

Affixation Knowledge Strategy in Teaching English Vocabulary for Medicine

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Abstract

Vocabulary is a subset of all four language skills in the process of language learning; yet the way it is absorbed is probably the least stressed one in the setting of classrooms. The crucial reasons for this ignorance may lie in the lack of emphasis on its teaching. Until recently, there has been less elucidation at this point as an essential element of language proficiency. Further reasons for upholding the need to master vocabulary stems from the fact that vocabulary has an essential role in English language acquisition, which becomes even more prominent for university students. There are theories and techniques for teaching and learning vocabulary set forth in accordance with different perspectives on its mastery among which making use of affixes knowledge and word parts are accounted for as one of the most prevalent strategies corroborated by lots of researchers. This study explores ways to help Iranian EFL learners master vocabulary more straightforwardly and persistently. Resting upon morphemic analysis is considered as one of the strategies which inspire learners' vocabulary improvement. In morphemic analysis, students master the ways to analyze words into their meaningful segments eventually leading to the discovery of meaning for the entire word (Ives, Bursuk, & Ives, 1979). Morphemes encompass word roots, prefixes and suffixes as well as inflected endings (Baumann & Kame'enui, 2004). Via enlightenment about these word parts, students apprehend new words and catch meaning which eventually lead to melioration of reading comprehension skill. In the meantime, this knowledge will positively influence learning English etymology as a way of improving students' capability to apprehend and absorb English lexicon and internalize their meaning easily in their reading comprehension. These notions were the vertebra in setting out this research over which 70 students of medicine were picked as participants and were randomly assigned to two groups of experimental

and treatment. The teaching vocabulary for the experimental group involved analyzing the vocabulary into word parts, i.e., via breaking the words down into their roots, suffixes and prefixes while the control group was taught using traditional approach. Following administration of pre- and post- tests, paired sample and independent t-tests were used to analyze the collected data. The results stood behind the notion that the experimental group outperformed the control group. To deal with the second hypothesis, the post test scores were compared with the students' final test scores and Pearson Correlation was 0.082, which was higher than 0.05 which, in turn, led to the decision that there was no significant relationship between post test and final exam scores.

Key Words: Affixation, Reading comprehension, Vocabulary knowledge

1. Introduction

Vocabulary makes the ground for the quality of learners' speaking, listening, reading and writing. Wilkins (1972) comments that “. . . while without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (pp. 111–112). Ellis (1997) believes that vocabulary knowledge is a pre requisite to learners' discourse comprehension, which enables grammatical rules to be modeled in the learners' mind. In addition, Hudson (2007) states that language is comprised of words and learners' vocabulary is central in language and its acquisition.

Teaching vocabulary is profitable to students in the sense that it helps them understand and communicate with others in English. Vocabulary is the base to language and has high importance to language learners. Words are the basic elements of a language, labeling objects, actions, ideas without which the intended meaning is not possible to be conveyed. The noticeable and important role of vocabulary knowledge in second or foreign language learning has been recently emphasized by theorists and researchers in the field. Likewise, various approaches, techniques, exercises and practice have been suggested in the field, aimed to teach vocabulary (Hatch & Brown, 1995). Vocabulary learning strategies are one part of language learning strategies which in turn are part of general learning strategies (Nation, 2001).

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Getting acquainted with affixes and analyzing the words into their building blocks and components is one of the ways to learn vocabulary. Making use of affix knowledge to improve vocabulary is one of the most prevalent strategies corroborated by lots of researchers (Nation, 1990; Bauer & Nation, 1993). Nation (1990) comments that, one of the merits of using affix knowledge for vocabulary learning is that through affix learning, intermediate learners can learn unknown words by associating them with previously known words or affixes. As a result, learners can increase knowledge of the language using them. Vocabulary is one of the most crucial elements of the second language acquisition and can be generally explained as knowledge of words and word meaning. Ellis (1997) considers vocabulary knowledge as a prerequisite to students' discourse comprehension, which makes grammatical rules structured in the learners' mind. Hudson (2007) believes that language consists of words and learners' vocabulary is an important factor in language and its acquisition. Various ways can contribute to effective teaching and learning vocabulary such as affixation practice, flash cards, intensive reading and so on.

