## A STUDY ON THE IMPORTANCE OF MORPHOLOGY FOR ENGLISH LANGUAGE TEACHERS

Biçimbilimin İngilizce Öğretmenleri İçin Önemine Yönelik Bir Calısma

## Sevinç ERGENEKON EMİR

Dr., Gazi Faculty of Education, esevinc@gazi.edu.tr

#### Abstract

Morphology refers to the study of words, their internal structure and the mental processes that are involved in word formation. It is a fact that effective communication cannot take place in the absence of knowledge about words. Not only the application of syntactic rules but also morphological ones are essential for the delivery of intended messages. For this, the embellishment of English language teachers with morphological knowledge is crucial. Hence, the aim of this study is to introduce some morphological information believed to be necessary for English language teaching (ELT) teachers to do their profession more effectively.

Key words: Morphology, English teaching, English teachers Özet

Biçimbilimin çalışma alanı, kelimelerin içsel yapısı ve oluşumları sırasında gerçekleşen zihinsel süreçlerdir. Etkili iletişimin gerçekleşmesi sadece doğru söz dizimsel kuralların değil, biçim bilimsel kuralların da uygulanması ile gerçekleşebilir. Bu sebeple İngilizce öğretmenlerinin gerekli biçimbilimsel bilgiyle donatılmış olması gerektiği düşünülmektedir. Çalışmanın kapsamını İngilizce öğretmenlerinin dili daha etkin öğretebilmeleri için sahip olmaları gereken biçimbilimsel bilginin ortaya konması ve bu bilginin kendilerine sağlayacağı muhtemel katkılar oluşturmaktadır.

Anahtar kelimeler: Biçimbilim, İngilizce öğretimi, İngilizce öğretmenleri

### Introduction

It is obvious that to communicate adequately through a language, not only a command of grammar but also of vocabulary is essential. For this, Nation (2001) states vocabulary is a key part of any language-teaching program. Fromkin and Rodman (1988) asserts knowing a language means knowing the words of that language. When one knows a word, s/he knows both its meaning and form. To learn number of words without learning to construct sentences is of little value. Despite this, it cannot be accepted that vocabulary is less important than grammar. Tschirner (2004) suggests that

vocabulary size has been identified as one of the most important indicators of  $L_2$  proficiency. Anglin (1993) states that without some knowledge of vocabulary neither language production nor language comprehension would be possible. It is a fact that while without grammar some information can be conveyed, without vocabulary nothing can be transmitted. Vocabulary items do indeed contain more information than is carried by grammatical elements. Therefore, it can be claimed that the embellishment of foreign language teacher trainees with the findings of morphology is vital in order for them to facilitate the learning process of their future students.

## Morphology

Miller (1991) asserts that all languages have a vocabulary, a set of words that is the basis for making and understanding sentences. Arnoff and Fundeman (2005) state that morphology refers to the study of words, their internal structure and the mental process that are involved in word formation. Leong and Parkinson (1995) claim that it is the study of the hierarchical and relational other lexical items aspects of words and the operation on lexical items according to word formation rules to produce.

The term "word", according to Brown and Attordo (2000), is not a technical term of linguistics. By "word", usually any sequence of letters divided by blank spaces is meant. Hence, it can be claimed that in the below sentence, there are four words:

Ann has three dogs.

However, there are problems: to begin with "dogs" is made up of two linguistic units (/dog/ + /-z/). Furthermore, there are words that contain more than one "word" such as *take off*, *get on well with*, *fly off the handle*, which are called phrasal verbs and idioms. Hence, to avoid these problems, linguists have decided to use the word "morpheme" to indicate any unit of meaning, and "morph" to display a physical form representing some morpheme and "allomorph" to point out different morphs grouped together to represent the same morpheme.

## Morphemes, Morphs, Allomorphs

Katamba (1993) asserts that the word morpheme is used to refer to the smallest, indivisible units of semantic content or grammatical function which words are made up of and which cannot be decomposed into smaller meaningful or grammatical units.

Katamba also (1993) states that the correct analysis of words into morphemes requires the isolation of physical forms called morphs which are recurrent distinctive sound (phoneme) or sequence of sounds (phonemes representing some morpheme).

