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Viewing Comprehension and Vocabulary Size as Predictors of Vocabulary Learning Strategies Among Iranian EFL Learners

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Abstract

Given the pivotal role of vocabulary as the salient component of language, and the associations among vocabulary knowledge, vocabulary learning strategies, and aural and visual input modalities, this study, addressing the extant lacuna in the empirical literature, aimed at probing the interplay between EFL learners' aural vocabulary size, language learning strategies, and their viewing comprehension. Furthermore, the study probed whether aural vocabulary Size and vocabulary learning strategies made any significant contribution in the prediction of viewing comprehension. The participants, selected based on convenience sampling procedures, consisted of 112 Iranian EFL learners selected from two private language institutes located in Qazvin, Iran. Upon selecting the participants, two questionnaires, namely the Aural Vocabulary Size Test (AVST) and Schmitt's Vocabulary Learning Strategies Questionnaire (VLSQ), were given to the participants to complete. Finally, a short video clip, followed by 15 comprehension questions, was administered to the learners to assess their viewing comprehension. The results of statistical analysis, i.e., Pearson correlation coefficient, indicated that there was a statistically positive and significant relationship between aural vocabulary size and viewing comprehension. Similarly, there was a statistically positive and significant relationship between vocabulary learning strategies and viewing comprehension. Moreover, using the standard multiple regression statistical procedure revealed that vocabulary learning strategies and aural vocabulary size made a significant contribution to predicting viewing comprehension. However, by comparing the Beta coefficient indices, vocabulary learning strategy was considered a better predictor than vocabulary size of viewing comprehension. The findings of the present study could be applicable for the EFL teachers, EFL learners, and materials developers

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I. INTRODUCTION

Vocabulary, characterized as the main building block of language (Kim et al., 2022; Wang, 2022), has been subject to many recent investigations (e.g., Alsharif, 2022; Bagherian Poor &Serati, 2021; Blair &Morini, 2022; Husin et al., 2022; Icht& Mama, 2022; Malmir&Yousof, 2019; Rahmani et al., 2022; Rakhmonalievna, 2022; Sarani & Izadi, 2016; Savojbolaghchilar et al., 2020) the results of which corroborate the principal role of vocabulary in learning a language in general and a foreign language in particular. Due to the importance of vocabulary, vocabulary size, as a significant correlate of vocabulary knowledge, is associated with the learners' potential ability to employ English in diverse academic and personal domains (Dang, 2022; Nation, 2022). Therefore, to be proficient in a language, having exposure to vocabulary via different modes such as watching videos to acquire extensive vocabulary is quite beneficial (Teng, 2022). Likewise, it is well-documented that possessing a rich storage of lexical knowledge can be highly beneficial in fostering language proficiency in general and the comprehension process in particular (Alsowat, 2022; Xie& Yeung, 2022). As Nation (2021) notes, acquiring vocabulary is not a goal in itself, rather it is a means that enables learners to develop listening, speaking, reading, and writing. Furthermore, he proposed a mutual interaction of vocabulary information and language use, based on which language use can be facilitated through possessing a rich vocabulary storage, and on the contrary, vocabulary use can be increased by the effective use of language itself.

Comprehension of aural information can play a significant role in a foreign language class. In comparison to the other formats of vocabulary knowledge, the aural one is more effective in L2 listening comprehension (GhorbaniNejad& Farvardin, 2022). Accordingly, listening skill should be emphasized in the early phases of foreign-language instruction. Listening comprehension tasks can provide learners with the aural element of the target language which makes great contributions to better listening performance (Jones Vogely, 1998). According to Mayer et al., (2014), learners are more willing to benefit from audio plus video since the images in the video can provide them with some valuable cues to guess the meaning of unknown vocabulary items based on the presented context. Pursuing the same line, Mayer et al., (1999) proposed that learners' performance is improved when they learn from multiple media (video plus pictures) than merely from one of these channels. The findings suggested that the dynamic presentation of information provided by the video allowed learners to develop a better mental model of the task (Mayer et al. 1999). Currently, some studies have been conducted concerning the effective factors in viewing comprehension (e.g., Durbahn et al., 2020; Guieb& Cruz, 2017; Rodgers &Webb, 2020). Most of these studies focus on the role of audio-visual factors in enhancing viewing comprehension. It seems that there are very few studies in which the association of vocabulary size and vocabulary learning strategies has been examined concerning the viewing comprehension ability.

