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Exploring the Effect of Morphological Instruction on Vocabulary Learning among Iranian EFL Learners

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Abstract

Vocabulary knowledge plays a crucial role in academic development and therefore scholastic success (National Reading Panel, 2000). Also, students' vocabulary knowledge expands through a variety of ways. One of the most practicable strategies in vocabulary learning supported by many researchers is using affix knowledge. The purpose of present study is to investigate the effect of morphological instructions on vocabulary learning among Iranian secondary school students. Participants in this study were sixty Iranian secondary school students who were assigned to control group (30) and experimental group (30). A pre-test and post-test comprising two vocabulary tests measuring students' morphemic analysis of general English words were administered. The data were analyzed using the Independent Sample T-test to determine if there were improvements made in the two measures within each group, and subsequently whether the magnitude of improvement between the two groups were significant. The results indicated that the experimental group outperformed the control group in the process of guessing the meanings of complex words depending on the morphological analysis. Furthermore, the results did not show significant differences between Morphological Relatedness Strategy and Morphological Structure Strategy in terms of students' achievements.

Keywords*: morphological awareness, vocabulary learning, morphology, morphological knowledge*

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Introduction

Studies on the relations between different aspects of metalinguistic awareness and vocabulary learning have mostly focused on phonological awareness. An aspect of metalinguistic awareness that has received less attention in research is morphological awareness. Furthermore, studies on children's acquisition of morphology and morphological awareness in English have focused on the acquisition of three types of linguistically complex words: inflections, derivatives, and compounds (Kuo & Anderson, 2006). Chang et al., (2005) described morphological awareness as the access to the meaning and structure of morpheme in relation to words.

According to Morin (2003) the analysis of morphemes can supply important insights into the arrangements, processes, and input relevant to second language learning. Kuo and Anderson also (2006) stated that a learner who comprehends how words are formed, by combining prefixes, suffixes, and roots, tends to have larger vocabulary store and better reading comprehension. Five different morphological word types in English were introduced by Anglin (1993) .The five types are root words (e.g., short, closet), inflected words (e.g., smoking, reports), derived words (e.g., shortish, treelet), literal compounds (e.g., sunburn, birthday), and opaque, idiomatic compounds or lexical idioms, which are then called simply 'idioms' (e.g., mouse tail, "a plant of the crowfoot family"; pink lady, "a cocktail").

On the other hand, vocabulary knowledge plays a crucial role in academic development and therefore scholastic success (National Reading Panel, 2000). Therefore, "without some knowledge of that vocabulary, neither language production nor language comprehension would be possible" (Angelin, Miller & Wakefield, 1993: 2). Additionally, Blachowicz, Fisher, Ogle & Watts-Taffe) 2006 (stated that many researchers in the past have emphasized the importance of vocabulary in language learning particularly in academic environment. Vocabulary knowledge in English is considered the substantial factor that could distinguish learners who could read and understand what they have read, from those who have difficulty reading even though they may have a colossal vocabulary stock in their native language. According to Anglin (1993), morphological problem solving is a process by which the meaning of previously unknown complex words can be decoded.

A striking feature of the vocabulary learning that children achieve is that it occurs despite the fact that school curricula appear to place little emphasis on explicit vocabulary instruction (Beck, McKeown, & Kucan, 2002). Although the National Reading Panel (2000) emphasized vocabulary instructions a central aspect of academic development, it cited lack of sufficient research to recommend any particular strategy over another.

Since research on the efficacy of word parts has not been carried out in the Iranian secondary high school, this study explores the effectiveness morphemic analysis on vocabulary learning particularly for Iranian learners in the health sciences.