English has an extended, rich vocabulary, with a great deal of English lexical items that have been transferred from other languages all though the history of language development. To be more specific, the most popular task by which English learners to develop their vocabulary knowledge is reading comprehension (Anderson et al. 1988). Reading is a very complicated practice that demands a great number of variegated skills among which is mastery over vocabulary.

1.1. Etymology and Word meaning

Etymology is concerned with the original meanings of root words. Taking the word itself, "etymology" derives from a Greek word, etymon, which means "true sense." The last part, ology, derives from logos which means "word" and is used to refer to "to study". In this sense, etymology is the study of the true sense and points to the original meaning of words. In etymology "common factors" are used in words, which facilitate understanding of words and understanding leads to a better remembering and retention. Some Words are comprised of building blocks that match each other.

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Suffix, prefix, and root of words are essential parts which are frequently used in many English words. According to Davoudi and Yousef (2009), suffixes and prefixes cannot be considered as words on their own. Pierson (1989) emphasized that etymological teaching could be advantageous in second language instruction. The teacher and students can better perceive the meaning of words and their relationships with other words provided they have some knowledge of etymology. Having the knowledge of these word relationships, learners could reach what educational psychologists call meaningful learning which is associated with prior learning, and probable to be used and generalized in future learning experiences.

Pierson (1989) asserts that teaching etymology could provide meaningful linguistic information that will be practical for intermediate and advanced second language learners. Ilson (1983, as cited in Gu, 2003) mentions four types of etymological information learners can benefit from: (a) etyma and cognates; (b) morphological analysis of lexical units in terms of their constituent structure; (c) morphological analysis of lexical units in terms of processes of word formation; and (d) analysis of lexical units in terms of the cognitive procedures (e.g., metaphor) of their formation and development.

Davoudi and Yousefi (2009) state that applying etymological approach could be a quick way to the mastery of words, as lots of English words are comprised of prefixes, suffixes, and roots that can be recognized by learners. By perceiving the meaning of the roots, learners can enhance their vocabulary learning at a high rate. They also address prefixes, suffixes, and roots as three vital elements in etymology approach.

1.2. The Relationships Between Vocabulary Knowledge and Reading Comprehension

Vocabulary knowledge is essential in reading comprehension; which implies that to understand a text, knowing the meaning of words are required. A great number of researches have indicated the strong relationship between vocabulary and comprehension. Anderson and Freebody (1981) consider the proportion of hard words as a good predictor of text difficulty. They also comment that reader's general vocabulary knowledge is a good predictor of text comprehension.

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Being a complex process, reading comprehension has many levels of processing. Being able to manage unknown words included in text is one of the basic requirements of comprehension.

Readers who are dealing with tasks at word-level are using a great proportion of their cognitive space which could be used for deeper levels of text processing. It is not always appropriate to depend only on contextual cues to guess the meaning of unknown words, as this process leads to an erroneous perception of key terms which not deep, especially in content-area reading (Paynter, Bodrova, & Doty, 2005). Adult readers should have a minimum knowledge of the way words work and some strategies for dealing with the new words faced throughout the day.

Reading is a complicated procedure that demands variety of skills. Being a very complicated process, reading has been examined from different perspectives by researchers. While some studies have focused on the influence of prior knowledge on reading comprehension (Qian, 2002) others study the influence of vocabulary knowledge on it (Joshi & Aaron, 2000; Martin-Chang & Gould, 2008).

It is not only having a rich vocabulary domain that determines how skilled the readers are, but also the way they can deal effectively with new ones. It is completely natural that one cannot have the prior knowledge of all the words one will face in a in a passage.

1.3. Root, Suffix and Prefix

Roots are the fundamental building blocks of all words. Through learning prefixes and suffixes, students can get the meaning behind various words and have the skills of separating unknown words into elements that are easily understood, all facilitating understanding the meaning. Understanding the position of prefix (at the beginning) and suffix (at the end) in a word is important.