A review of the extant empirical literature on aural vocabulary indicates that aural vocabulary has been thus far been investigated with listening comprehension and language proficiency (e.g., Du et al., 2022; Matthews, 2018), written vocabulary knowledge, working memory capacity, and listening comprehension (Masrai, 2020), and general language proficiency, and metacognitive awareness in l2 learners' listening comprehension (GhorbaniNejad& Farvardin, 2022). Moreover, a review of previous investigations indicates that vocabulary learning strategies have been explored concerning learners' vocabulary learning and retention (e.g., AghajanzadehKiasi & PourhoseinGilakjani, 2022; Teng, 2022), motivation (Lee et al., 2022), and listening comprehension (Chen et al., 2022). Furthermore, as the review of available literature demonstrates viewing comprehension has so far been examined concerning captioning modes and incidental vocabulary acquisition (Montero Perez et al., 2014; Rodgers & Webb, 2020), viewing video materials and vocabulary learning (Rayhana&Limbona, 2018), learners' viewing techniques (Guieb& Cruz, 2017), imagery, subtitles, and captions (Peters, 2019), lexical coverage (Durbahn et al., 2020), learner-related factors, and testing instruments (Pujadas & Muñoz, 2020). Nonetheless, there is a lacuna in the empirical literature regarding probing the relationship among

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Iranian EFL learners' aural vocabulary size, vocabulary learning strategies, and their viewing comprehension, which is the focus of the present study.

II. LITERATURE REVIEW

2.1 Aural Vocabulary

Aural vocabulary refers to "the ability to recognize the phonological [aural] form of the word, access existing knowledge of that word, and produce a representation of it under time constraints" (Matthews & Cheng, 2015, p. 4). Matthew (2018) also defines aural vocabulary knowledge as the "knowledge of words mediated through the aural modality" (p.25). In a language class, comprehension of aural input plays a critical role in foreign-language learning. Aural vocabulary knowledge, that is the ability to recognize words as they are presented in spoken language, is more important to L2 listening comprehension than other forms of vocabulary knowledge. It is, therefore, important that listening be emphasized in the early phases of foreign-language instruction. Listening comprehension activities provide students with the aural component of the target language to help them better hear the intricate sounds (Jones Vogely, 1998). L2 listening teaching should be engaged with a focus on the aural modality of vocabulary.

For years, aural texts have been presented without visual or verbal/textual supportive information in listening comprehension. For any number of reasons, Students were often frustrated by such activities including the lack of prior knowledge of the topic, and the lack of visual information. Technology and language teaching have changed in recent years. Now, an aural L2 passage is followed by verbal and visual annotations. The literature has emphasized that accompanying images with an aural text positively enhance students' aural comprehension (Chung, 1995). It was believed that students comprehend an aural message wonderfully and acquire vocabulary best when they have access to visual and verbal annotations accompanying the aural material. With the help of visual and verbal annotations, learners can link information with the aural message and thus better retain information in long-term memory for later comprehension and vocabulary recall.

Coltheart and Rastle (1994) idea that there are two separable elements of vocabulary knowledge, aural and orthographic, which might be activated separately when engaged in different language skills. Reading and writing require activation of orthographic knowledge, speaking requires activation of aural knowledge while listening requires both types of knowledge. Receptive measures of vocabulary size, based on orthographic tests, are expected to correlate well with written skills, and respective measures of vocabulary size, based on aural tests, are expected to correlate well with aural skills. Nation (2001) believes that in addition to orthographic recognition, learners should be able to identify words by their sounds. It is believed that listeners should use two major sources; linguistic and non-linguistic for understanding an aural text (Stæhr, 2009). comprehending aural text is an inferential process through which listeners acquire linguistic knowledge such as phonological, semantic, lexical, syntactic, and nonlinguistic knowledge such as context knowledge, topic, or general knowledge of the world (Buck, 2001; Rost, 2002; Vandergrift, 2007). Without having encountered the equivalent degree of exposure to the target language characteristic of native speakers, L2 learners typically have sub-optimal aural vocabulary knowledge; that is learners have difficulty recognizing words in the spoken form.

Knowledge of a word in its orthographic form does not guarantee the capability to recognize that word when presented in spoken language (Goh, 2000). It is thought that extensive exposure to spoken materials can improve L2 learners' oral recognition skills. Studies have shown that L2 learners' phonological vocabulary knowledge is relatively smaller than their orthographic vocabulary knowledge (e.g., Milton et al., 2010). Extensive exposure to spoken discourse is expected to improve listening skills, lead to encountering new words, and enhance the potential of their acquisition (Webb & Rodgers, 2009). Because of the importance of developing measures of aural vocabulary size, Matthews (2018) employed The Aural Vocabulary Test to assess aural vocabulary knowledge (AVK). He designed it to measure

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"knowledge of words mediated through the aural modality" (Matthew, 2018, p.25).

