The Influence of Morphological Analysis on Vocabulary Learning Among Iraqi Secondary School Students in Malaysia

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Abstract

The aim of this study was to identify the effectiveness of morphological analysis strategy employed by Iraqi secondary school students in guessing and manipulating complex words; and also to determine which one of the two strategies (Morphological Relatedness & Morphological Structure) is more effective. This study involved 40 students who were assigned to control group (20) and experimental group (20). To achieve the purpose of the study, Morphological Relatedness Test and Morphological structure test, adapted from Curinga (2014), were given to both groups in form of pre-test and the results did not show significant differences. Meanwhile, the experimental group received two treatments on morphological analysis strategy prior to post-test, whereas control group did not receive any treatment. Finally, both groups took a post-test with the same tool and the results showed that the Experimental group outperformed the Control group in the process of guessing the meanings of complex words depending on the morphological analysis. In addition, the results did not show significant differences between Morphological Relatedness Strategy and Morphological Structure Strategy in terms of students achievements.

Key words: Morphological analysis strategy, Vocabulary learning, Morphological relatedness, Morphological structure, Iraqi students.

1.0 Introduction

Today, vocabulary plays an important role in the language learning in general. This is why there are many scholars who have studied this area to help develop the vocabulary learning through different strategies. (Laufer, 1995). According to Bear et al. (2008), vocabulary growth is an indicator of how well the foreign language learners can master English language skills such as, reading, speaking, listening, and writing. In addition, Alderson and Banerjee (2002) argue that knowing a lot of word entries is crucial for tapping other language skills. Without these entries, learners might encounter problems in comprehending the language they are exposed to. However, there are some strategies through which vocabulary repository can be expanded and fostered. One of these ways is using

morphological analysis and teaching the words structure to the learners, sometimes described as ''word consciousness', because it helps grasp new vocabulary effectively in relatively short time. According to Ellis (1997), morphological analysis is a predicator of learners' speaking ability, which allows novel words to be constructed and formed in the learners' mind. In addition, Kuo and Anderson (2006) state that morphological analysis can be defined as the ability to use the knowledge of word formation rules and the pairings between sounds and meanings. Learners can acquire new words by disassembling and reassembling complex words into meaningful parts based on morphological analysis, and also guessing the meaning of complex and novel words based on the root (e.g. nation→*national; nationality; nationalism; nationalist; international*). The process in which words are exposed to dissembling-reassembling is called morphological analysis.

Morphological analysis in this study has to do with the ability of Arab students in guessing the meaning of new words successfully because the success of Arab students is measured by their ability to deal with complex words successfully in the target language (Asgari & Mustapha, 2011; Asgari and Mustapha (2011). In order to master English language, Arab students need to move beyond the traditional way of learning English vocabulary. Arab students might spend many years developing their vocabulary knowledge, but when it comes to using English in the process of vocabulary learning, they can neither understand the meaning nor the form of complex words due to their insufficient knowledge of morphology. So, this study is aimed at investigating the effectiveness of morphological analysis strategies in vocabulary development.

1.1 Problem Statement

There are a number of debates on how a second language learners master the English language when exposed to an English language context such as classroom setting. Since vocabulary constitutes the building blocks of language and has an important role in language learning, many scholars have focused on the strategies of vocabulary teaching and learning (Kaweera, 2013). Among these strategies, morphological analysis strategies which have appeared to be effective for vocabulary growth (Zhang & Koda, 2012). According to Ferguson (2006), morphological analysis is mainly concerned with the comprehension of word meaning. She maintains that the biggest challenge among secondary school students struggling to comprehend complex words is lack the ability to morphologically analyze complex words to uncover the words meaning. Moreover, Wagner et al. (2005) show that learners' awareness of morphology develops throughout their childhood and adolescence; and they generally understand how inflectional and derivational morphemes are constructed to form a new word. Finally, Kaweera (2013) indicates, if this issue is not dealt with care, it would be an ongoing concern which negatively affects the progress of EFL learners towards vocabulary learning.

Studies show that morphological analysis strategies such as morphological relatedness and morphological structure are effective in vocabulary enhancement (Varatharajoo et al. 2015). However, very little research, if any, has been reported on the Iraqi secondary school students' use of morphological strategies to develop vocabulary items. Furthermore, experimental study on Iraqi secondary school students vocabulary learning strategies is almost absent in literature. Therefore, this study is undertaken to address the issue and bridge the gap in literature.

1.2 Research Objectives and Questions

The purpose of this study is to examine the effectiveness of morphological strategies in developing vocabulary items**.** While focusing on the core subject matter, this study also attempts to answer the following research questions.