One way through which students can improve their vocabulary knowledge is mastering the knowledge of word building devices such as affixes. Affixes in English include prefixes and

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suffixes. Making use of affix knowledge to increase vocabulary knowledge is one of the most common strategies corroborated by many researchers (Nation, 1990). There are many ways to enhance our knowledge of vocabulary, one of which can be considered as having knowledge of prefixes that can help learners in mastering unknown words. The major purpose of this study is for students to confidently perceive the meaning of unknown words during reading in any subject area.

Words are building blocks in a language. In this study focus on the effectiveness of teaching new words through learning prefixes as opposed to a translation approach is examined. When it comes to teaching vocabulary, teachers in Iran tend to use the word translation approach, which focuses on emphasizing spelling and meaning. The way in which the researcher considered to analyze the row data and find appropriate result mentioned in the following sections making use of affix knowledge to increase vocabulary knowledge is one of the most common strategies corroborated by many researchers (Nation, 1990; Bauer & Nation, 1993). The result of a questionnaire conducted by Schmitt (1997) on Japanese EFL learners indicated that 69% of them believe that studying words by analyzing affixes and roots is beneficial. Despite the above statistics, 15% of learners were reported to put this strategy in use only (Schmitt, 1997). It shows that while many students have positive view toward this strategy; few students use this in their learning process.

A great deal of affix studies regarding Japanese EFL learners, pay attention to their knowledge of affix (Mochizuki & Aizawa, 2000). The number of studies which concentrate on the validation of the usefulness of systematic vocabulary teaching using affix knowledge is still rare. This study tries to find if teaching affix knowledge intentionally leads to better vocabulary learning. To obtain a complete picture of vocabulary learning using affix knowledge, it would be desirable to observe students' performance on prefixes and suffixes. However, this study focuses on prefixes only, since teaching both (prefixes and suffixes) increase the number of words to be dealt with and could possibly lead to a heavy learning burden on the learners

1.4. The Statement of the Problem

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To learn a foreign or second language at intermediate and advanced levels, learners should acquire thousands of words. Blachowicz, Fisher, and Watts (2005) comment that, three factors cause difficulties in learning words: (1) the word specifications, (2) the learner characteristics, and (3) the desired level of word learning.

Second and foreign language learners look for practical ways to increase the possibility of retaining new words in long-term memory, but forgetting occurs frequently. Language learners usually keep saying that they forget new words after a short time they acquire them. If the numbers of unfamiliar words are abundant in a reading comprehension task, the readers should spend too much mental energy finding out the unfamiliar word(s) and it will be difficult for them to understand the passage as a whole. Teachers help students learn important words prior to reading difficult or unfamiliar texts.

However, the main problem is that sufficient notice has not been given to effective teaching, in spite of the proved importance of vocabulary knowledge. In addition, there are various strategies for dealing with vocabulary items, one of which is learning vocabulary by affixes which empower learners to better understand unknown words later on. Non-native speakers have difficulty learning English word systems that have roots and standard rules for prefixes and suffixes. As a result, it is useful to have a good deal of prefixes and suffixes knowledge. Understanding their meanings along with the time and ways they are generally used, can lead learners to understand unknown words and can also lead to improvements in their reading and writing.

1.5. The Significance of the Study

Nation (2001) asserts that vocabulary learning is vital for some reasons: First, having a vast domain of vocabulary helps to a better comprehension of reading on the part of learners. Second, learners with higher vocabulary knowledge outperform not only on their reading comprehension, but also on their writing, listening, speaking and thinking since words are important in all of these

skills. From among the plentiful ways of vocabulary knowledge enhancement, learning with affixes and roots is considered as an interesting and easy way.