Katamba (1993) provides some sentences and the analysis of words in those sentences into morphemes via the detachment of the existing morphs:

```
a. I parked the car.
                                      e. She parked the car.
    b. We parked the car.
                                      f. She parks the car.
    c. I park the car.
                                      g. We park the car
    d. He parks the car.
                                      h. He parked the car.
The morphs are:
    Morph
                        Recurs in
    /ai/ 'I'
                        [a] and [c]
    /si/'she'
                        [e] and [f]
    /hi/ 'he'
                        [d] and [h]
    /ðə/ 'the'
                        in all the examples
    /ka/ 'car'
                        in all the examples
    /pa:rk/ 'park'
                         'park' is found in all the examples,
                        sometimes with an -s suffix and
                        sometimes on its own
    /t/ '-ed'
                        suffixed to park [b, e]
    /s/ '-s'
                        suffixed to park in [f]
```

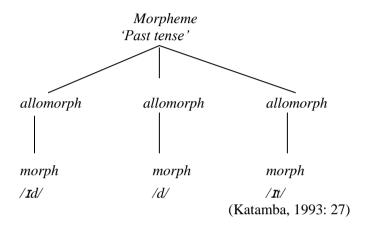
Katamba (1993:23)

It is sometimes observed that different morphs can represent the same morpheme and then they are called allomorphs. For example, the past tense of regular verbs in English which is spelled *-ed* is realized in speech in three various ways like /Id/, /d/ or /t/. It is, as suggested by Katamba (1993), due to the phonological properties of the last segment of the verb to which it is attached.

```
/id/ if the verb ends in /d/ or /t/
e.g. /mend/ ~ /mendid/
                                   /peint/ ~ /peintid/
                                   'paint'
      'mend'
                 'mended'
                                              'painted'
/d/ after a verb ending in any voiced sound except /d/
e.g. /kli:n/ ~ /kli:nd/
                                   /wei/ ~ /weid/
      'clean'
                 'cleaned'
                                   'weigh'
                                              'weighed'
/t/ after a verb ending in any voiceless consonant other than /t/
e.g. /pa:k/ ~ /pa:kt/
                                   /mis/
                                          ~ /mist/
      'park'
                                   'miss'
                                              'missed'
                 'parked'
                                         Katamba (1993:25)
```

As seen, past tense morpheme is realized in three ways which can be

represented in a diagram like the one seen below:



It can be claimed that the establishment of effective communication requires one to have knowledge not only about the grammatical rules of language s/he functions at but also about the words in the absence of which intended message cannot be conveyed even if syntactic rules are applied accurately. To learn vocabulary items effectively, the identification of every unit of semantic content used in the formation of the words under consideration is vital. The mentioned units are called morphemes which are not necessarily words by themselves as exemplified above. To figure out a morpheme accurately, one should first distinguish the physical form/s representing that morpheme, known as morphs. And then s/he should select the right allomorph/s of them. Otherwise, s/he may fail to transmit her/his message. Hence, the knowledge of morphemes, morphs and allomorphs are very crucial for language teachers. If they are not enhanced with that knowledge, they are unlikely to use vocabulary items appropriately. Thus, they might fail to express themselves in the foreign language which will result in either teaching erroneous language or teaching of it in teachers' L<sub>1</sub> as observed in many language teaching classes. That is why instructors at foreign language teaching departments, in ELT departments in our case, should give place to the identification of morphemes, in their course content.

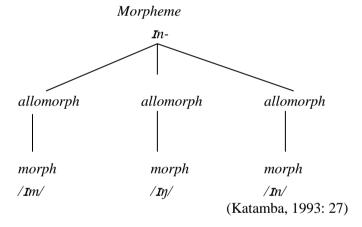
# **Identification of Morphemes**

Katamba (1993) states that the technique that can be utilized in the identification of morphemes is based on the notion of distribution. He suggests that a set of morphs could be classified as allomorphs of the same morpheme when they convey the same meaning or serve the same

grammatical function and not found in identical contexts. That is, when they are in complementary distribution. Hence, it could be concluded that the above illustrated three morphs /id/, /-d/ and /-t/ representing the English regular past tense morpheme are in complementary distribution. Thus, they are allomorphs of the same morpheme. Another example could be provided by the consideration of the negative morpheme in-:

- impossible [Impo Ds Ibl] / immovable [Imuvəbl]
- incomplete [Iŋkəmpli:t] / ingratitude [IŋgrætItjud]
- intolerable [In Dtlərəbl] / inactive [Inækt Iv] (Katamba, 1993: 27)

The isolated allomorphs could be schematized as seen below:



The selection of the allomorph to be used cannot be viewed as random. Considering the above cases, the rules observed can be given through the following statements:

- a. before a labial consonant like [p], [f], [b], [f], [m] [Im] is used.
- b. before the velar consonants like [k] and [g],  $[i\eta]$  should be selected
- c. before an alveolar consonant such as [t, d, z, s, n] or before a vowel like, [a], [e] /In/ is used.

