehension difficulties observed among Korean EFL listeners and found that

listeners generally have problems with processing, where vocabulary and syntactic knowledge plays an important role helping learners processing.

All the empirical studies addressing listening comprehension problems emphasize the importance of vocabulary and grammar knowledge, as well as being a strategic listener as a way to develop better listening comprehension skills. Yet, most research about listener characteristics in the field of L2 listening comprehension focuses on cognitive factors, such attention, memory span and affective factors, such as motivation, anxiety and attitudes (Osada, 2004) . Nonetheless, research into factors affecting L2 reading comprehension has shown that knowledge of the language, namely grammar knowledge and vocabulary knowledge are important predictors of L2 reading comprehension. Recently, there has been linguistic research on listening comprehension. In a recent review of the research on listening comprehension, Kurita (2012) concludes that vocabulary knowledge is an important predictor for listening comprehension, as students pay close attention to content words to grasp the meaning.

There have been some studies that have investigated the role of vocabulary size and depth on listening comprehension. In a study on the role of lexical knowledge on L2 listening comprehension, Bonk (2000) investigates the interaction between lexical knowledge and listening comprehension in a second language with 59 Japanese university students of low-intermediate to advanced level, using first language recall protocols as a measure of L2 listening comprehension and dictation as a measures of receptive lexical familiarity. The distribution of scores revealed that higher dictation scores are associated with better comprehension, indicating that higher lexical familiarity correlates positively with L2 listening comprehension. The results also showed significant correlation (.446) between lexical recognition and comprehension. Stahr (2009) investigate both the role of vocabulary size and depth on listening comprehension and found that both are important in listening comprehension. Van Zeeland and Schmitt (2013), who have investigated the lexical coverage in listening comprehension, found that language users would need to know between 2,000 and 3,000 word families for adequate listening comprehension. All these studies show that vocabulary size and depth are important in listening comprehension.

Grammar knowledge, on the other hand, appears to be a predictor; however, there is not enough research on the role of grammar knowledge to make strong arguments about the relative importance of grammar on listening comprehension. Studies on the role of grammar are scarce. To the best knowledge of the researcher, there are only two pieces of research (Mecartty, 2000, Andringa, Olsthoorn, van Beuningen, Schoonen and Hulstijn, 2012) that have investigated the role of both lexical knowledge and knowledge of grammar on listening comprehension, and one from Bonk (2000) who has investigated the role of vocabulary knowledge on L2 listening knowledge.

Mecartty (2000) has investigated the role of both lexical knowledge and knowledge of grammar on listening comprehension found that lexical knowledge accounts for 14% of variance on listening comprehension. The study actually designed to examine the relationship between lexical and grammatical knowledge to reading and listening comprehension. 154 fourth semester students of Spanish at the college-level participated in the study. These students were divided randomly into 5 classes of L2 reading and L2 listening. All participants performed the tests of lexical knowledge and grammatical knowledge respectively. Correlational analyses were used to test the relationship between lexical and grammatical knowledge to both reading and listening

comprehension. Multiple regression analyses tested the variance accounted for lexical and grammatical knowledge in reading and listening comprehension respectively. It was found that lexical as well as grammatical knowledge were significantly correlated to reading; however, only lexical knowledge explained the variance in reading comprehension. The results also revealed that only lexical knowledge explained the variance in listening comprehension.

Andringa et al. (2012) explored factors that affect listening comprehension in first and foreign language. In their study, 121 native and 113 non-native speakers of Dutch were tested on various linguistic and non-linguistic factors to identify the role these factors played on listening comprehension. They used structural equation modeling to reveal the impact of different factors on listening comprehension and found out that knowledge of the language is the most significant factor in listening comprehension.