Matthews (2018) investigated the interrelationship between three language-related variables including aural vocabulary knowledge, listening comprehension, and language proficiency. To measure the vocabulary size, the Vocabulary Level Test was administered. A version of the IELTS listening test was adopted to assess the participants' listening ability and comprehension. The results suggested that aural vocabulary tests at all levels can make a great contribution to the anticipation of listening comprehension ability. Only measures two levels of the aural vocabulary test were significant predictors of listening, whereas only level 1 AVK indicated a meaningful contribution to the perdition of listening comprehension. Masrai (2020) explored the contribution of aural vocabulary knowledge, written vocabulary knowledge, and working memory capacity to explaining listening comprehension. Among 130 non-native speakers of English, the present study examines what proportion of the variance in listening comprehension is explained by aural vocabulary knowledge, written vocabulary knowledge, and working memory capacity. The results show that aural vocabulary knowledge is the strongest predictor of listening comprehension, followed by working memory capacity, while written vocabulary knowledge contributes only marginally.

2.2 Vocabulary Learning Strategies

PavičićTakač (2008, p. 52) defines vocabulary learning strategies (VLS) as "specific strategies utilized in the isolated task of learning vocabulary in the target language". To find effective vocabulary learning strategies, a large amount of research on vocabulary learning strategies has been conducted. Most researches focus on three important areas: 1) general vocabulary learning strategies; 2) a taxonomy of vocabulary learning strategies; and 3) the most frequently used vocabulary learning strategies (Lip, 2009; Nation, 2001; Oxford, 1990; Schmitt, 1997). The vocabulary learning strategies generally involve cognitive strategies, metacognitive strategies, and social strategies. According to Hedge (2000), learners use a range of cognitive strategies to learn words such as using keywords, making associations, and learning words in groups. He defines cognitive as a mental operation concerned with working on new words to understand, categorize, and store them in a mental lexicon. Similarly, Schmitt (1997) states that cognitive strategies including written and spoken repetition, word lists, and flashcards are common strategies used in many parts of the world. Taking notes in class and keeping vocabulary notebooks are also useful and recommended by many teachers and writers. Metacognitive strategies, according to Schmitt (1997, p. 216), "are used by students to control and evaluate their learning, by having an overview of the learning process in general." Whereas social cognitive strategies involve asking someone, usually teachers and peers, for the synonyms, definitions or example sentences of a particular unfamiliar word.

In addition to the general vocabulary learning strategies, the taxonomy of vocabulary learning strategies has attracted many researchers' attention. One of the most famous taxonomies of vocabulary learning strategies is Schmitt's (1997) taxonomy. In this taxonomy, there are two main types of strategies: discovery strategies and consolidation strategies. Discovery strategies include determination strategies and social strategies while consolidation strategies encompass social strategies, memory strategies, cognitive strategies, and metacognitive strategies. According to Akbari and Tahririan (2009, p. 39), "Schmitt's (1997) taxonomy seems to be the most exhaustive and has the advantage of being organized around an established scheme of language learning strategies." Other well-known taxonomies of vocabulary learning strategies are Oxford's (1990) social, memory, cognitive, and metacognitive strategies; Gu and Johnson's (1996) metacognitive, cognitive, memory, and activation strategies; and Nation's (2001) planning, source, and processes categories.

Gu and Johnson's (1996) metacognitive strategies, according to Ghazal (2007), consist of selective attention and self-initiation strategies while cognitive strategies include guessing strategies, dictionary uses, and note-taking strategies. Memory strategies, on the other hand, entail rehearsal and encoding (i.e., association, imagery, visual, auditory, semantic, and contextual encoding) strategies. The last strategy in this taxonomy is the activation strategy which, as its

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name suggests, aims at activating the vocabulary that we have learned by using them in different contexts.

A more comprehensive taxonomy of vocabulary learning strategies, however, is Schmitt's (1997) taxonomy. Schmitt (1997) divides the strategies into two groups: Discovery strategies (strategies for the discovery of a new word's meaning) and Consolidation strategies (strategies for consolidating a word once it has been encountered). The first group consists of determination strategies and social strategies while the second includes social strategies, memory strategies, cognitive strategies, and metacognitive strategies. It should be noted that social strategies are found in both categories because they can be used at any stage of vocabulary learning. Another recent taxonomy is that of Nation's (2001). Nation categorized all vocabulary learning strategies into three classes: planning, source, and processes. The first category, according to Ghazal (2007), involves deciding where, how, and how often to focus attention on the vocabulary item. The second category (i.e., source) has to do with getting information about the word to know it. The third one includes noticing, retrieving, and generating (e.g., creating sentences containing new words) strategies. The examination of the taxonomy of vocabulary learning strategies plays a crucial role in this present study because it ensures that this study has consulted related literature, particularly the famous taxonomies of vocabulary learning strategies as mentioned above. It also builds a conceptual framework from which this study can be developed.