Hence, it can be asserted that three allomorphs [Im], [In], [In] of the morpheme *in-* are in complementary distribution. In addition, it can also be inferred that the allomorph selected to stand for the morpheme in a particular context is one whose phonological properties are identical with those of sounds found in a neighbouring allomorph of some other

morpheme. That is, the choice of the allomorph is phonologically conditioned. Finally, when the same place of articulation of the two consonants - the alveolar consonant [n] in [In] occurs before alveolar consonants and the velar consonant [n] in [In] occurs before velar consonants - are considered, it can be claimed that spelling is not a sound guide to pronunciation.

However, sometimes the selection of allomorph might be for the presence of a particular grammatical element but not for some phonological factors. That is, in this case, the choice of allomorph is grammatically conditioned. For instance, in the below presented data, it is seen that the presence of the past tense morpheme has no effect on the selection of the allomorph that represents the verb itself. Yet, as observed in "b" and "c" when there are some certain verbs, the presence of the past tense morpheme necessitates the selection of a special allomorph of the verb:

<u>Present Tense</u>	<u>Past Tense</u>
a. walk/w <b>ɔ</b> :k/	walked /w <b>ɔ</b> :kt/
kiss /k <b>I</b> s/ grasp /gra:sp/	kissed /k <b>I</b> st/ grasped /gra:spt/
b. weep/wi:p/ sweep/swi:p/	wep-t /wept/ swep-t /swept/
c. shake/fe <b>Ik</b> /	shook/fuk/
take /teɪk/	<i>took /t <b>U</b>k/</i> (Katamba, 1993: 30)

In some other cases, the choice of a particular allomorph may be essential for the existence of a certain word. Then the selection is said to be lexically conditioned.

The normal distribution of the plural morpheme is seen below:

a. Allomorph /-ız/ is chosen when a noun ends in alveolar or

```
alveopalatal sibilant such as /s z \int 3t \int d3/: beaches fishes mazes /bi:t \int z/fi\int z/meiziz/
```

b. Allomorph /-s/ is selected if a noun ends in a voiceless consonant such as /p  $t \ k f \ \theta$ /:

```
cups maths leeks /k^ps/ /mæθs/ /li:ks/
```

c. Allomorph /-z/ is opted for if a noun ends in all vowels and the consonants /b d g m n η l r w j/:

```
bards mugs rooms
/ba:dz/ /m^gz/ /ru:mz/
keys shoes
/ki:z/ /fu:z/

(Katamba, 1993: 31).
```

However, it is sometimes observed that the above provided regular rule is not applied changing a singular noun into its plural form. The plural of 'ox' is not 'oxes' but 'oxen' despite the fact the expected plural allomorph is /ız/ such as in foxes /foksız/, and in boxes /boksız/. The choice of the allomorph -*en* here is for the presence of the specific noun "ox". That is the allomorph is lexically conditioned.

Finally, there are some morphemes whose allomorphs are neither phonologically or grammatically nor lexically conditioned. The mentioned morphemes are below:

```
Good - better
bad - worse
go - went
```

As seen, the given morphemes do not have even a single sound in common; they are phonetically unrelated. In such cases, the choice depends on suppletion.

Considering the information provided in this part it can be claimed that the significance of knowledge on the distribution of morphemes for language teachers is beyond question since the wrong use of them can hinder communication. Because of this, foreign language teachers should know which morphs represent which morphemes or various of which come together to correspond to the same morpheme.

It is obvious that knowing morphemes and their functions individually cannot always bring about their correct use. For instance, the past tense morpheme -ed which is always spelled in the same way is realized in three different ways in speech. If a teacher does not know the allomorph /td/ is selected when the verb ends in /d/ or /t/, while /d/ is chosen if the verb ends in any voiced sound except /d/, and /t/ is singled out as the verb ends in any voiceless consonant other than /t/, s/he cannot use them in her/his own speech according to these phonological rules and become a good model for her/his students. This obviously leads the students to the random use of allomorphs. As a result, they experience difficulties in interactions with others who do not use the allomorphs so randomly.

Regardless of the fact that a teacher knows which allomorphs to use for the phonological properties of the last segment of the verb, s/he may fail in her/his teaching if s/he is not embellished with the information that there are some certain verbs requiring the selection of special allomorphs in past expressions; that is, grammatical conditioning of allomorphs, like *give - gave* and *win -won*, s/he cannot avoid her students making mistakes in the selection of allomorphs.

