

## THE EFFECT OF MORPHEMIC ANALYSIS INSTRUCTION ON ESL SECONDARY SCHOOL STUDENTS' VOCABULARY DEVELOPMENT

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### Abstract

The aim of this study is to investigate the effect of explicit teaching of morphemic analysis on vocabulary development among ESL low proficiency secondary school students. As the research states that morphology knowledge is vital for decoding complex words, an increase in vocabulary learning was predicted. Learners' morphology knowledge in this study was assessed based on analytic word formation after the morphemic analysis intervention. The Morpheme Identification Test adapted from Carlisle (2000) was employed to measure the students' ability to decode morphemic units in English complex words. The paired sample t-test was employed to report the results of the study. The result showed a higher score on the posttest and students have better morphemic decoding skills after the morphemic analysis intervention. Thus, the study points to the benefits of morphemic analysis instruction on students' vocabulary development.

### Background of the Study

Knowledge of word part meaning or morphemic analysis can be a powerful tool for students to acquire vocabulary (Kieffer & Lesaux, 2007). Ferguson (2006) states that students can understand a large number of the complex words they encounter in prints if they know how to decode the complex words into smaller morphemic units. Kuo and Anderson (2006) suggest that when learners are provided with morphology knowledge (how words are formed through prefixes, suffixes, and roots) have larger vocabulary repertoire and able to comprehend new words in their readings.

According to Ferguson (2006), root words and affixes are part of morphemic analysis and can be used to help students make predictions about words' meanings. She asserts that morphemic analysis skill is essential because secondary school students are faced with more difficult texts and complex vocabulary; they need strategies to help them decode and look at word part meanings for better understanding of text. This finding is also supported by Ebbers (2009) that secondary school texts contain many of complex words and learners' abilities to analyze and decode these words are essential for their comprehension.

### Statement of the Problem

According to McBride-Chang, Wagner, Muse and Chow (2005), learners develop awareness of morphology throughout their childhood and into their adolescence and they generally understand how morphemes (such as inflectional and derivational) are attached to words. However, according to Feldman (1993), it is important to note that knowledge of inflectional morphology is acquired before knowledge of derivational morphology. This is because "the number of inflectional affixes is severely limited relative to the number of derivational affixes" (p. 70). As a result, students can be at very different levels in their awareness of inflectional and derivational morphology.

Comprehension of complex words is a main problem among struggling learners in the secondary schools because these students lack the ability to analyze word parts (morphemic

analysis) to decipher the word meaning (Ferguson, 2006). In the local setting, most of secondary school students are still unable to acquire or even comprehend the language even after eleven years of learning the language at the primary and secondary levels (Jalaluddin, Mat Awal & Abu Bakar, 2008). A study conducted among secondary school students shows that the most obvious weaknesses of the students lay in the area of morphology. Students face problems in the areas of prefixes and suffixes where they represent among the 60% of the total grammar mistakes in language committed by the students (Jalaluddin, Mat Awal & Abu Bakar, 2008). Students face problems with affixes such as plural inflection: *-s*, *-es* and *-ie*; adverbs: *-ly* and superlatives: *-er* and *-est* (Jalaluddin, Mat Awal & Abu Bakar, 2008). Secondly, spelling errors occur due to inappropriate use of derivations, for examples, base (e.g., *noise* and *breeze*), and derived (e.g., *noisy* and *breezy*) (Jalaluddin et al., 2008). As a result, the lack of morphemic analysis strategy among the local ESL learners contributes to the weaknesses and inability to acquire English language (Jalaluddin et al., 2008).

According to Ferguson (2006) as about 30 root words, prefixes and suffixes provide the basis for more than 14,000 commonly used words in the English language, it is imperative to consider the importance of morphemic analysis strategy in vocabulary learning, particularly in the ESL context (Al Farsi, 2008). According to Al Farsi (2008) too, students are able to decode words when morphemes are taught explicitly; and a planned morphemic analysis intervention for struggling learners can improve vocabulary learning and reading comprehension (Ferguson, 2006). In addition, Talerico's study in 2007 proved that through morphemic analysis instruction students made greater gain morphology knowledge and she suggests the method for vocabulary development.