2.3 Viewing Comprehension

Viewing comprehension refers to "the ability which suits the learners' interest and ability to perceive meaning from visual presentations. Viewing involves interpreting images for which word stand, and making the relationship between visual images in video, and accompanying spoken words" (Durbahn et al, 2020, p. 56). Comprehension can be assessed, in non-reading contexts by presenting stories in different media. Stories can be presented using pictures (Paris & Paris, 2003), aurally, or via television (Van den Broek et al., 1996). Viewing comprehension is based on the presentation of short instructional videos followed by one or more comprehension questions concerning the preceding video stimulus. Using a variety of media such as television and print to assess comprehension assumes that comprehension skills transfer across these media. This transfer of skills is plausible for several reasons. First, television and print require similar cognitive processes to comprehend (e.g., making connections, sequencing events, and generating inferences). Second, research indicates that similar structural story factors predict what children (both in kindergarten and elementary school) remember from both televised and written narratives (Van den Broek et al., 1996). Barrett's Taxonomy discusses the different levels of Comprehension namely: literal, reorganization, inferential, evaluation, and appreciation.

Literal comprehension refers to the literal recognition, recall, or verification of details, main ideas, and sequence of events, comparisons, cause-effect relationships, and character traits. Reorganization comprehension requires students to synthesize, analyze, and/or organize information stated in a selection. Inferential comprehension is demonstrated when students use the ideas and information explicitly stated in a viewing material, students' intuition, and personal experiences as bases for making intelligent guesses and hypotheses. Students may infer supporting details, sequence, comparisons, cause and effect relationships, character traits, figurative language, and predicting outcomes. Evaluation comprehension deals with judgments and focuses on reality or fantasy, fact or opinion, adequacy or validity, appropriateness, worth, desirability, and acceptability. It also refers to judging the language and effect of the material in the light of appropriate criteria. It requires responses that indicate that an evaluative judgment has been made by comparing ideas. Appreciation comprehension deals with psychological and aesthetic. It refers to emotional responses to content, plot, or theme, sensitivity to various literary genres, identification with characters and incidents, reaction to the author's use of language, and response to generated images.

According to the Cognitive Theory of Multimedia Learning (Mayer, 2009), verbal and visual representations take advantage of the full capacity of humans for processing information and building connections (Scheiter et al., 2009), and comprehension is enhanced as a result (Mayer, 2005). Along the same lines, Mayer et al., (2014) assert that

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learners benefit from audio plus video because the images in the video help even complete beginner learners access word meaning, guess unknown words from context, and enhance the meaning of partially known words (Peters, 2019; Webb & Rodgers, 2009). Moreover, Michas and Berry (2000) found that participants perform better when they learn from video or pictures than from single-channeled texts. The findings suggest that the dynamic presentation of information provided by the video allowed learners to develop a better mental model of the task. The Contiguity Principle from the Cognitive Theory of Multimedia Learning supports the previous findings arguing that information is even more efficiently processed when words and images are presented simultaneously. Otherwise, cognitive overload may occur.

Given the influence of imagery on viewing comprehension, it is surprising to note that studies testing viewing comprehension have not addressed such a relationship. Vanderplank (2016) explains that foreign language teachers usually emphasize the teaching of verbal code over visual conventions. That is why most studies on viewing have focused on testing listening comprehension (instead of viewing comprehension) through inferential and detail questions (Rodgers & Webb, 2020) or general understanding, detailed understanding, and inferencing ability (Montero Perez et al., 2014). Research so far has not distinguished between questions that can be answered by using the verbal message from questions that require the visual message or the visual and verbal message, i.e., tests containing audio-based questions only instead of imagery-based and/or audio plus imagery-based questions.

To achieve the purposes of this study, the following research questions were conceived:

RQ1. Is there any statistically significant relationship between aural vocabulary size and viewing comprehension among Iranian EFL learners??

RQ2. Is there any statistically significant relationship between vocabulary learning strategies and viewing comprehension among Iranian EFL learners?

RQ3. Do aural vocabulary size and vocabulary learning strategies make any significant contribution to the prediction of viewing comprehension among Iranian EFL learners?

III. METHOD

3.1 Design

For this study, a quantitative correlational design was adopted to examine the possible relationship between EFL learners' aural vocabulary size; vocabulary learning strategies, and viewing comprehension. This research project was primarily a correlational study in the sense that in a correlational study, as Johnson and Christensen (2004) maintain, the researchers study relationships among two or more quantitative variables and make predictions based on an understanding of those relationships.