Compared to the role of vocabulary and grammar knowledge, research on L2 listening strategy use and the effect of strategy use on listening comprehension is studied more extensively (Vandergrift, 2003, 2007; Kao, 2006; Sheu, Wang, and Hsu, 2013; Ratebi and Amirian, 2013, Latifi, Tavakoli, and Dabaghi, 2014). The studies on listening comprehension strategy use were reviewed extensively in a study by Berne (2004). Based on her analysis, she has concluded that there are differences in the strategy use of more and less proficient listeners. She has summarized the findings of various studies in a table (Figure 1).

Table 1

Differences between More- and Less Proficient Listeners

More-Proficient Listeners	Less-Proficient Listeners
<ul style="list-style-type: none"> ▪ use strategies more often ▪ use a wide range of strategies ▪ use strategies interactively ▪ are concerned with the overall rhetorical organization of text ▪ are better to able to: <ul style="list-style-type: none"> ○ attend to larger chunks of input ○ monitor/redirect attention ○ grasp overall meaning of input ○ relate what they hear to previous experiences ○ guess meaning of words ○ use linguistic knowledge to aid comprehension 	<ul style="list-style-type: none"> ▪ process input word by word ▪ rely heavily on translation / key words as strategies ▪ are negatively affected by linguistic and attentional constraints ▪ are concerned with definitions / pronunciation of words ▪ make fewer inferences / elaborations ▪ do not verify their assumptions ▪ do not relate what they hear to previous experiences

Source: Berne (2004, p. 525)

Although there is an extensive list of factors available in the literature that is believed to have a role on listening comprehension, there are relatively few empirical studies to support the exact role of these factors on listening comprehension (Rubin, 1994; Goh, 1999; Osada, 2004; Vandergrift, 2007).

Statement of the problem

Bachman and Palmer (1996) model of language ability includes both strategic competence and linguistic competence. Both competences are assumed to have an impact on test performance. Linguistic competence, which can be broken down into grammatical and lexical competence, is essential for listening comprehension, because

as Anderson & Lynch (2000) also suggest the speech contains words or phrases that the listener should hear adequately and understand, which require knowledge of the grammar and vocabulary of the language. On the other hand, strategic competence, which is defined as a set of metacognitive components or strategies that provide a cognitive management function in language use in Bachman and Palmer (1996), helps listeners to assess and regulate the test taking process, making them more successful test takers. Test takers who are more strategic may perform better than those who are not, because they employ the necessary strategies to perform well on the given test tasks. In the EFL context, classrooms are the major sources of language input for learners, and it is important to find out what component of language foster test performance, as well as the role these play on test performance to regulate the testing procedures, along with the classroom practices. Componential approach to research has provided useful insights into language processing and comprehension, especially in L2 reading research; however, research on listening comprehension and factors that play a role in listening comprehension is limited.

Although componential approach to L2 reading comprehension showed that both syntactic knowledge and vocabulary breath have strong predictive values in reading comprehension (Shiotsu and Weir, 2007), studies on possible explanatory skills factors or components involved in the listening process are scarce. Therefore, this study examines the relative contribution of knowledge of syntax, knowledge of vocabulary and listening strategy use to EFL learners' performance on listening test at three proficiency levels.

Research Questions

The present study addresses the following four research questions:

1. What is the relationship between knowledge of grammar and listening comprehension?
2. What is the relationship between receptive vocabulary knowledge and listening comprehension?
3. What is the relationship between listening comprehension strategy use and listening comprehension?
4. How does knowledge of vocabulary, knowledge of grammar, listening strategy use effect test takers' listening comprehension?

METHODOLOGY

In this section, the methodology section of the paper is presented with reference to participants, instruments used, and data analysis.

Participants

Participants in the study are seventy-three EFL university students at an English preparatory year, studying at one of three proficiency levels of elementary, lower-intermediate and upper-intermediate determined by a Michigan placement test. These students are enrolled on one of the elementary (n=27), lower-intermediate (n=25), and upper-intermediate (n=21) classes randomly.