## **Objective of the Study**

The aim of the present study was to investigate the effect of explicit teaching of morphemic analysis on vocabulary learning among ESL low proficiency secondary school students. Learners' morphology knowledge in this study was assessed based on their ability to identify the smallest units in the grammar of the English language (analytic word formation). Analytic word formation refers to breaking words down into its meaningful components (Arnoff & Fudeman, 2005).

This study is an attempt at empirically investigating the importance of morphemic analysis instruction to improve ESL learners' vocabulary learning in Malaysia. The study can be of great importance for students, teachers, scholars, and syllabus designers so that more improved materials and methods for teaching and learning morphemes will be developed and implemented.

To achieve the objective of the study, the research question was formed:  
Is there a significant effect of morphemic analysis instruction on ESL secondary school students' vocabulary?

## **Literature Review**

### **Morphemic Awareness**

Morphemic Awareness in this study reflects the morphological structure of a target language and is largely formed through three processes: inflection, derivation, and compounding (Zhang & Koda, 2013). Inflected words are formed by a combination of a root and an affix and function grammatically. In contrast, derived words are formed by adding an affix that changes the meaning and the grammatical category of the root to which the affix is attached. Compound words are formed by linking root morphemes. However, compounding morphology is not the focus of this study. This is because compounding

morpheme is not tested in the Morpheme Identification Test. Learners are able to extend their vocabulary knowledge by mixing and matching word stems, prefixes and suffixes (Saif, 2011) and decode the meanings of unknown words (Wysocki and Jenkins, 1987).

### **Inflectional and Derivational Morphemes**

There are eight inflectional affixes in English, and these are all suffixes. English inflectional suffixes serve a variety of grammatical functions when added to specific types of words. The function of inflection is to indicate grammatical relationship between words in a sentence, e.g., *the cow eats grass / cows eat grass*. Inflectional affixes appear to be stable in function and meaning (Saif, 2011). Awareness of inflectional morphology is a comparatively early acquired competence (Zhang & Koda, 2013). However, individual differences with inflectional morphology exist, especially with inflectional suffixes *-s*, *-ed*, *-ing*, *-er*, and *-est* (Windsor, Scott, & Street, 2000).

Meanwhile, derivational is a process by which new words are formed through the mechanics of affixation to a root-form already in existence. It is one of the common methods of word formation, for example, the root *nation* is exploited to produce *national*, *nationalist*, *nationalization*, etc (Saif, 2011). There are a large number of derivational affixes in English (such as *-ness*, *-ly*, *-al*, *-able*, *-er*). The understanding of derivational morphemes emerges later and continues to develop over a longer period of time, with the more advanced derivational awareness possibly not fully developed until early adulthood (Carlisle & Fleming, 2003). This later development is because of the large number of derivational affixes and the process involves phonological or/and orthographic changes (e.g., *decide* and *decision*) which leads to change of the meaning and grammatical category (Zhang & Koda, 2013).

According to Novak (2011), morphemic analysis strategy is crucial in learning English. Firstly, as Saif (2011) asserts, ESL learners, especially the low proficiency ones, need exposure on prefixes and suffixes so that they can use words effectively and productively to attain mastery and command of the language. Secondly, learners have problems in recognizing and producing inflectional and derivational morphemes in writing or speech; thus they have to be facilitated to recognize, perceive, produce and use morphemes properly and appropriately to improve their language use. Thirdly, the competence and proficiency of the students of the current study are less than required because of their poor background knowledge of the language. Thus, “when it comes to learning English language, a little knowledge of root words, prefixes and suffixes goes a long way” (Kieffer & Lesaux, 2007 p. 1).

### **Morphemic Analysis Instruction on Vocabulary**

The meanings of many words can be inferred through morphemic analysis and students above upper primary are likely to benefit from such instruction (Baumann, Edwards, Tereshinski, KameŌenui & Olejnik, 2002).