Literature Review

Bowers & Kirby (2009) conducted a study to examine the effects of morphological instruction on vocabulary acquisition. The participants were 81 children in two Grade 4 classes and two Grade 5 classes from two public Catholic schools in and around the area of Kingston, Ontario. All participants were administered the Peabody Picture Vocabulary Test III (PPVT-III) (Dunn & Dunn, 1997), a test of receptive vocabulary knowledge. The researchers concluded that the treatment group made better use of pre-test vocabulary knowledge in learning new vocabulary. Results are discussed in light of the growing debate regarding whether to teach many words in a shallow way or to provide deep, rich instruction about fewer words

To determine the relationship between morphological awareness and vocabulary size of EFL learners, Tabatabaei & Yakhabi (2011) collected the data from Iranian high school students who were randomly selected. Nation's Vocabulary Level Test (VLT) was used to test students' knowledge of words drawn from the 2000, 3000 and 5000 most frequent occurring word families. Two morphological awareness tasks (a morpheme identification task and a morphological structure test) were also used to assess students' morphological awareness. The VLT results indicated that the students performed better at the 2000 level than the two higher frequency levels. There existed a significant relationship between the learners' performance on the vocabulary level test and the morphological awareness tasks. These findings implicated the importance of facilitating the students' morphological awareness in English vocabulary learning for EFL learners in Iran.

Gilbert, Goodwin, Compton, and Kearns (2013) conducted a study to evaluate the effects of morphological analysis of multisyllabic words on reading comprehension among 169 fifth graders from 40 schools. Five measures were used in this study: Academic Knowledge subtest of Woodcock-Johnson III, Morphological Awareness test, Multisyllabic Word Reading test, Reading Comprehension

assessment, and The Peabody Picture Vocabulary test. The findings of the study showed that the relationship between word reading and morphemic analysis was instrumental in yielding positive result in reading comprehension. A major difference was noted on the effect of morphological awareness, where 39 percent of the participants encountered more problems reading morphologically-complex words compared to the rest of the subjects who were at a higher level of proficiency. This study also indicated that the relationship between morphological analysis and reading comprehension was mediated by ability in reading multisyllabic words. Morphological awareness was found to have an important association with reading comprehension particularly for weaker readers.

A study was done by Saeidi & Mirzapour (2013) to investigate the relationship between morphological awareness and listening comprehension ability in Iranian EFL learners. The participants of this study compromised a total of 40 students (25 females and 15 males) majoring in English Language Teaching at Hamedan Branch, Islamic Azad University. They were randomly divided into two groups of 20 participants, Control and Experimental groups. Four short listening passages were used as the pre-test which included 30 tokens of words with morphemic structures. Then four one hour sessions were held for the experimental group. After four sessions , four short listening passages were used as the post-test. The obtained result indicated relationship between morphological awareness and listening comprehension ability.

Goodwin, Gilbert and Cho (2013) conducted a study on the effects of morphological awareness on word reading among adolescents, looking into learner characteristics and their word reading ability. The study was carried out on 221 young middle school students enrolled in two suburban middle schools in the United States. The following three measures were used in their study: Reader-by-Word Measures, Derived-Word Reading Accuracy (DERIVED), and Root-Word Reading Accuracy (ROOT). The results showed that the participants' performance at reading a particular root word described their skill of associating words of the same root. For instance, the participants were able to associate the word 'predict' with 'prediction'. This points to the fact that knowledge of morphology promoted learners' vocabulary skill where they were able to relate and derive meanings of the words that have the same root. The researchers concluded that the learners' skills, morphemic awareness and knowledge of vocabulary, substantially promoted word reading ability and honed their morphological skills. It was highly important for learners to be equipped with word reading skills and morphological awareness as they encountered more academically specific vocabulary in school textbooks which were mostly morphologically-complex in nature.

Finally, Paiman, Thai & Yuit (2015) explained the effects of morphemic analysis of Graeco-Latin roots and affixes as a vocabulary learning strategy among Malaysian ESL learners. Three intact classes of undergraduates majoring in health sciences were assigned to three different treatments which are instructions focusing on Graeco-Latin morphemic analysis, general morphemic analysis and use of contextual clues as vocabulary learning strategies. Participants in all groups underwent the instructional intervention which was done biweekly over a five-week period. Each group was taught how to derive word meanings using these three different strategies. The findings of their study showed that (a) the group that were taught Graeco-Latin morphemic analysis scored the highest in all three vocabulary measures, (b) the group taught general morphemic analysis also improved in morphemic analysis of general English words but not Graeco-Latin words, and improved slightly in overall vocabulary size, but (c) the group that was taught to use contextual clues showed no improvement in all three vocabulary measures. The results also indicated that morphemic analysis, specifically analysis of Graeco-Latin word parts, may be a better vocabulary learning strategy particularly for the health sciences.