3.2 Participants and Setting

The participants of this study were a group of 112 Iranian male EFL learners selected based on a convenience sampling procedure from two private language institutes located in Qazvin. All the participants were in the upper-intermediate level of language proficiency. The age range of the participants was from 17 to 35. All the participants spoke Persian as the first language and used it as the language of education and they learned English as a foreign language.

3.3 Instrumentations

3.3.1 Aural Lex Test

Aural Lex Test is a kind of computer-delivered Yes/No test that estimates test-takers vocabulary size of the most frequent 5000 words in English. It is designed by Milton and Hopkins (2005). In this test, learners hear words, aurally, one by one. By clicking on happy face (Yes) or sad face (No), learners indicate whether or not they know each word. The purpose of this test is to assess the knowledge of spoken forms of English words among Iranian EFL learners by using aural formats of vocabulary size tests. In this test, test-takers were asked to answer 120 items one by one to indicate whether they knew each word or not.

3.3.2 Viewing Comprehension Test

This test was used to assess the viewing comprehension of participants through video clips. In viewing comprehension, the stimulus was a movie

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or short video clip. The short video clip was a maximum of 13 minutes long for reasons of feasibility. A documentary was selected based on their proficiency level and time constrain as a video clip. The selected video clip was not broadcast in the participants' country of origin. Therefore, participants have little background knowledge on the topic. Participants watched a 13-minute video clip, after which they were asked to recall the event and answer 15 comprehension questions about the program content. These questions were multiple choice questions. Learners were given 15 minutes to answer the questions. This test was a type of researcher-made test. The total correct answer of the learners' score was 60. Participants' score was classified into the following classification: Very poor (score: 0-12), Poor (score: 13-24), Fair (score: 25-36), Good (score: 37-48), Excellent (score: 49-60). To ensure the validity of this test, it was sent to three TEFL experienced professors and they were asked to evaluate the designed items. They confirmed the appropriateness and practicality of the items for assessment of viewing comprehension.

3.3.3 Schmitt's VLS Questionnaire

The present study used Schmitt's vocabulary learning strategies questionnaire (VLSQ). It is a 40-item Likert-scale questionnaire with a reliability index of 0.73 as reported by Naveh et al. (2011) for Iranian learners. The learners then were given their responses on five-point Likert scales, with the available answers being: never (1), seldom (2), sometimes (3), often (4), and always (5). This range of answers, which seemed to offer a reasonable variety of responses and was simple for the learners to answer, was adopted. Schmitt's taxonomy of vocabulary learning strategies was both clear and extensive so became the source of the strategies to be surveyed.

3.4 Procedure

The procedure of the study was carried out as follows:

3.4.1 Pilot Study

Before employing the instruments, a group of 30 EFL learners similar to the participants of the present study answered to the questionnaires and the test to find out whether the instructions were comprehensible, and whether the tests were reliable and valid**.** The participants were upper-intermediate English learners in private language institutes. To find out whether all the tests i.e., Aural Vocabulary Size (AVS); Schmitt's VLS Questionnaire, and Viewing Comprehension Test (VCT) used as the research instruments in this study are reliable measures, the Cronbach's Alpha method was adopted to estimate the reliability of them. The obtained results are presented in Table 1 below.

Table 1: The Reliability Index for ALT, VLSQ, and VCT

Instruments	Number of Items	N	Cronbach's alpha
Aural Lex Test	120	30	.73
Schmitt's VLS Questionnaire	40	30	.81
Viewing Comprehension Test	15	30	.85

As it is demonstrated in the above table, the coefficient alpha for AVS, PVST, and VCT were found to be .73, .81, and .85, respectively, suggesting that the test items have satisfactory and acceptable internal consistency. A generally accepted rule is that α above 0.7 indicates an acceptable level of reliability and 0.8 or greater is a very good level. However, values higher than 0.95 are not necessarily good, since they might be an indication of redundancy (Hulin et al., 2001).

3.4.2 Data Collection Procedures

The study was carried out during the spring of 2021. Two months before conducting the research, the researcher called the principals of the institutes and submitted the study outline entailing all the details of the project to them. The researcher then contacted the principals to ask for their approval. The data was collected from 112 EFL learners studying at two different English institutes. The tests were conducted in three sessions and the participants completed the tests individually.

First, the Aural Vocabulary Size Test (AVST) was administered in the class. This test consisted of 120 items (100 real English words and 20 pseudo-words) and was used to measure the aural vocabulary size of learners. The participants were given information

about how to run and use the software and then they were instructed to perform the actual task. Participants sat in front of a computer supplied with a headset and a screen. After completing the test, the scores were inputted into an Excel file.