A great deal of survey indicates the relationship between vocabulary knowledge and reading comprehension (Joshi, 2005; Joshi & Aaron, 2000; Manyak & Bauer, 2009; Martin-Chang & Gould, 2008; Ricketts, Nation, & Bishop, 2007). Joshi and Aaron (2000) concluded that vocabulary knowledge can predict reading ability when factoring reading speed with decoding and comprehension. Martin-Chang and Gould (2008) found a significant correlation both between vocabulary and reading comprehension and between reading rate and primary print knowledge. Vocabulary knowledge is vital in reading comprehension since its role is like the background knowledge in reading comprehension. Having higher vocabulary knowledge helps students in decoding process, which is a crucial element of reading (Qian, 2002). Lots of researchers view vocabulary knowledge as an essential variable that influences reading comprehension in both the first and second language learning (Alderson, 2000; Joshi, 2005; Qian, 2002; Ricketts, Nation, & Bishop, 2007).

1.6. Research Questions

To carry the research forward, the following research questions were generated:

1. Is it effective for Iranian medical field students to learn new vocabulary via affixation strategy?
2. Do studying prefixes and suffixes have any significant effect on reading comprehension of Iranian medical field students?

Likewise, the following hypothesis were thought to help in actualizing the research objectives:

H1. It is not effective for Iranian medical field students to learn new vocabulary via using affixation.

H2. Studying prefixes and suffixes do not have any significant effect on reading comprehension of Iranian medical field students.

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2. Method

2.1. Participants

This study was carried out at Zanjan University of Medical Sciences during the March, June 2015. The subjects in this study included 70 (40 males and 30 females) Iranian students of medicine in Zanjan University of Medical Sciences in the age range of 19- 25 years old. They took a 3-unit General English course and attended classes at Zanjan University of Medical Science.

2.2. Instrumentation

2.2.1. Placement Test

A placement test measures a learner's level of language. In fact, this test diagnoses how proficient or skilled someone is in a particular activity. field of study, language, etc. The English Unlimited Placement Tests have been designed by Cambridge University Press (2010) to be used for placing students into groups corresponding to the six levels of the series.

The scoring procedure for this test is according to the following Table

Table 1

Placement Test Scoring Recommendations

Test Score (# correct)	Level
Written test score	
0-15	<i>Starter</i>
16-35	<i>Elementary</i>
36-55	<i>Pre Intermediate</i>
56-75	<i>Intermediate</i>
76-100	<i>Advance</i>

English Unlimited Placement Test version 1.0 by Cambridge University Press (2010) was implemented to make decisions based on the level of students. The test mainly focuses on vocabulary recognition. It consisted of 120 multiple choice questions. Through a paper and pencil test, students were asked to attempt all the items and fill out the English Unlimited Placement Test

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in 40 minutes. When attempting the test, they were informed that there was not any pass or fail in the given test.

2.2.2. Pretest

Before starting treatment, a pretest was administered to indicate the knowledge level of students. The pretest used in this study was designed by the researcher. The test mainly focused on vocabulary based on book of 1100 words You Need to Know by Murray Bromberg and Melvin Gordon. It consisted of 40 multiple choice items. Before conducting the main pretest, the researcher conducted a pilot test in preparation for the main pretest in order to achieve reliability and validity. Reliability is the criterion which “provides information on whether the data collection procedure is consistent and accurate” (Seliger&Shohamy, 1989, p. 185). In this study, reliability was established through the piloting of the pretest. Then the reliability of 40 items was investigated by the use of Crobach's Alpha formula to calculate the internal consistency of the test. It was calculated by Excel software. After calculation, an average value of Crobach's Alpha =0.78 was obtained for the test. Meanwhile, content and face validity of the items were investigated by expert judgment in this field. Validity refers to “the extent to which the data collection procedure measures what it intends to measure” (Seliger&Shohamy, 1989, p. 188). Validity can be judged by finding out if the data collection procedure is a good representation of the content which needs to be measured.

Before the main participants were given the pretest, a pilot test was conducted. This test consisted of 40 multiple-choice items, carried out among 17 pharmacy students taking the same course in Zanjan University of Medical Science as a pilot test, which was developed by the researcher. After the exam, item facility of each test item was estimated. Then the reliability of 40 items was investigated by the use of Cornbach Alpha, an average value was obtained for the test 0.55.

Table 2.

Case Processing Summary

Cases	N	%
Valid	17	94.4
Excluded	1	5.6
Total	18	100.0

a. Listwise deletion based on all variables in the procedure.