Research questions and hypotheses

To investigate the effect of morphological awareness on vocabulary learning, the following research questions guided the study:

1. To what extent the application of the morphological analysis does affect the process of vocabulary learning?
2. Which specific type of morphemic analysis instruction (Morphological Relatedness & Morphological structure) is more effective for vocabulary learning?

Method

Participants

The population from which the subjects of the present study are selected, includes 120 male intermediate level English language learners attending English institutes of Dehdasht, Kohgilouyeh & Boyerahmad. EFL students in these institutes take classes of English in reading, writing, speaking and listening. They are exposed to English 4 hours per week. The subjects of the study were recruited from

different classes. The first language of all the students is Persian. In order to make the participants homogenous, all the students take the TOEFL proficiency test. Then, sixty homogeneous students having the lower level of English proficiency are selected as the main participants of the study. The mean age of these participants including is 16.5 years, with an age range of 15 to 18 and they are classified into two groups including one experimental group and one control group. 30 students are randomly assigned to each of these groups.

Instruments

To answer the present study's questions of the effect of morphological awareness on vocabulary learning among Iranian secondary school students, three instruments are applied to achieve the purposes of the study. The first test is Proficiency Test.

Proficiency Test

The language proficiency test materials for the study consisted of 30 structure items, 40 vocabulary items and 5 passages followed by 30 reading comprehension items. The passages were general enough to ensure that discipline specific knowledge was not the primary factor affecting performance. It is important to know that the final 100 items were selected among the 120 items submitted by the item-constructors. Once the items were submitted, the coordinators (3 assistant professors) commented on each item to improve the quality of the items. So, the possible and needed alterations were made by the coordinators. The content validity of the test was approved by the 8 experienced assistant professors in the Department of Foreign Languages and Linguistics at Shiraz University. Moreover, to determine reliability, test-retest was run and the index was .91.

Morphological Relatedness Test

The Morphological Relatedness Test was employed to measure respondents ability in guessing whether the derived word is morphologically related to the base word or not (for example, A :happy→ happiness YES NO; B: bus →business YES NO). Curinga (2014), states that this test is important because it can measure students' ability in doing morphological analysis. This test comprised 24 items concerning derivational suffixes. The respondents were asked circle YES, if the followed derived word was related to the base word; NO, if it was not related to the base word.

Morphological Structure Test

The Morphological Structure Test was employed to measure the respondents' ability in using derivational affixes to create new words. Curinga (2014) asserted that this test is important since it can measure students' manipulation ability in constructing new words. The respondents were asked to construct the word that best matched the sentence (for example, Help. In the sentence: My sister is very helpful). The test was composed of 24 items concerning derivational suffixes.

Data Collection

The data collection was done in two phases which are pre-test and post-test. In the first phase, the two groups took a pre-test (Morphological Relatedness Test & Morphological Structure Test) in order to see their performance in guessing the meanings of the new words depending on morphological analysis. In the second phase, the experimental group were given two treatments on analyzing complex words (e.g. Unbelievable = un + believe + able), whereas the control group did not receive any treatment. As the two treatments for experimental group were completed, both groups performed a post-test with the same tool (Morphological Relatedness Test & Morphological Structure Test) to see the effectiveness of morphological analysis is strategy their vocabulary achievement. The study also compared the two strategies based on the students' results to determine which one of the two instruments was more effective.

Results and Discussion

In this section, the results of the study are presented and discussed. The pre-and post-test scores for the two vocabulary measures of the two groups are shown in Tables 1, 2, 3, 4, and 5.

Table 1. The Pre-Test, Morphological Relatedness Test

Morphological Relatedness Test	N	Mean	Std. Deviation	Min score	Max score	F	t	df	Sig. (2-tailed)
Experimental	30	9.20	2.07	4	15	.495	1.2	58	**.501**
Control	30	8.53	2.2	4	14				

Based on the information presented in Table 1, t (58) is 1.2 and the two-tailed P value equals 0.501 which is more than .05 .By conventional criteria, this difference is considered to be not statistically significant. Thus ,the result indicates that there is no significant difference between students test result before training.