Instruments used

To gather the necessary data to answer the research questions posed for the study, five instruments were used. These are:

- ❖ Practice Test 1 Structure and Written Expression Part for Paper-Based TOEFL (Kaplan, 2004)
- ❖ Practice Test 1 Listening Comprehension Part for Paper-Based TOEFL (Kaplan, 2004)
- ❖ Vocabulary Levels Tests Version 2 (Schmitt, Schmitt and Clapham, 2001)
- ❖ Listening Comprehension Strategy Use Questionnaire (Gerçek, 2000)

Measures of listening comprehension and knowledge of grammar

The two TOEFL practice tests were used to gather the necessary data to measure students' listening comprehension and knowledge of grammar. One reason why TOEFL is chosen as a measure of listening comprehension and grammar knowledge is that TOEFL is applicable to students of various proficiency levels and it is a valid and reliable test of language ability. Students' raw scores on each part of the exam are converted to TOEFL test score and used as a measure of listening comprehension and knowledge of grammar. The scores on the TOEFL test ranged from 330 (lowest possible score) to 670 (highest possible score).

Paper-based TOEFL Listening part consists of three parts, and made up of 50 multiple choice type questions of listening comprehension. The test measures students' understanding of both spoken daily language and academic language, with an emphasis on campus type interactions. Part A of the listening comprehension test contains thirty short conversations. Part B is made up of eight questions on two longer conversions. Part C of the test contains twelve questions related to three academic lectures. Similarly, Structure and Written Expression part consists of two parts, and made up of 40 multiple choice type questions. Fifteen of these questions are fill-in-the-blank type and the remaining twenty-five are error identification.

The Vocabulary Levels Test (Version 2)

The Vocabulary Levels Test used in this study was the second version of the levels test revised and validated by Schmitt et al. (2001). It was originally produced by Nation in 1983 and was later revised by him in 1990. It provides an estimate of vocabulary size at 2000, 3000, 5000, and 10000 frequency levels and also provides an estimate of the size of the examinee's academic vocabulary. In this version, there are 10 clusters at each level and each cluster has six words and three definitions. Hence, the test consists of 150 items. There are 15 nouns, 9 verbs, and 3 adjectives in each word level with a ratio of 3: 2: 1, so there are 75 nouns, 50 verbs, and 25 adjectives assessed in the whole test. The test takers are supposed to match the definitions on the right in each cluster with the corresponding words on the left. The items are not contextualized so that no clues to the meaning are provided. An example item is provided below:

- | | |
|-------------|-------------------------------------|
| a. business | |
| b. clock | 1. _____ part of a house |
| c. horse | 2. _____ animal with four legs |
| d. pencil | 3. _____ something used for writing |
| e. wall | |

Schmitt et al. (2001) conducted a study to establish item discrimination, item facility, reliability and validity of the test. The reliability of the different levels of version 2 ranged from .92 to .96. The mean facility index for the tests ranged from .78 to .29

decreasing as the target words move from the most frequent to less frequent items. The mean discrimination indices varied from .51 to .67 with no items having discrimination values below .30, which is an acceptable discrimination index. The different levels of the test were found to be 'highly scalable.' The results of factor analysis also showed that "the levels test is unidimensional, with the key measured trait being vocabulary knowledge" (Schmitt, et al., 2001). To estimate the testees' passive vocabulary levels, the procedure followed by Laufer (1998) was adopted:

Passive Vocabulary Level

$$(2000 \text{ passive score} * 2) + 3000 \text{ passive score} + \text{Academic vocabulary score} + 5000 \text{ passive score} + ((3000 \text{ passive score} + 5000 \text{ score}) / 2) + ((5000 \text{ passive score} + 10000 \text{ passive score}) / 2 * 4) + 10000 \text{ passive score} / 330 * 10000$$

Listening Comprehension Strategy Use Questionnaire

Listening comprehension strategy use questionnaire used in the study was prepared and validated by Gerçek (2000). The questionnaire consists of twenty seven 5-point Likert scale type statements addressing students' listening comprehension strategies. The questionnaire was prepared through an analysis of existing listening comprehension strategies and adopted to EFL context. There are seven statements on the questionnaire that were negatively stated. Students' strategy use was measured by adding their responses on the statements, taking the negative statements into account. There were 26 statements on the questionnaire, so the total score students can get on strategy use is 130.