Finally, even if s/he has the awareness that the correct choice of allophones depends on phonological or grammatical conditioning, s/he might again have difficulties in some teaching situations when the selection of allomorph is determined by the existence of a certain word. For instance, the allomorphs of the plural morpheme -s are /tz/, /s/ and /-z/, which are chosen according to phonological above mentioned rules, none of them might be correct to be used if the considered nouns are such as "child" or "ox" whose plural form are 'children' and 'oxen'.

Hence, instructors at ELT departments should have all the mentioned points related to morphemes in their content lists so that their trainees can gain insight into morphemes which are the building blocks of words' meanings.

## Free and Bound Forms of Morphs

A free morph is called free since it occurs independently from other words or morphemes. It is a simple word consisting of a single morpheme and necessarily one morph. Hudson (2000) asserts that it has a degree of independence from other forms which provides it the status of a word. For instance, a word like "apple" can be preceded by words of various types including pronouns such as my, her, your, determiners like the, this, that and adjectives such as delicious, expensive. In writing the position of a morph or combination of morphs as a word is shown by the provision of spaces at the beginning and end of the word.

It can be claimed that when one is exposed to either spoken or written text, s/he first is to recognize the morphs. And s/he groups them with similar form as morphemes, identifying the different forms as their allomorphs: Hudson (2000) provides the following examples to clarify the mentioned relation; morphs are grouped into morphemes as allomorphs of a morpheme:

#### Morphs:

/ə/ 'indefinite article', /æn/ 'indefinite article', /s/ 'noun plural suffix', /z/ 'noun plural suffix', /Iz/, 'noun plural suffix', /ɛks It/ 'exit', /ɛgz It/ 'exit'.

### Morphemes:

/ə/, /œn/ 'indefinite article' (/ə/ and /œ/ are allomorphs)

/Iz/, /s/, /z/ 'noun plural suffix' (/Iz/, /s/, /z/ are allomorphs)

/ɛks It/, /ɛgz It/ "exit" (Verb (/ɛks It/, /ɛgz It/ are allomorphs)

(Hudson, 2000: 58)

On the other hand, a bound morph is a form which is always attached to another morpheme within a word. It is considered to be combined to the morphs with which it regularly cooccurs. For instance the prefix re- is almost always attached to a verb, as in rewrite, recycle, and the prefix un- to an adjective, as in untidy, unsuitable. Another example could be provided by the consideration of both the suffix -ing which is always connected with a verb such as seen in going or watching and the suffix -s whose attachment to a singular noun makes it a plural one as in cakes, oranges. As a last example the stem /disays/ decis - of decisive can be considered. It is reached by the attachment of the suffix -ive and the stem slep/slep/ of slept resulted in the combination of the past tense suffix -t with it.

Without the identification of morphs and the determination of their positions in sentences, one cannot be expected to group them as morphemes which are minimal units of meaning or grammatical function. Hence, s/he can neither express herself/himself accurately and appropriately nor understand the others around. Due to this, teacher trainees should have mastery on them so that they can do their profession efficiently in the future.

### **Lexical and Grammatical Morphemes**

Lexical morphemes, which always have a stressed syllable, are those whose occurrance is determined by what speakers talk about. In addition, compared to grammatical morphemes, they are very infrequent and finally, they are the members of large sets, regularly getting new members, basically nouns, verbs, adjectives, adverbs and so - called derivational affixes.

The affixal forms of lexical morphemes are called derivational affixes which could be either prefixes, attached to the initial position of words, or suffixes, always attached to the end of words. They are frequently utilized to form new words. The presence of one of derivational affixes may cause a major grammatical change via moving the base from one word class into another as can be observed in the case of derivational suffix *-less*. It can turn a noun into an adjective. In some other cases, however, the change caused by a derivational suffix might be viewed minor when it merely shifts a base to a different sub-class within the same broader - class

as in the following:

pig ~ pig - let friend - ship book ~ book - let leader - ship

As seen, the suffix -let is applied to nouns to form other nouns meaning something small and -ship is used to change a concrete noun into an abstract one.