Table 3

Reliability Statistics

Cronbach'sAlpha ^a	N of Items
.556	40

2.2.3. Posttest

After the participants studied vocabulary for 8 experimental weeks, they took a post test to assess their vocabulary knowledge and measure their learning as a result of the course experience. Then, learners' post test scores were compared with their final scores in order to figure out if studying prefixes and suffixes have a significant effect on Iranian learner's reading comprehension. Then a t-test was implemented. T-test was used to examine whether two samples were different and was used due to the unknown nature of the variances of two normal distributions.

2.3. Procedure

As was mentioned above, this study employed three tests: a placement test, a pretest and a posttest. The participants first took a placement test in order to measure their initial English

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knowledge, which assumed to be helpful in grouping the students into experimental and control groups. After taking the placement test, students were randomly assigned to two groups. They were equally two groups based on odd/even numbers. Participants with odd numbers constituted the experimental group, while even numbers were included in the control group. The experimental group received instruction based on affixation or analyzing the words into suffixes and prefixes as well as roots. However, the control group received instruction without affixation knowledge. The experiment lasted over 8 weeks, two 90- minute sessions a week. Twenty minutes out of each 90-minute class time was devoted to teaching selected English words. The experimental group was taught to use prefixes / suffixes and roots by analyzing the English words. In the beginning part of the experiment, the teachers in charge of the experimental group explained the patterns of affixation with target words and provided examples. The vocabulary list that the experimental group studied consisted of 15 units, one per class day, and each unit explained the affixes used. Throughout this process, the teacher explained the word, *interactive*, for example by using affixation knowledge. *Inter-* is a prefix with the meaning of each other and the root of the word is act. The suffix *-ive* is used with adjective, so the teacher demonstrated that this word is an adjective, suffix maker. In this way, participants received instruction in the patterns of word structures as well as grammatical function. In contrast, in the control group the teacher pronounced the word and explained the meaning of each word, and then had the subjects of the control group learn the target words for the remainder of the time. Vocabulary tests were used to measure the learners' vocabulary knowledge, which were conducted over 8 weeks, two sessions a week. After 8 weeks, the resulting scores on both groups' vocabulary tests were collected. On the final day of the research, students were given a posttest measuring their affix knowledge. The scores from the pretest and posttest were compared as well as the scores between groups by using t-tests to determine if students in the experimental group performed differently than those in the control group.

2.4. Data Collection

A pretest was designed by the researcher which served two aims: first, to specify the students' level of proficiency and vocabulary knowledge at the beginning of the study, enabling

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the researcher to decide about the level of students' progress in each group before and after the treatment through comparing the pre-test scores with the post-test scores. Second, to ensure that students were almost at the same level of proficiency and vocabulary knowledge before study, so that any possible changes in the post-test could be related to the treatments that the groups received, not the differences they had in advance.

After being taught with their respective teaching method, students in both groups were asked to take post-tests. Students' scores in post-test could be either used to make comparison inside the same group before and after the treatment or to make comparison with the other group to find which mode of instruction was better at developing students' vocabulary.

2.5. Data Analysis

Data Analysis was done quantitatively via Statistical Package for Social Sciences (SPSS), which is a computer program that was used to analyze data in research studies in Social Sciences. As explained in the previous parts, the very first step in this study was to make sure that students of the two groups were not statistically different with regard to their vocabulary knowledge. To come to this conclusion, two independent sample t-tests were used; one compared the mean of pretest scores and the other compared the mean of post test scores.

In order to answer the research questions, first, both pre- and post-tests were scored and all test results were entered into SPSS for data analysis, and the researcher ran paired sample T-tests using SPSS to compare the results in two groups to verify the effectiveness of the instruction of lexical inference in the experimental classes. In addition, an independent samples t-test was administered to see if there was a statistically significant difference between two groups in terms of their vocabulary knowledge. The same steps were taken to answer the second research question. It means that the researcher ran a paired sample t-test to examine if there was a statistically significant difference between the pre- and post-test results of the groups and then ran an independent sample t-test to consider if there was a statistically significant difference between two groups in terms of their development.