Table 2. The Pre-Test, Morphological Structure Test

Morphological Structure Test	N	Mean	Std. Deviation	Min score	Max score	F	t	df	Sig. (2-tailed)
Experimental	30	8.80	2.31	5	16	.501	1.4	58	**.611**
Control	30	9.1	2.08	6	14				

According to Table 2, t (58) is 1.4 and the two -tailed P value equals .611 which is more than 0.05. So, by conventional criteria, this difference is considered to be not statistically significant .Hence, based on the finding, there is no significant difference between the students' vocabulary test results prior to training.

Table 3. Post-Test, Morphological Relatedness Test

Morphological Relatedness Test	N	Mean	Std. Deviation	Min score	Max score	F	t	df	Sig. (2-tailed)
Experimental	30	15.36	1.47	13	19	3.39	5.10	58	**.00**
Control	30	13.00	2.06	9	17				

As the results in Table 3 show, t (58) equals 5.10 and the two -tailed P value equals 0.00 which is less than .05. So, by conventional criteria, this difference is considered to be statistically significant and the null hypothesis is accepted. Hence, there is a difference between experimental group and control group concerning the morphological relatedness test.

Table 4. Post-Test, Morphological Structure Test

Morphological Structure Test	N	Mean	Std. Deviation	Min score	Max score	F	t	df	Sig. (2-tailed)
Experimental	30	16.1	1.52	14	19	3.45	5.2	58	**.00**
Control	30	12.83	2.3	8	16				

As Table 5 indicates, t (58) = 2.483 and the two-tailed P value equals 0.00 which is less than 05. So, by conventional criteria, this difference is considered to be statistically significant. Thus ,null hypothesis is accepted and there is a significant difference between the achievement of experimental group and control group regarding morphological structure test.

Table 5. The Comparison of Morphological Relatedness Test and Morphological Structure Test

Variable	N	Mean	Std. Deviation	Min score	Max score	F	t	df	Sig. (2-tailed)
Morphological Relatedness Test	30	15.36	1.47	13	19	3.35	4.82	58	**.121**
Morphological Structure Test	30	16.1	1.52	14	19				

As Table 6 demonstrates, t (58) is 4.82 and the two -tailed P value equals 0.121 which is more than 0.05. So, by conventional criteria, this difference is considered not to be quite statistically significant. Hence, the null hypothesis is rejected. This means that there is no significant differences between students' achievements comparing the use of morphological relatedness and morphological structure strategies.

Conclusions

The present research showed that the morphological awareness is an important tool in improving the vocabulary of Iranian secondary school students. The pre-test was carried out by the respondents without any morphological analysis strategy instruction, both groups performed poorly in pre-test. Following training of the experimental group, both groups then were given post-test and the results de indicated that the experimental group outperformed the control in post-test after receiving treatments prior to the second test. This means that the experimental group outperformed the control group after being exposed to the morphological strategies. Therefore, the hypothesis claiming morphological analysis strategy does effect the process of vocabulary learning was approved.

The first research question addressed whether students learn to identify the bases of morphologically complex words as a result of the instruction. If targeting the morphology system as a tool for generative word knowledge for elementary students is to be successful, it must be established that these participants master morphological linguistic content that they would not master as a result of typical classroom instruction. The Base Identification results were clear. After controlling for initial vocabulary, the instructional group was significantly better at identifying the base of complex words for each level of transfer.

The second research question was which specific type of morphemic analysis instruction (Morphological Relatedness & Morphological structure) more effective for vocabulary is learning. The data illustrated that and there is a no significant difference between the achievement of experimental group and control group regarding morphological structure test.

This is in line with the premise posed by Rasinski et al. (2008) who claim that exposing students to Greek and Latinate word elements could be an effective vocabulary learning strategy This study also is consistent with Bowers & Kirby (2009), Tabatabaei & Yakhabi (2011), Gilbert, Goodwin, Compton, and Kearns (2013), Saeidi & Mirzapour (2013), Goodwin, Gilbert and Cho (2013), and Paiman, Thai & Yuit (2015) studies which reported that learners who have morphological awareness were able to discriminate morphologically structured word from simple words.

To sum, the results obtained from this study also show that morphological analysis does indeed help second language learners improve their English vocabulary knowledge.

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