In the next phase, Schmitt's Vocabulary Learning Strategies Questionnaire was given to the participants to identify the vocabulary learning strategies. The questionnaire was administered and the participants were given 30 minutes to complete the scale. In the last phase of the study, a short video clip was presented to participants based on their proficiency level. Immediately, after watching the short video clip, 15 comprehension tests were administered to evaluate their viewing comprehension. The results of three tests were analyzed using the SPSS 22 and the summary of results were tabulated.

IV. RESULTS

4.1 Addressing the First Research Question

The first research question of the current study aimed at investigating any significant relationship between aural vocabulary size and viewing comprehension of Iranian EFL learners. To address this research question, the scores of the participants on aural vocabulary size and viewing comprehension were correlated. Before using the appropriate inferential statistics test, it was needed to decide on the choice of parametric or non-parametric techniques. The table below demonstrates the results of descriptive statistics and the normal distribution of the data related to aural vocabulary size and viewing comprehension.

To calculate the normality of the data, the researcher used Skewness and kurtosis values. As can be seen in the table above, the Skewness and Kurtosis Ratio values for the data sets are within the acceptable range of +/- 1.96 demonstrating that the normality assumption is met (Pallant, 2011). Thus, the researcher used the parametric test of Pearson correlation to address this research question. Table 3 presents the results of the Pearson correlation coefficient between aural vocabulary size and viewing comprehension scores.

Table 2: Results of Descriptive Statistics and Normal Distribution of Aural Vocabulary Size and Viewing Comprehension Scores

	N	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Aural Vocabulary Size	112	60.87	19.05	3.255	.287	.455	.566
Viewing Comprehension	112	31.32	84.53	2.200	.287	.489	.566
Valid N (listwise)	112						

Table 3: Results of Pearson Correlation Coefficient Between Aural Vocabulary Size and Viewing Comprehension Scores

		Aural Vocabulary Size
Viewing Comprehension	Pearson Correlation	.473**
	Sig. (2-tailed)	.000
	N	112

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

Based on the results shown in the above table, there is a statistically positive and significant relationship between aural vocabulary size and viewing comprehension scores ($r = .473$, $n = 112$, $p = .000<0.01$).

4.2 Addressing the Second Research Question

The second research question of the present study explored any significant relationship between vocabulary learning strategies and viewing comprehension of Iranian EFL learners. To address the second research question, the scores of the participants on aural vocabulary size and vocabulary learning strategies were correlated. Before using the appropriate inferential statistics test, it was needed to decide on the choice of parametric or non-parametric techniques. The table below shows the results of descriptive statistics and the normal distribution of

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the data related to vocabulary learning strategies and viewing comprehension.

Table 4: Results of Descriptive Statistics and Normal Distribution of Viewing Comprehension and Vocabulary Learning Strategies Scores

	N	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Viewing Comprehension	112	31.32	4.532	.200	.287	.489	.566
Vocabulary Learning Strategies	112	88.85	17.879	.239	.287	.253	.266
Valid N (listwise)	112						

To calculate the normality of the data, the researcher used Skewness and kurtosis values. As can be seen in the table above, the Skewness and Kurtosis Ratio values for the data sets are within the acceptable range of +/- 1.96 demonstrating that the normality assumption is met (Pallant, 2011). Thus, the researcher ran the parametric test of Pearson correlation to address the second research question. Table 5 presents the results of the Pearson correlation coefficient between vocabulary learning strategies and viewing comprehension scores.

Table 5: Results of Pearson Correlation Coefficient Between Vocabulary Learning Strategies and Viewing Comprehension Scores

		Vocabulary Learning Strategies
Viewing Comprehension	Pearson Correlation	.612**
	Sig. (2-tailed)	.000
	N	112

Based on the results shown in the above table, there is a statistically positive and significant relationship between vocabulary learning strategies and viewing comprehension scores ($r = .61$, $n = 112$, $p = .000<0.01$).

4.3 Addressing the Third Research Question

The third research question of this study aimed at probing if aural vocabulary Size and vocabulary learning strategies make any significant contribution to the prediction of viewing comprehension. To investigate this research question, the researcher ran multiple regression analyses. Several assumptions need to be checked for multiple regression including multicollinearity, normality, outliers, linearity, homoscedasticity, and independence of residuals (Pallant, 2011). VIF index was consulted to check the multicollinearity assumption (See Table 7 for VIF values which are all lower than 10 indicating that the multicollinearity assumption is met). According to Pallant (2011), normality, linearity, homoscedasticity, and independence of residual assumptions can be checked by checking the Normal Probability Plot (P-P) of the Regression Standardized Residual and the Scatterplot. Normal Probability Plot (P-P) of the Regression Standardized Residual and the Scatterplot are shown in Figures 4.1 and 4.2, respectively.