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3. The Results

3.1. The Results of Placement Test

As stated above, English Unlimited Placement Test was used to homogenize the participants of the study. To select the participants, 70 students took the English Unlimited Placement Test and students whose score was between 36 and 75 were entered in to the main study. Table 3. shows the descriptive statistics of the participants' Unlimited Placement Test scores.

Table 3.

Descriptive Statistics of the Participants' English Unlimited Placement Scores

	N	Minimum	Maximum	Mean	Std. Deviation
English Unlimited Placement test	70	36	75	22.28	9.204
English Unlimited Placement test	70				

Table 4

Frequency of the Participants' English Unlimited Placement Test Scores

Score	36	38	42	45	46	50	56	57	59	60	63	65	68	70	72	75
Frequency	5	3	6	6	8	6	6	7	5	5	2	4	1	2	2	2

As Table 4 displays, 42 students whose scores were between 36 and 75 were selected to take part in the study.

3.2. The Results of the First Research Hypothesis

The first research hypothesis of the study aimed to investigate that if it is effective for Iranian ESP students of medicine to learn new words via affixation strategy. Table 5. reflects the

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descriptive statistics of the participants' pre- and post-tests in both experimental and control groups.

In order to be sure about the normal distribution of the pretest scores in both groups, the researcher ran an Independent Samples Test on all sets of scores. Table 6 puts forward the results of this test.

Table 6. Levene's Test

Group Statistics

Group		N	Mean	Std. Deviation	Std. Error Mean
Pretest	Experimental	39	25.33	5.488	.879
	Control	26	24.15	4.576	.897
Posttest	Experimental	39	33.23	6.663	1.067
	Control	26	25.38	5.170	1.014

As it is indicated in Table 6, p-value for all sets of scores was higher than 0.05, meaning that the scores encompassed normal distributions and the parametric tests of independent and paired samples t-tests could be used.

In Table 6 Levene's Test for Equal variances yields a P-value of 0.577. This means that the

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Pretest	.314	.577	.905	63	.369	1.179	1.303	-1.424	3.783
			.939	59.778	.351	1.179	1.256	-1.333	3.692
Posttest	3.226	.077	5.069	63	.000	7.846	1.548	4.753	10.940
			5.331	61.450	.000	7.846	1.472	4.904	10.789

difference between the variances is statistically insignificant and the statistics in the first row

should be used. In the first row, the p-value is equal to 0.369 which is higher than 0.05 and indicates that there is not any significant difference of pre-test scores between the control and experimental groups. The 95% confidence interval for the difference between two means was (4.904, 10.789)

For the purpose of investigating the first null hypothesis of the study, the researcher, ran two paired samples t-tests between pre- and post-test scores of the control and experimental groups.

3.3. The Results of the Second Research Hypothesis

The second research hypothesis of the study attempted to explore if knowing prefixes and suffixes have any significant effect on vocabulary without any emphasis on affixation on Iranian learners' reading comprehension. Table 7 demonstrates the descriptive statistics of the participants' final exam.

Table 7

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Final Exam	Experimental	39	15.5189	2.21141	.36355
	Control	26	14.3111	3.23923	.74313

The final exam results appear in Table 7. Based on this table, the means of experimental and control groups are 15.51, 14.31, respectively. Based on Tables 8, and 9, the results obtained from t-test revealed that two groups did not differ significantly in their performance on the post-

test at .05 level of significance. The degree of structural significance (.747) is more than $\alpha=.05$. So, there is no significant difference between the experimental and control groups concerning their final performance.

Table 8.

Control Group

Correlations

		Post Test	Final Exam
Posttest	Pearson Correlation	1	.082
	Sig. (2-tailed)		.747
	N	26	26
Final Exam	Pearson Correlation	.082	1
	Sig. (2-tailed)	.747	
	N	26	26

Table 9.