It can be claimed that the significance of knowledge on derivational affixes for teacher trainees of a foreign language is beyond doubt. It is due to some facts. Firstly, by the attachment of them to some bases, it is possible to modify the meaning of these bases without changing their category as in polite / im-polite, legal / il-legal or do / un-do, etc. Secondly, they can cause a change in the grammatical class of a base as well as in meaning as in pure (Adj) - purely (Adv) - purify (V), modern (Adj) - modernity (N) or tact (N) tactful (Adj). It is beyond question that having awareness in these two facts can enable teachers to help their students to a great extent to enlarge their vocabulary by making right guesses about the meaning of unknown words. Thirdly, the attachment of derivational affixes to words may cause a shift in the grammatical sub-class of a word as in neighbour (N) - neighbourhood (N), king (N) kingdom (N). Finally, it is a fact that one cannot confidently produce or predict new uses of the derivational affixes. Just for the fact that the derivational affix -tion can be attached to a verb to change it into a noun or -ify is used to change an adjective into a verb, one cannot produce words like \*activation from activate or \*passify from passive. This is for the characteristic of non-productivity of derivational affixes, with which teacher trainees should be embellished so that they can prevent their future students making such mistakes and can convince them into the use of dictionaries in language learning process.

However, grammatical morphemes, which lack stressed syllables, are the ones whose presence is obligated by the grammar of the language. Due to this, they are observed to express abstract meanings such as tense of verbs, determiners preceding nouns and clause conjunctions like "if", "because", "when" etc. Furthermore, in contrast to lexical morphemes, they are frequent. Finally, they are the members of sets which do not accept new members frequently involving pronouns, determiners, prepositions, and affixes expressing verb tense and noun plurality.

The affixal forms of grammatical morphemes are known as inflectional affixes, which are always suffixes that can never stand by themselves. That is, they are always bound to some other morphemes. They never change the syntactic category of the words or morphemes to which they are attached. The occurrance of some of them can be observed in the

### below sentences:

- a. I sail the ocean blue.
- b. He sails the ocean blue.
- c. John sailed the ocean blue.
- d. John has sailed the ocean blue.
- e. John is sailing the ocean blue.

(Fromkin and Rodman (1988: 142).

In sentence 'b' the inflectional suffix '-s' in the end of the verb is an agreement marker signalling that the subject of the verb is "third - person", is singular and that the used verb is in the "present tense." However, it does not convey any "lexical meaning". In sentences from "c" to "e" the suffix "-ed", "-ing" endings are morphemes required by the syntactic rules of the language to signify "tense" or "aspect".

There are some other inflectional endings in English. For instance, the plurality of a countable noun is usually realized by a plural suffix attached to the singular noun as seen in car/cars, telephone / telephone and so on. Another example of them could be given by the consideration of the comparative suffix of adjectives, which is "-er", as in slower, and faster. As a last example the past participle suffix "-n" can be provided such as seen in "written" and "taken".

Hudson (2000) states that English language has typically eight inflectional affixes which are all suffixes:

- a. /z/ s, the plural suffix of nouns, as in pigs and cows.
- b. /z/-'s, the possessive suffix, ordinarily of nouns, as in Jackson's, New York's, but in fact suffixable to whatever word ends the possessor or phrase, as in the person we visited's house and the person I thought of's picture.
- c. /z/-s, the present tense 3rd person singular suffix of verbs, as in walks and runs.
- d. /d/ -ed, the past tense suffix of verbs, as in arrived and waited.
- e. /iŋ/-ing, the present participle suffix of verbs, as in walking and running.
- f. /ər/ -er, the comparative suffix of adjectives, as in quicker and earlier (This -er should not be equated with the -er which forms 'agents' of verbs, such as finder and doer; the latter is a derivational suffix.)
- g. /əst/ -est, the superlative suffix of adjectives, as in quickest and earliest.

h. /n/ -n, the past participle suffix of some verbs, as in broken and eaten.

(Hudson, 2000:64)

It is clearly seen how all of these suffixes except for the last one meet the three characteristics of inflectional affixes: They do not change the part of speech of the words they are attached to, are very productive and are in the final positions of words. However, the past participle suffix /n/-n is not productive; it is not attached to new verbs but to the present ones to form their past participle.

In the discussion of derivational morphology, it was asserted that knowing the meaning of the distinct morphemes may not always reveal the meaning of complex words.

The mentioned problem, however, is not true of inflectional morphology. For instance, if one knows the meaning of the word *psychiatrists* s/he can also grasp the meaning of the plural form *psychiatrists* or if s/he knows the meaning of the verb *synthesize*, s/he can easily get its present, progressive or past forms as in *synthesizes*, *synthesizing* and *synthesized* just for the use of related inflectional suffixes.