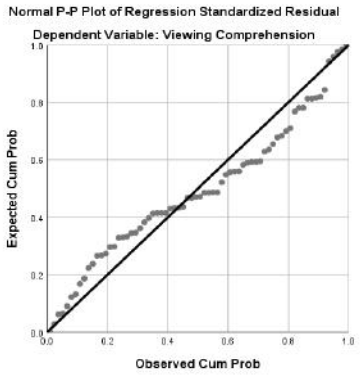

Fig.1: Normal Probability Plot (P-P) of the Regression Standardized Residual (Viewing Comprehension is the Dependent Variable)

As Figure 1 shows, all the dots are in a diagonal line from the top right to the bottom left which is an indication of normal data for multiple regression analysis (Pallant, 2011).

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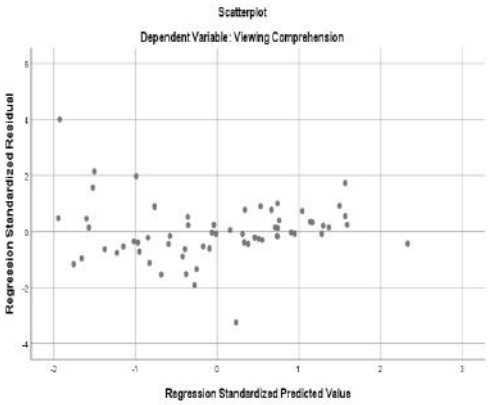

Fig.2: Scatter Plot with Viewing Comprehension as Dependent Variable

As shown in Figure 2, points are scattered in rectangular shape which suggests no violation of linearity, homoscedasticity, and independence of residuals assumptions (Pallant, 2011). Moreover, no cases were found with greater than -/+3 standardized residuals which is an indication of any threat of the presence of outliers (Tabachnick & Fidell, 2007).

After establishing the assumptions of multiple regression, the actual analysis was performed. The model summary for regression analysis is reported in the table below.

Table 6: Model Summary and ANOVA Test of Regression Analysis for Aural Vocabulary Size and Vocabulary Learning Strategies for Predicting Viewing Comprehension

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	df1	df2	Sig.
1	.675a	.456	.440	3.39	28.082	2	67	.000

a. Predictors: (Constant)), Vocabulary Learning Strategies, Aural Vocabulary Size

b. Dependent Variable: Viewing Comprehension

As Table 6 shows, as a whole Vocabulary Learning Strategies and Aural Vocabulary Size explained about 45% of the variance in the dependent variable (Viewing Comprehension). In other words, the Vocabulary Learning Strategies and Aural Vocabulary Size made a 45% contribution to explaining the variance in Viewing Comprehension. This amount of contribution was found significant as the F value was significant (F (2,67) =28.08, p=0.00 < 0.05). Thus, it can be concluded that aural vocabulary Size and vocabulary learning strategies make a significant contribution in the prediction of viewing comprehension.

To find out which one of the two independent variables i.e., aural vocabulary Size and vocabulary learning strategies is a better predictor of viewing comprehension, Beta values were checked. Table 7 displays the results.

Table 7: Coefficients for Vocabulary Learning Strategies, Aural Vocabulary Size, and Viewing Comprehension

	Unstandardized Coefficients		Coefficients			95.0% Confidence Interval for B		
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Part
1(Constant)	10.575	3.018		3.50	.001	4.551	16.600	
Aural Vocabulary Size	.152	.048	.303	3.17	.002	.056	.247	.28
Vocabulary Learning Strategies	.130	.024	.511	5.35	.000	.081	.178	.48

In Table 7, it is evident that the Beta value for vocabulary learning strategies is .511 which is significant at the level of .00 and higher than the Beta value for aural vocabulary size which equals .303 and is significant at the level of .002. Therefore, it can be inferred that Vocabulary Learning Strategies are a better predictor for viewing comprehension compared to aural vocabulary size.

5. Discussion

This study investigated any significant relationship between aural vocabulary size and viewing comprehension of Iranian EFL learners. Moreover, the study explored any significant

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relationship between vocabulary learning strategies and viewing comprehension of Iranian EFL learners. Furthermore, the study probed aural vocabulary Size and whether vocabulary learning strategies made any significant contribution in the prediction of viewing comprehension. The results indicated that there was a statistically positive and significant relationship between aural vocabulary size and viewing comprehension scores. It was also revealed that there was a statistically positive and significant relationship between vocabulary learning strategies and viewing comprehension scores. Moreover, it was shown that whole vocabulary learning strategies and aural vocabulary size made a significant contribution in the prediction of viewing comprehension.