Experimental Group

Correlations

		PostTest	FinalExam
Posttest	Pearson Correlation	1	-.037
	Sig. (2-tailed)		.828
	N	39	39
Final Exam	Pearson Correlation	-.037	1
	Sig. (2-tailed)	.828	
	N	39	39

Table 10

Independent Samples Test

Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper

Equal variances assumed	4.912	.031	1.646	54	.106	1.20787	.73370	-	2631.	2.67884
Equal variances not assumed			1.460	26.877	.156	1.20787	.82729	-	4899.	2.90569
								1	6	

In order to see whether the treatment given to the experimental group had caused any significant change in this group and to see if the participants in this group had performed significantly differently on the final exam, another independent t-test was run. The results obtained from this statistical test are presented in the Table. The independent sample t-test demonstrated in Table 10 indicated that the mean difference between the experimental and control groups' scores measured at the time of posttest was significant. There is, in fact, a mean difference of 1.20 points between the means of the two groups. As Table 10 shows, the level of significance (.74) is greater than the probability value, $P\text{-value} = 0.747 > \alpha = .05$.

4. Discussion

As vocabulary plays a crucial role in language learning, language learners are expected to have pretty a large scope of vocabulary to fully comprehend what they are reading. In other words, the extent of comprehension is directly related to the extent of the individual's vocabulary. Hence, this study aimed to investigate the effect of vocabulary learning by suffixes and prefixes on Medical students' reading comprehension. The results obtained from the analysis of data ($t = 5.069$; $p = .000$) showed participants in the experimental group improved significantly in post vocabulary test. The results imply that learning vocabulary through affixes is more effective than learning without affixes.

This finding is compatible with some of the studies conducted earlier and reported in the literature review. Carlisle (1995) declares that a person with morphological awareness knows the meaning and structure of morphemes in relation to words. Wysocki and Jenkins (1987) suggested that being able to make morphological productions help expanding vocabulary knowledge within an appropriate linguistic context. Knowledge of prefixes, like dis- in dislike, or the un- in unlock, suffixes like the -ness in happiness or the -tion in connection or generation, and compounds, are classified in derivational morphology, and inflectional morphology and are associated with grammatical inflections like the -s in cars or the -ed in jumped.

To answer second research question, studying prefixes and suffixes have a significant effect on Iranian learner's reading comprehension. A paired sample t test was conducted to compare post test and learners final scores of both experimental and control group. Based on the results of data analysis ($t=1.646$, $p= .106$), it can be concluded that there is no significant difference, meaning that second research question is rejected. Although improvement in vocabulary was significant, the result of achievement test did not support this finding.

5. Conclusion

This study was an attempt to find the effect of vocabulary learning by using affixation knowledge on Iranian Intermediate learners reading comprehension. In so doing, the study aimed to find answers for the following research questions:

1. Is it effective for Iranian medical field students to learn new vocabulary via affixation strategy?
2. Do studying prefixes and suffixes have any significant effect on reading comprehension of Iranian medical field students?

Therefore, two groups of students were selected and the experimental group underwent the treatment. Upon the completion of treatment, the results of the study revealed that in the experimental group in contrast to the control group, there was a considerable improvement. In spite of the fact that both groups indicated a certain degree of improvement, experimental group

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outperformed the control group in a statistically significant level and this became evident when having a closer look at the learners' performance in both groups. As the results of the statistical analysis revealed, both null hypotheses of the study were rejected. Finally, it was inferred that learning vocabulary through suffixes and prefixes can contribute to the improvement on learners reading comprehension.

5.1 Pedagogical Implications

This research was conducted to indicate the importance of teaching vocabulary through suffixes and prefixes which proved to be very helpful in improving their vocabulary learning and reading comprehension, teaching new words which has always been a hard chore for the teachers.

The findings of this study propose that learning vocabulary through affixes could produce a favorable balance of attention in comparison to traditional vocabulary learning. It may be because of the interest of students toward new method. There are particular possible implications taken from this study for language teachers and material developers.

Teachers can be encouraged to employ vocabulary learning via affixes to facilitate vocabulary instruction and spend constrained time of class to other skills such as listening or writing. Moreover, material developers, course book designers, and curriculum planners could make use of the findings of the present study. Based on our findings, they can supply opportunities for the students to become familiar with the affixes and take advantage of this kind of vocabulary learning for their learning. Providing students with the chance to match their language learning capacities with their technology knowledge is well beneficial. This matching process enables the learners to handle the language learning in a newer and more innovative way.