Data Analysis

The data gathered through the four instruments were analyzed quantitatively using Statistical Package for Social Sciences (SPSS) Version 15. The data was analyzed using ANOVA statistics, correlational analyses, and multiple regression analyses. ANOVA statistics are used to investigate the differences of three proficiency groups with reference to knowledge of grammar, knowledge of vocabulary, strategy use and listening comprehension

Correlational analyses were used to investigate the relationship between the independent variables and dependent variable. In the study, knowledge of Grammar, knowledge of Vocabulary, self-reported listening comprehension strategy use and general language proficiency are independent variables and the score on the TOEFL Listening part is the dependent variable. Finally, multiple regression analyses were used to investigate the significance of the main effects of independent variables on overall listening comprehension.

RESULTS AND DISCUSSION

The present study addressed four research questions. These questions tried to investigate the relative impact of vocabulary knowledge, grammar knowledge and listening comprehension strategy use on participants' listening comprehension. In this section of the paper, the results of the study are presented with reference to each research question, followed by discussion of the findings. Before answering the research questions, it is important to talk about the results derived from the instruments of the study. Below in Table 2, the descriptive statistics of the dependent and independent variables are presented.

Table 2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Listening Comprehension	73	330,00	500,00	413,29	42,689
Knowledge of Grammar	73	300,00	540,00	405,75	52,89
Listening Strategy Use	73	55,00	114,00	83,68	11,63
Vocabulary Breadth	73	363,64	4621,21	1948,53	998,10

Table 2 shows that the seventy three participants in the study have varying scores on the listening comprehension and knowledge of the grammar test with a score in the range of 330 to 500 points and 300 to 540 points, respectively. As for the listening strategy use, there appears to be not much difference on participants' use of listening comprehension strategy with a mean of 83.7, and a standard deviation of 11.63. Vocabulary breadth is the part in which the greatest variation in scores is observed. The minimum and the maximum scores, as well as the mean score and standard deviation indicate the degree of variance on scores from the vocabulary test. Below in Table 2, the descriptive statistics for every proficiency level is represented.

Table 3

*Descriptive Statistics for the Three Proficiency Groups Upper-Intermediate Group-
Descriptive Statistics*

	N	Minimum	Maximum	M	SD
Listening Comprehension	21	400,00	500,00	454,76	27,68
Knowledge of Grammar	21	380,00	540,00	465,24	36,96
Listening Strategy Use	21	55,00	110,00	81,52	14,02
Vocabulary Breadth	21	2212,12	4621,21	3186,15	601,92
Lower-Intermediate Group-Descriptive Statistics					
	N	Minimum	Maximum	M	SD
Listening Comprehension	25	340,00	480,00	410,00	35,47
Knowledge of Grammar	25	340,00	440,00	399,60	32,97
Listening Strategy Use	25	61,00	104,00	84,48	9,51
Vocabulary Breadth	25	1045,45	2727,27	1870,30	474,04
Elementary Group-Descriptive Statistics					
	N	Minimum	Maximum	M	SD
Listening Comprehension	27	330,00	440,00	348,07	31,77
Knowledge of Grammar	27	300,00	430,00	365,19	32,97
Listening Strategy Use	27	48,00	114,00	84,63	11,61
Vocabulary Breadth	27	363,64	2090,91	1058,36	454,66

Table 3 shows that participants from the three groups show similar tendencies within the group; yet, there seems to be differences across the three proficiency levels with reference to scores on the listening comprehension test, knowledge of grammar and vocabulary breadth. Table 3 presents the ANOVA analysis to explain the differences between the participants from three proficiency levels.