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

1.3 Hypothesis

1. Morphological analysis strategy has effect on the process of vocabulary learning.
2. There is a significant difference between the achievement of students in using morphological relatedness test and morphological structure test.

2. Literature Review

This study focuses on the morphological aspect of a language. This strategy helps in developing the vocabulary repository of a student (Baumann et al., 2002). Nagy and Scott (2000) believe that the application of linguistic trails by pointing out that morphology is the main reserve of information for an ESL student for learning new words and their meanings, due to their English knowledge limitations. Kieffer and Lesaux (2007) mentions that word meanings can be deduced form morphemic analysis, and students do learn from this method quite well. This evaluation is to explore the knowledge of suffixes and prefixes, and to provide remedies for students, through morphological analysis strategy, errors in morphology related areas, and thus enabling them to learn vocabulary effectively.

Till now, all analysis has proved the strong interdependence of vocabulary and morphological analysis strategy. Kieffer and Lesaux (2007) claim that as students reach the secondary stage from the primary, they encounter more difficult texts. So they need to be equipped with more cognitive tools to study new vocabulary. Both studies of Baumann et al. in 2002 and 2003 displayed teaching, suffixes, roots and prefixes, contributed to vocabulary learning and text comprehension. On the other hand, Biemiller and Boote (2006) assert that morphemic analysis is a highly crucial learning strategy, for promoting vocabulary repository. Gomez (2009) supports this too, because she found that this tool enhanced word reading, vocabulary and reading comprehension, and so morphemic analysis application is necessary for English language students.

Antonacci and O'Callaghan (2011) point out sources which contain ample proof of morphemic analysis awareness as a useful tool for students to recognize affixes and roots, including their semantics, and apply this to decipher new words by the morphemic analysis strategy. Antonacci and O'Callaghan (2011) emphasize that students see words holistically when instructors apply the morpheme analysis method. Teachers induce students to check word parts and their semantics collaboratively. So this analytical method can help students to achieve consciousness in

atomizing and connecting meaning from the morphology of word parts, apart from derivation of meanings contextually and lexically.

The preceding outcome is commensurate with earlier observations checking the effectiveness of morphemic analysis strategy. Ebbers and Denton (2008) show that students benefitting from this strategy, unraveling meanings from word segments. Bowers et al. (2010) showed the potential strength for this method, in a quasi-experimental mode. Out of 2 groups, the group instructed in this method, showed greater success with word suffixes and prefixes learning. Kotirde and Yunos (2014) evaluated performance between higher and lower grades, and found the former had attained double the words composed by the latter. They researched that learning ability by this method increases with age and grade/level. Thus, they approves of an instruction which consists of this method suitable to learners' level and age.

Summing up, researches and experiments prove that applying morphological analysis can enhance vocabulary learning among young students, by deriving meanings from word parts. In addition, teachers need to apply strategies that are apt for the students' learning environment. But prior to put this method into action, learners' current awareness of morphological analysis should be investigated. Hence, this study focuses on one of the most significant strategy of vocabulary development among foreign learners which is morphological analysis strategy.

3.0 Methodology
3.1 Study design

This study is an experimental research as the students received some treatments and they were expected to guess the meanings of the words depending on morphological analysis. The students were divided into two groups and were assigned as control group and experimental group. The experimental group received treatment through which they got to know about the common prefixes and suffixes used in forming the words which they came across during the study, while the control group did not receive any treatment. Figure 1 illustrates the study procedure.