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References

Anderson, R. C., &Freebody, P. (1981). Vocabulary knowledge.In 1. T. Guthrie (Ed.), Comprehension and teaching: Research reviews (pp. 77-117). Newark. DE: International Reading Association.

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- Anderson, R. C., & Davison, A. (1988). Conceptual and empirical bases of readability formulas. In A. Davison & G. Green (Eds.), *Linguistic complexity and text comprehension: Readability issues reconsidered* (pp. 23-53). Hillsdale, NJ: Erlbaum.
- Alderson, J.C. (2000). *Assessing reading*. Cambridge: Cambridge University Press.
- Bauer, L., & Nation, P. (1993). Word families. *International journal of Lexicography*, 6(4), 253-279.
- Blachowicz, C.L.Z., Fisher, P., & Watts, S., (2005). *Integrated Vocabulary Instruction: Meeting the Needs of Diverse Learners in Grades K-5*. Naperville: learning point Associates.
- Carlisle, C. H., WU, J. X., & HEATH, T. J. (1995). Anatomy of the portal and hepatic veins of the dog: a basis for systematic evaluation of the liver by ultrasonography. *Veterinary Radiology & Ultrasound*, 36(3), PP. 227-233.
- Davoudi, M., & Yousefi, H. (2009). *English Vocabulary Made Simple*. Sabzevar, Iran: Ketabesefid.
- Ellis, N. (1997). Vocabulary acquisition: word structure, collocation, word-class and meaning.
- GU, P.Y. (2003). Vocabulary Learning in a Second Language: Person, Task, Context and Strategies. *TESL-EJ*, 7 (2), 1-25. Retrieved December 10, 2010 from <http://www-writing.berkeley.edu/TESL-EJ/ej26/a4.html>.
- Hatch, E., & Brown, C. (1995). *Vocabulary, semantics, and language education*, Cambridge: Cambridge University Press.
- Hudson, T. (2007). *Teaching second language reading*. Oxford: Oxford University Press.
- Ives, J. P., Bursuk, L. Z., & Ives, S. (1979). *Word identification techniques*. Rand McNally College Pub.
- Joshi, R. M., & Aaron, P. G. (2005). Spelling: Assessment and instructional recommendations. *Perspectives*, 13(3), 38-41.
- Kame'enui, E. J., & Baumann, J. F. (2004). Vocabulary: The plot of the reading story. *Vocabulary instruction: Research to practice*, PP. 3-12.

- Manyak, P.C., & Bauer, E.B. (2009). English vocabulary instruction for English learners. *The Reading Teacher*, 63(2), PP. 174–176.
- Martin-Chang, S.Y., & Gould, O.N. (2008). Revisiting print exposure: Exploring differential links to vocabulary, comprehension and reading rate. *Journal of Research in Reading*, 31, PP. 273–284.
- Mochizuki, M., & Aizawa, K. (2000). An affix acquisition order for EFL learners: An exploratory study. *System*, 28(2), PP. 291-304.
- Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nation, P. (1990). *Teaching and learning vocabulary*. New York: Newbury House.
- N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (122- 139). Cambridge, UK: Cambridge University Press.
- Paynter, D. E., Bodrova, E., & Doty, J. K. (2005). *For the love of words: Vocabulary instruction that works*. San Francisco: Jossey-Bass.
- Qian, D.D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, 52, PP. 513–536.
- Ricketts, J., Nation, K. & Bishop, D. (2007). Vocabulary is important for some, but not all reading skills. *Scientific Studies of Reading*, 11(3), PP. 235–257.
- Schmitt, N. (1997). Vocabulary learning strategies. *Vocabulary: Description, acquisition and pedagogy*, PP. 199-227.
- Wilkins, D. (1972). *Linguistics in Language Teaching*. Cambridge, MA: MIT Press.
- Wysocki, K., & Jenkins, J. R. (1987). Deriving word meanings through morphological generalization. *Reading Research Quarterly*, PP. 66-81.
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