Table 4

ANOVA Statistics

		Sum of Squares	df	Mean Square	F	Sig.
Listening Comprehension	Within groups	59435,3	2	29717,649	28,98	0,000**
	Between groups	71775,7	70	1025,367		
	Total	131211	72			
Knowledge of Grammar	Within groups	119689,7	2	59844,839	51,28	0,000**
	Between groups	81693,9	70	1167,055		
	Total	201383,6	72			
Listening Strategy Use	Within groups	137,979	2	68,990	0,503	0,607
	Between groups	9603,774	70	137,197		
	Total	9741,753	72			
Vocabulary Breadth	Within groups	53713412,8	2	26856706,4	104,36	0,000**
	Between groups	18013740,4	70	257339,2		
	Total	71727153,2	72			

Table 4 shows that the three groups are different with reference to their knowledge of grammar, vocabulary breadth, and listening comprehension skills. Nonetheless, there are no significant differences between low and high proficient learners in terms of their listening comprehension strategy use.

Research Question 1

Research question 1 investigated the relationship between knowledge of grammar and listening comprehension skills. Pearson correlational coefficient is calculated to address the study and Pearson correlation showed that there is relatively strong positive relationship between knowledge of grammar and listening comprehension. Table 5 presents the results.

Table 5

Correlation between Listening Comprehension and Knowledge of Grammar

		Listening Comprehension	Sig. (1-tailed)
Pearson Correlation	Knowledge of Grammar	0,705	0.000**

Table 5 shows that Pearson correlation is .705 and is significant at $p = .000$. Pearson correlation also shows that there is strong positive relationship between knowledge of grammar and listening comprehension. The direction of the relationship suggests that as the knowledge of grammar increases, listeners' ability to listen and understand also increases. The findings of the present study appear to be in accordance with the previous research and literature (Anderson & Lynch, 2000; Ellis, 2000; Poelmans, 2003; Mecartty, 2000). In all these scholarly work, the role of grammar has been emphasized and the present study has found strong correlation between listening comprehension and knowledge of grammar.

Research Question 2

Research question 2 investigated the relationship between vocabulary breadth and listening comprehension skills. Pearson correlational coefficient is calculated to address the study and Pearson correlation showed that there is strong positive relationship between knowledge of grammar and listening comprehension. Table 7 presents the results.

Table 6

Correlation between Listening Comprehension and Vocabulary Breadth

		Listening Comprehension	Sig. (1-tailed)
Pearson Correlation	Vocabulary Breadth	0,710	0.000**

Table 6 shows that Pearson correlation is .710 and is significant at $p = .000$. Pearson correlation shows that there is strong positive relationship between vocabulary breadth and listening comprehension. The direction of the relationship suggests that as listeners' vocabulary knowledge increases, their ability to listen and understand also increases.

Research Question 3

Research question 3 investigated the relationship between listening comprehension strategy use and listening comprehension skills. Pearson correlational coefficient is calculated to address the research question and the Pearson correlation showed that there is no significant relationship between listening comprehension strategy use and listening comprehension skills. Table 6 presents the results.

Table 7

Correlation between Listening Comprehension and Listening Strategy Use

		Listening Comprehension	Sig. (1-tailed)
Pearson Correlation	Listening Strategy Use	0,128	0.140

In contrast with earlier studies on the relationship between self-reported strategy use and listening comprehension, the present study produced no significant correlation between the self-reported strategy use and general listening comprehension. One reason for the non-existence of a relationship is because all groups of participants reported some use of strategy and there is no significant difference in the strategy use of participants.