Figure 1: Study design
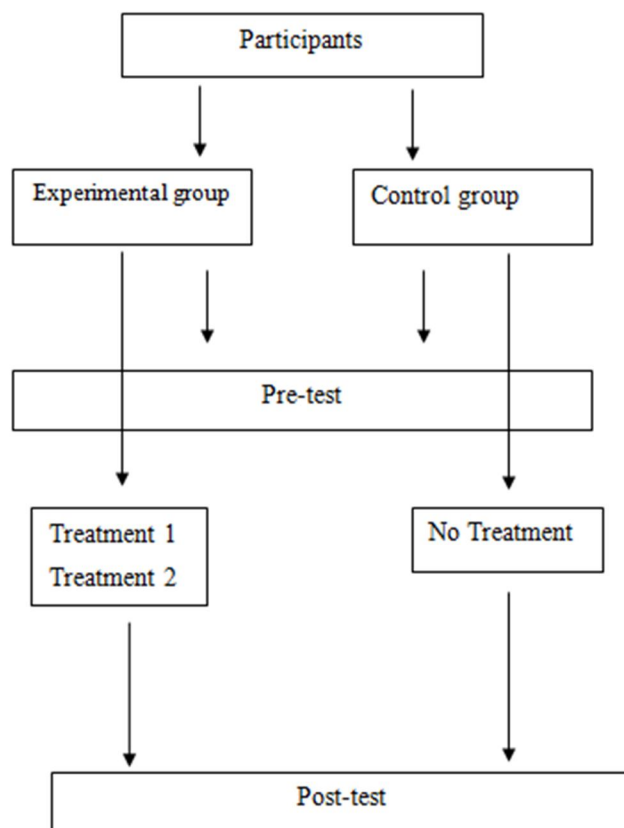
3.2 Participants

Studies suggest that the minimum number of an experimental research has to be 30 participants (Fraenkel & Wallen2009). Accordingly, the present study involved 40 Iraqi secondary school students who were divided into two groups: experimental (20) and control (20) groups. In selecting and assigning the students as control group and experimental group, random sampling was used. Noteworthy is that the respondents were homogenous in terms of age (17) and proficiency level (pre-intermediate). To determine their proficiency, their English score was used.

3.3 Study instruments

This study used two instruments namely morphological relatedness test and morphological structure test adapted from Curinga (2014).

3.3.1 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.

3.3.2 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.

3.4 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 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.

3.5 Validity
In order to ensure the reliability of the Morphological Relatedness Test and Morphological Structure Test, a pilot study was done and the values of Cronbach Alpha reliability for Morphological Relatedness Test and Morphological Structure Test were 0.86 and 0.79 respectively. The reliability of this instrument has been proved as Sekaran and Bougie (2010) show that the coefficient Alpha above (0.70) is acceptable, as given in Table1.

Table 1: Cronbach Alpha of Morphological Structure Test

Instrument	No of Items	Score
Morphological Relatedness Test	24	0.86
Morphological Structure Test	24	0.79

4. Results

H_0 (1): is there a significant difference between the vocabulary achievement of experimental group and control group?

Table 2: The Pre-Test, Morphological Relatedness Test

Variable	N	Mean	SD	T	DF	Sig.
Experimental Group	20	2.40	0.54			
Morphological relatedness test				0.9543	38	P>0.05
Control Group	20	2.25	0.45			

As Table 2 illustrates, t (38) is 09543 and the two-tailed P value equals 0.3459 which is more than 0.05. By conventional criteria, this difference is considered to be not statistically significant. Thus, the result shows that there is no significant difference between students test result before training.

Table 3: The Pre-Test, Morphological Structure Test

Variable	N	Mean	SD	T	DF	Sig.
Experimental Group	20	2.35	0.51			
Morphological Structure test				1.3538	38	P>0.05
Control Group	20	2.15	0.42			

As Table 3 demonstrates, t(38) is 1.3538 and the two-tailed P value equals 0.1838 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 4: Post-Test, Morphological Relatedness Test

Variable	N	Mean	SD	T	DF	Sig.
Experimental Group	20	3.90	0.88			
Morphological relatedness test				2.514	38	P<0.05
Control Group	20	3.25	0.75			

As Table 4 indicates, t (38) equals 2.514 and the two-tailed P value equals 0.0163 which is less than 0.05.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 5:Post-Test, Morphological Structure Test

Variable	N	Mean	SD	T	DF	Sig.
Experimental Group	20	3.40	0.78			
Morphological structure test				2.483	38	P<0.05
Control Group	20	2.90	0.45			

As Table 5 illustrate, t(38)= 2.483 and the two-tailed P value equals 0.0176 which is less than 0.05.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.

H_0 (2): is there a significant difference between the achievement of students in using morphological relatedness test and morphological structure test?

Table 6: The Comparison of Morphological Relatedness Test and Morphological Structure Test

Variable	N	Mean	SD	T	DF	Sig.
Morphological relatedness test	20	3.90	0.88			
				1.9015	38	p>0.05
Morphological structure test	20	3.40	0.78			

As Table 6 demonstrates, t (38) is 1.9015 and the two-tailed P value equals 0.0648 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 difference between students' achievements comparing the use of morphological relatedness and morphological structure strategies.

5. Discussions

The current study indicated that the morphological analysis strategy is an important tool in enhancing the vocabulary of Iraqi 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 show that the experimental group outperformed the control in post-test after receiving treatments prior to the second test. This implies 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. This study was consistent with Khodadoust, Aliasin and Khosravi's (2013) study which reported that learners who have morphological awareness were able to discriminate morphologically structured word from simple words.

The relatively significant difference between the experimental and control groups in identification and construction of derivational words, implies that it would be necessary to apply morphological analysis strategy in vocabulary learning process. Khodadoust et al. (2013) claim that, students who have the ability to learn new words depending on the morphological structure analysis can boost their vocabulary repertoire.