Due to this fact, it can be claimed that knowledge on such affixes is very useful for future teachers both in vocabulary and grammar teaching.

To increase the contributions of the information related to inflectional affixes to future English teachers, awareness should be raised in them about some points so that they can teach better. First, because phonologically stable affixes are found easier to learn than the ones which have several forms, language teachers should start to raise awareness in the use of the easier ones. For example, before 3rd person singular, -s which have three various forms being /s/, /z/ and /əz/, they should draw their attention to the suffix -ing /in/ which is phonologically fixed. Second, affixes having clear semantic function such as plurals or possessives should be taught before the ones having complicated function such as voice or aspect. Finally, inflections are attached to action verbs and concrete nouns but not to state verbs and abstract nouns.

#### Conclusion

Because teaching a foreign language efficiently requires one not only to function in it but also to know about it, it is vital for teacher trainees of EFL to equip themselves with knowledge on the nature of language they will teach.

There have been many studies about the importance of vocabulary in

language learning. Vermeer (2001) and Zimmerman (2005) state that there is a strong correlation between the individual's vocabulary size and his/her general language proficiency. In another study, Read (2004) puts forward that foreign language learners are typically aware of the extent to which limitations in their vocabulary knowledge hinder their ability to communicate effectively in the target language. This is for the fact that lexical items carry the basic meanings they would like to express and comprehend.

It is a fact that morphological knowledge is a potential strategy for vocabulary learning. Because of this, it is the focus of lots of studies. For instance, Anglin (1993) found that students could analyze the morphological structure of complex words to understand their meanings. Morin (2003) also proposed the strategy of using morphological knowledge to infer word meanings and the need to develop morphological awareness in the target language. Finally, Chang et. al (2005) define morphological awareness as the awareness of and access to the meaning and structure of morphemes in relation to words.

Considering all the information provided in this study, it can easily be claimed that the significance of morphological knowledge for language teachers is beyond doubts. Thus, to increase the contribution of this knowledge to future English teachers, awareness should be raised in them especially about some points like morphemes, identification and types of morphemes. By this way, teacher trainees can have the ability to teach English much more effectively in the future.

#### REFERENCES

ANGLIN, J. M., MILLER, G. A. & WAKEFIELD, P. C. (1993). Vocabulary Development: A Morphological Analysis. *Monographs of The Society for Research in Child Development, Vocabulary Development: A Morphological Analysis*, 58(10), 1-186.

ARNOFF, M. & FUDEMAN, K. (2005). What is Morphology? Malden: Blackwell. BROWN, Steven and Salvatore ATTARDO. (2000). Understanding Language Structure, Interaction, and Variation: An Introduction to Applied Linguistics for Non-specialists. USA: The University of Michigan Press.

CHANG, C. M., WAGNER, R. K., MUSE, A., W.-Y., B., & CHOW, H. S. (2005). The Role of Morphological Awareness in Children's Vocabulary Acquisition in English. *Applied Psycholinguistics*, 26, 415–435.

FROMKIN, Victoria and Robert RODMAN. (1988). *An Introduction to Language*. USA: Sounders College Publishing.

HUDSON, Grover. (2000). Essential Introductory Linguistics. USA. Blackwell Publishers Inc.

KATAMBA, Francis. (1993). *Modern Linguistics: Morhopology*. London: MacMillian Press LTD.

LEONG, C-K. & PARKINSON (1995). Processing of English Morphological Structure by Poor Readers. Netherlands Kluwer Academic Publishers.

MILLER, G. A. (1991). *The Science of Words*. New York: Scientific American Library.

MORIN, R. (2003). Derivational Morphological Analysis as a Strategy of Vocabulary Acquisition in Spanish. *Journal of the Modern Language*, 87, 200-221 NATION., I. S. P. (2001). *Learning Vocabulary in Another Language*. Cambridge; New York: Cambridge University Press.

READ, J. (2004). Research in Teaching Vocabulary. *Annual Review of Applied Linguistics*, 24, 146-161.

TSCHIRNER, E. (2004). Breadth of Vocabulary and Advanced English Study: an Empirical Investigation. *Electronic Journal of Foreign Language Teaching*, 1 (1), 27-39.

VERMEER, A. (2001). Breadth and Depth of Vocabulary in Relation to  $L_1/L_2$  Acquisition and Frequency of Input. *Applied Psycholinguistics*, 22(2), 217-234.

ZIMMERMAN, K. (2005). Newly Placed Versus Continuing Students: Comparing Vocabulary Size. *TESL Reporter*, *38*(1), 52 - 60.