Research Question 4

Although the correlational analyses showed that there is strong positive correlation between listening comprehension and knowledge of grammar and vocabulary, correlational analyses fall short of providing information about the predictive values of the independent variables on the dependent variable (Morgan, Griegove, Gloeckner, 2001). In other words, correlational analyses do not generate information about causality. To determine the predictive value of the independent variables on the dependent variable, multiple regression analyses need to be conducted. To answer the last research question, multiple regression analyses were conducted, where listening comprehension is assigned as the dependent variable and the three factors of vocabulary knowledge, grammar knowledge and strategy use as independent variables. Table 7 presents the multiple regression analyses.

Table 8

The Multiple Regression Table

	B	SH	β
Model 1			
Constant	354.155	7,819	
Knowledge of Vocabulary	0,030	0,004	0.710**
Model 2			
Constant	250.835	32,778	
Knowledge of Vocabulary	0,018	0,005	0,412*
Knowledge of Grammar	0,316	0,098	0,391*
Model 3			
Constant	201.820	38,764	
Knowledge of Vocabulary	0,019	0,005	0,440*
Knowledge of Grammar	0,301	0,095	0,374*
Listening Comprehension Strategy Use	0,627	0,282	0,171*

Note: For Model 1 Adjusted R²=0.496 (p<0.001), For Model 2 Adjusted R²=0.556 (p<0.05), For Model 3 Adjusted R²=0.579 (p<0.05)

Multiple regression analyses operate on best-fit model hypothesis. Knowledge of vocabulary, compared to knowledge of grammar and listening strategy use, has the most explanatory power; therefore, in all three models, knowledge of vocabulary is regarded as the most predictive factor for listening comprehension. This is further supported with the β values in table 7. In all three models, knowledge of vocabulary has the highest β value. A close examination of the data shows that vocabulary knowledge, on its own, explains %49.6 of the variance. As for knowledge of grammar, on its own, it explains 48.9% of the variance. Students' self-reported listening comprehension use, on the other hand, explains only 1.6% of the variance. In other words, both grammar and vocabulary knowledge have a role on listening

comprehension; however, the role of vocabulary is slightly more than that of grammar, and the role of listening comprehension strategy use is so minor that it could be regarded as coincidental. Both the role of vocabulary and grammar knowledge is statistically significant ($p < 0.001$); however, strategy use is not statistically significant factor for listening comprehension.

Based on the multiple regression analyses, three models have been proposed. In model 1, the relationship between knowledge of vocabulary and listening comprehension is being investigated. In model 2, the combined effect of knowledge of vocabulary and knowledge of grammar on listening comprehension is being examined. Finally, model 3 examines the combined effect of all three factors on listening comprehension test performance.

Model 1 explains 49.6% of the total variance (see adjusted R^2 value for model 1 on Table 7). This means that almost 50% of the variance on listening comprehension score is attributable to knowledge of vocabulary, the remaining 50% of the variance arises from other factors. The regression equation for **Model 1** is:

$$\text{Listening Comprehension Score} = 354.155 + (0.030 \times \text{Knowledge of Vocabulary})$$

The equation tells that even if listeners do not have any vocabulary knowledge, they are expected to get 354,155 points from the listening comprehension test. In other words, vocabulary have an impact on scores higher than 354,155; and other factors have a role to play on listening comprehension in scores below the constant value of 354,155. TOEFL listening lowest score is much below the constant value, which may indicate that students with low knowledge of vocabulary can still get a score of 350 on the TOEFL. Since the vocabulary test used in the study started from 1000 Level, the students who can get the constant still need to possess some level of vocabulary knowledge.

Model 2 explains the 55.6% of the variance (see adjusted R^2 value for model 2 on Table 7). The regression equation for **Model 2** is:

$$\text{Listening Comprehension Score} = 250.835 + (0.018 \times \text{Knowledge of Vocabulary}) + (0.316 \times \text{Knowledge of Grammar})$$

The equation shows the constant, and the relative effect of vocabulary and grammar knowledge on listening comprehension test performance. According to the equation, students can only get a score of 250.835, without any knowledge of vocabulary and grammar. Since the base score on the TOEFL Listening part is 310, students need both knowledge of vocabulary and grammar to get the minimum score on the TOEFL. Furthermore, since the B_1 value (coefficient of Knowledge of Vocabulary) and B_2 value (coefficient of Knowledge of Grammar) have positive sign (+), any increase on students' vocabulary or grammar would contribute positively on the listening comprehension test score. Compared to knowledge of grammar (0,391), knowledge of vocabulary has a higher β value (0.412), suggesting that the overall impact of vocabulary knowledge is higher than the impact of grammar knowledge.