Furthermore, the study found that there is no significant difference between the results of the application of the two strategies. However, these strategies helped learners enhance their vocabulary. This means that the teachers and stakeholders need to focus on these strategies to help students foster their vocabulary learning process.

6. Recommendations

However, despite the limited results, it would be interesting to replicate this study after a morphological analysis strategy program is established. In future studies, the morphological structure test should be modified to be more appropriate for Arab secondary school students. It is advisable to extend the instructional lessons time more than two days in order for students to minimize the cognitive load they might face. In addition, this study might be useful to be utilized with different Arab secondary school students in Malaysia to see if there are varieties between students' outcomes in each school (Al Farsi, 2008).

7. Conclusion

This is an experimental study that examined the effectiveness of using morphological analysis strategies in developing vocabulary among Iraqi EFL secondary schools students. After comparing the results of both groups, it was shown that the experimental group outperformed the control group in terms of guessing and manipulating morphologically structured words. The study also compared the result of two strategies and reported that there is no difference between the two strategies. The study results suggest that there is a need for morphological analysis strategy intervention in school language teaching (Gomez, 2009).

Collectively, many researchers argue that the morphological awareness is crucial for learners as it is correlated with vocabulary growth. Moreover, experimental learners who received instructional treatments are able to guess the meaning of complex words based on their morphological awareness (Curinga, 2014; Khdadoust et al, 2013; Gomez, 2009). Hence, the process of developing morphological awareness should be taken into consideration as it contributes to learners' vocabulary growth (Al Farsi, 2008).The findings of the study, which revealed that the control group who performed poorly compared to experimental group, are a clear indication that there is an urgent need to include clear instructions on morphological knowledge (Al Farsi, 2008).

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APPENDIX

Morphological Relatedness Test:

Directions: Read the following word pairs silently as I read them aloud. Try to decide if the second word *comes from* the first word and has a similar meaning. Circle YES if you think the second word means the same thing or almost the same thing as the first word. Circle NO if you think the second word does not have a similar meaning to the first word.

Example A:	happy	happiness	YES	NO
Example B:	cat	category	YES	NO
Example C:	run	runner	YES	NO
1) ear	earth		YES	NO
2) possible	possibility		YES	NO
3) perceive	perceptive		YES	NO
4) bus	business		YES	NO
5) strong	strengthen		YES	NO
6) involve	involvement		YES	NO
7) pure	purist		YES	NO
8) care	careful		YES	NO
9) angry	angle		YES	NO
10) crumb	crumble		YES	NO
11) press	president		YES	NO
12) bathe	bath		YES	NO
13) profession	professional		YES	NO
14) eight	eighth		YES	NO
15) fill	filter		YES	NO
16) cape	capitalize		YES	NO
17) person	personal		YES	NO
18) humor	humanity		YES	NO
19) pal	palace		YES	NO
20) agree	agreement		YES	NO
21) general	generosity		YES	NO
22) sign	signal		YES	NO
23) present	presentable		YES	NO
24) fin	finalize		YES	NO

B)Test of Morphological Structure:

Directions: I am going to say a word and read you a sentence. I want you to change the word so that it best matches the sentence. Read the sentence silently as I read it aloud. Fill in the blank with the form of the word that best matches the sentence.

Example A: *Help.* My sister is very <u>helpful</u>.
Example B: *Farm.* My uncle is a _____.
Example C: *Dryer.* The clothes need more time to _____.

1) *Decision*. It was hard for the boy to _____.
2) *Success*. The woman's career was very _____.
3) *Courageous*. The man showed great _____.
4) *Five*. This student is the fourth and the next is the _____.
5) *Marvel*. The view from the mountain was _____.
6) *Achievement*. Good grades are difficult to _____.
7) *Reason*. Her argument was _____.
8) *Originality*. This painting is the _____.
9) *Strength*. The girl was very _____.
10) *Adventure*. The ski trip seemed _____.
11) *Famous*. The actor gained a lot of _____.
12) *Marriage*. She is the woman he wants to _____.
13) *Know*. The professor had a lot of _____.
14) *Teach*. The man was a very good _____.
15) *Human*. The kind man was known for his _____.
16) *Baker*. She put the bread in the oven to _____.
17) *Happy*. The little girl jumped up and down _____.
18) *Popularity*. The girl wants to be _____.
19) *Express*. 'OK' is a common _____.
20) *Discussion*. The enemies have a lot to _____.
21) *Improvement*. My teacher wants my spelling to _____.
22) *Permit*. Her father refused to give _____.
23) *Appear*. He cared about his _____.
24) *Dangerous*. The children are not in any _____.