Overall, the results of the current study substantiate the findings of previous investigations concerning the relationship between vocabulary knowledge and reading comprehension. For instance, Farvardin and Koosha (2011) showed that vocabulary knowledge significantly correlated with reading comprehension. In a similar vein, Mehranpour et al., (2011) showed that both vocabulary size and depth were significantly correlated with EFL students' reading comprehension. Likewise, Moinzadeh and Moslehpour (2012) showed that there is a close correlation between EFL learner's depth and breadth of vocabulary with their reading comprehension ability. Mizumoto and Shimamoto (2008) found that both the aural and written vocabulary size of the participants correlated strongly with the reading and listening proficiency measures. Kang et al's. (2012) findings demonstrated that vocabulary depth can make a much greater contribution in predicting reading comprehension compared to the other dimensions of vocabulary, regardless of the general language proficiency.

Moreover, the findings of the current study concerning the associations between viewing comprehension, aural vocabulary size, and vocabulary learning strategies are in congruence with the results of other previous studies. For instance, Montero Perez et al., (2014) investigated the impact of three captioning modes on the second language incidental acquisition of target vocabulary and comprehension of video clips. The findings revealed that the group of EFL learners who underwent video with captions scored equally well on form recognition and clip association and significantly outperformed the control group. Moreover, participants' vocabulary size correlated significantly with their comprehension scores as well as with their vocabulary test scores. Likewise, Rodgers and Webb's (2020) results indicated that using captions is likely to aid comprehension. In another study, by Rayhana and Limbona (2018) viewing video materials not only increases viewing comprehension and vocabulary acquisition only, but improves listening skills as well. Moreover, Guieb and Cruz (2017) showed how literature students perceive the use of movies or videos as a powerful viewing teaching technique and contribute to students' viewing comprehension. In the same line of research, similar to the results of this study, Peters (2019) showed that films with captions significantly contribute to vocabulary learning gains. In another study, Pujadas and Muñoz (2020) showed that both subtitles and captions aided content comprehension, and prior vocabulary knowledge emerged as a significant predictor, particularly in the captions condition. Overall, the results of the present study are a confirmation seal on the pivotal role of vocabulary as the main component of reading comprehension. Moreover, the findings of the current study point to the interconnection between vocabulary and reading comprehension. Thus, it can be said that vocabulary knowledge in all modes is a significant aspect of reading comprehension in general and viewing comprehension in particular.

6. Conclusion

The results of the current study point to the fact that vocabulary as the most important and basic component of language has a paramount role in comprehension. Thus, EFL teachers are encouraged to consider the important role of vocabulary learning strategies and aural vocabulary size when it comes to reading compression in general and viewing comprehension in particular. Given that vocabulary learning strategies play a pivotal role in second language acquisition and comprehension, the results of this study offer preliminary, yet important, pedagogical implications for the teachers, materials developers, and syllabus designers in EFL settings to improve and foster learners' vocabulary learning. Teachers are encouraged to support learners with vocabulary learning strategies when it comes to

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viewing comprehension. Likewise, materials developers, and syllabus designers are also encouraged to develop and design materials and syllabuses so that EFL learners receive instruction in terms of vocabulary learning strategies so that they can enhance their aural vocabulary size and viewing comprehension. Based on the results of the current study, EFL learners can also be persuaded to pay attention to their aural vocabulary size and vocabulary learning strategies, should they intend to enhance their viewing comprehension.

However, the results of the current study revealed that there was an interconnection between aural vocabulary size, viewing comprehension, and vocabulary learning strategies. Such findings cannot be taken as conclusive and future investigations may replicate the current study to confirm the results of the present investigation across different contexts. Specifically, the current study was limited in that the collected data were largely based on self-reported scales. Therefore, future studies may use other means of data collection to add to the validity of the results. Moreover, this study was delimited to a small group of upper-intermediate EFL students studying in private language institutes. Another study can be carried out with participants from other proficiency levels to add further to the generalizability of the findings. In the future, investigations with other variables such as learning styles, personality types, and gender can also be done to shed light on the interconnection between vocabulary size, viewing comprehension, and vocabulary learning strategies while considering the role of other variables. Future researchers can also incorporate learners' anxiety as an additional variable into their investigations to understand the relationships between the variables of the present study in light of language learning anxiety. Given the fact that knowing a word involves much more than just understanding its meaning, further research could also examine the relationship between the incidental acquisition of multiple layers of word knowledge and its relationship with aural vocabulary size, viewing comprehension, and vocabulary learning strategies.

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