Model 3 explains the 57.9% of the variance (see adjusted R^2 value for model 2 on Table 8). The regression equation for **Model 3** is:

$$\text{Listening Comprehension Score} = 201.820 + (0.019 \times \text{Knowledge of Vocabulary}) + (0.301 \times \text{Knowledge of Grammar}) + (0.627 \times \text{Listening Comprehension Strategy Use})$$

Model 3 presents the constant and the relative contribution of all independent variables on listening comprehension test scores. Referring back to the B values on Table 8, the impact of vocabulary (0.440) is greater than that of grammar (0.374) and strategy use (0.171). Grammar has a greater impact on the listening comprehension test score than the impact of strategy use and the overall impact of the three independent variables explain 57.9% of the variance. The remaining 42.1% of the variance is attributable to other factors.

The findings of the present study are parallel with earlier studies on componential analysis of listening comprehension as much as the knowledge of grammar and vocabulary are concerned. There have been only two studies on listening comprehension that have explored the role of vocabulary knowledge (Mecartty, 2000; Bonk 2000), and in both studies, similar to the present study, knowledge of vocabulary has a significant explanatory power on listening comprehension. The predictive values of vocabulary knowledge in earlier studies and the present study are also very similar. Mecartty (2000) has found that 50% of variance is attributable to knowledge of vocabulary. Similarly, Bonk (2000) has found that there is significant correlation at 0.446 between lexical recognition and comprehension. The present study has found that knowledge of vocabulary on its own explains 49.6% of the total variance on listening comprehension test score, and there is a high, positive, significant correlation at 0.710 between listening comprehension test score and knowledge of vocabulary. Mecartty's (2000) study also examined that role of grammar on listening comprehension; the findings of her study are very similar to the present study. She has found that knowledge of grammar has a significant effect on listening comprehension; nonetheless, the effect is not as significant as the role of vocabulary. The present study has also found significant correlation between the knowledge of grammar and listening comprehension; however, the multiple regression analyses showed that knowledge of vocabulary better explains the variance in listening comprehension. In a nut shell, the present study further supports the role of vocabulary and grammar on listening comprehension, and suggests that knowledge of vocabulary on its own or in combination with knowledge of syntax has a significant impact on listening comprehension.

Another aspect the study addressed is the use of listening comprehension strategy use. Nonetheless, the present study fails to provide further support on the role of listening comprehension strategy use on listening comprehension test performance. One of the reasons may be that the strategy use questionnaire employed in the study deals with general listening comprehension, rather than listening test comprehension. Although there are similarities between the two kinds of listening comprehension, there also exist differences; such differences may explain the reason why strategy use does not have a significant role of listening comprehension. Another feasible explanation for the non-explanatory power of strategy use is that there were no significant differences between the self-reported strategy usages of participants from different proficiency groups. This is also a finding of the present study that appears to be contradictory to earlier studies, which have shown that more proficient learners use more strategies compared to less proficient learners. The present study did not actually look at the kinds of strategies used, but regarded the strategy use as a composite score. There may be differences in types of strategy use; however, that was out of the scope of the present study.

CONCLUSION

Earlier studies on factors influencing listening comprehension focused on many factors, related to the speaker's features, role of background information and role of visual assistance on listening comprehension. Language proficiency as a factor affecting listening comprehension has always been taken for granted and it is not broken down into different competencies to account for possible effect of language components on listening comprehension, hence, the present study is one of the few studies that investigate the role of language proficiency from a componential analytic perspective. The present study not only explores the role of language ability, but also the impact of strategic competence on listening comprehension.

In the present study, the relationship between knowledge of vocabulary, knowledge of grammar and listening comprehension strategy use and participants' listening comprehension has been investigated. The correlational analyses showed that there are significant, positive and high correlations between knowledge of vocabulary and listening comprehension, as well as between knowledge of grammar and listening comprehension. The multiple regression analyses showed that vocabulary knowledge has the strongest predictive value on listening comprehension. Together with knowledge of grammar, knowledge of vocabulary has a strong predictive feature on listening comprehension test performance. The findings of the present study seem to point at two directions. First of all, the study further illustrates the complexity of listening comprehension as a construct. Second, students need training on vocabulary and grammar to succeed in listening comprehension.

Listening comprehension is a complex construct that is influenced by both aspects related to language proficiency and other physical, psychological and social factors. The present study looked at the role of language proficiency from a componential analyses perspective, and found that vocabulary and grammar knowledge has a significant impact on listening comprehension. The findings of the present study help our understanding of what listening comprehension involves, as well as the role of vocabulary and grammar knowledge plays on the process of listening comprehension. Although the present study looks at the product of listening comprehension, namely listening test performance, rather than the actual process of comprehension, the findings of the present study are important to understand that knowledge of different components of language may have a role on listening comprehension.

The fact that knowledge of vocabulary and grammar has a role on listening comprehension indicates the need for assistance and training on vocabulary and syntax development on L2 listeners. Listening comprehension has long been viewed as a combination of top-down and bottom-up processes, the present study indicate the need to focus on bottom-up processes more in teaching and testing listening. Although top-down processes are important in listening comprehension, without the ability to decompose spoken language into meaningful chunks and assigning meaning to these chunks, top-down processes have little help to L2 listeners. L2 listeners need to develop a certain level of vocabulary to understand the spoken language, because these listeners generally experience problems not with hearing the individual words, but assigning meaning to what they hear. Therefore, it is essential that L2 listening classrooms devote some class time to teaching of vocabulary and find ways to highlight the importance of vocabulary on listening comprehension. Furthermore, the language used in measures of listening comprehension should take into consideration the lexical density and syntactic complexity. If both lexical and syntactic features of a text have a role to play on listening comprehension, test designers should take these

into account when testing listening comprehension. Furthermore, syntactic features, such as negations, emphatic expressions and use of clauses, that may make comprehension less accessible for L2 learners, should either be eliminated from tests of listening comprehension, or the L2 listeners should be trained on these structures to ease their comprehension. All in all, the findings of the present study indicate the need to develop vocabulary and grammar knowledge for better comprehension.

The findings of the present study should be taken into account with reference to its limitations. The present study used TOEFL Listening and Structure parts as measures of listening comprehension and knowledge of the grammar. TOEFL listening is in nature a language proficiency test consisting of easy, moderate and difficult items. Therefore, the test assumes that participants have sufficient vocabulary and grammar knowledge to answer the questions on the test. Similarly, the test of structure also indirectly measures students' knowledge of written expressions, so the test is not truly a decontextualized measure of syntactic knowledge, but rather tests language use in limited contexts. Therefore, other factors than knowledge of grammar may have a role on participants' performance. Furthermore, the participants have no prior familiarity with TOEFL exam, so their test performance may be affected from their unfamiliarity with the exam tasks. Finally, all tests used in the study are multiple-choice type and there is always chance of guessing that is out of researchers' control. For the strategy use, the questions are related to general listening comprehension strategy use, rather than test taking strategies. There may be differences in participants' test taking strategy usage; however, this was not within the general scope of the study. As in all studies, the role of fatigue, demotivation to participate in the study and frustration arising from test taking process are just some of the factors that may affect the results; nonetheless, there is no way out for researchers to address such factors.

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