According to Novak (2011), primary and secondary research on morphemic analysis instructions reveals that they have effectively increase students’ on vocabulary achievement. The method of implementation of the morphemic analysis instruction in this study was derived from one suggestion from such research, Talerico (2007). This study was based on Talerico’s as it was one of most comprehensive studies done on morphemic analysis strategy.

## Methodology

### Design

This study was a quasi-experimental design with one group pretest and posttest (Table 1).

Table 1 One group pretest and posttest

Pretest	Treatment	Posttest
O	X	O

According to Weiner (2007), this design provides a more structured research, with a careful measurement done before and after conducting the treatment. This design has minimal internal validity, controlling only for selection of subject and experimental mortality. It also has no external validity.

### Participants

The study was carried out on 35 Malaysian secondary school students, from one existing class. The number of samples is deemed appropriate for this study as Fraenkel and Wallen (2009) recommend a minimum of 30 individuals for experimental studies.

The researcher selected an intact group that was homogeneous in terms of age (16 years old), gender (male) and proficiency (low proficiency) so that the effect of confounding variables is minimized. The participants were also chosen as they have basic reading skills and their secondary school texts are dense with morphologically complex words (Ebbbers, 2008). Moreover, low proficiency learners can make use of morphological knowledge to infer the meanings of words (Carlisle & Stone, 2005; Ferguson, 2006; Singson et al., 2000).

### Instrumentation

#### *Morpheme Identification Test*

The Morpheme Identification Test adapted from Carlisle (2000) (Appendix 1) consisting of 20 items was administered to determine participants' ability to analyze and break down complex words into smaller meanings (e.g. *running* = *run* + *ing*) in the pretest and posttest. For each item, participants were asked to write the morphemes (smallest units in words) for each of the given words, in the order that they appear in the words.

The test was employed to measure the students' ability to reflect and manipulate morphemic units in English (analytic ability). This test was of interest to the researcher as it encompasses the analytic aspect of word formation rules and also the results are easy to score and interpret (Alsalamah, 2011). Nonetheless, the researcher made some modifications on the tests items to make it more appropriate for the participants' age and proficiency level. Likewise, to minimize participants' fatigue and anxiety, no time limit was set in the pre and post tests and the participants were asked to answer on their own pace.

To ensure the reliability of the test, the Cronbach alpha reliability indices were calculated for the Morpheme Identification Test used in this study. The alpha index for the test was high, 0.83 (Table 1).

Table 1 Cronbach's Alpha for Morpheme Identification Test (n=35)

Instrument	No of Items	Alpha
Morpheme Identification Test	20	0.83

According to Sekaran & Bougie (2010), a test that has an alpha index more than 0.70 is regarded to have high reliability standard and is good for classroom tests.

### Procedure

There were a few procedures followed to achieve the objective of the study. First, before administrating the tests to the students, the researcher chose an intact group (an existing classroom) to be the participants of the study. Second, the pretest was held in a predetermined location.

After the pretest, a morphemic analysis instruction was conducted for the intact group. The morphemic analysis instruction was conducted for eight days on inflectional and derivational morphemes. The instruction consisted of eight lessons to give exposure on affixes and root words of selected complex words from the Form Four Curriculum Specifications (2003). Morphemic analysis instruction included an affix component that focused on grouping prefixes, suffixes and root words, introducing their meanings and then analyzing the words by their morphemes. The activity was done in a reading context and followed by written exercises to students to break down the words and decode their meanings.

After the intervention, a posttest was conducted to measure the effectiveness of morphemic vocabulary strategy implementation on students' vocabulary development.

### Data Analysis

In order to analyze the data gathered from the pretest and posttest, the researcher employed paired-sample t-test to find any possible significant effect of morphemic analysis instruction on students' vocabulary.

### Results

The results revealed that there was quite significant difference between pretest and posttest results of the participants in the Morpheme Identification Test after the intervention ( $t(33) = 0.2632, p < .05$ ). The result of the t-test is summarized in Table 2.

Table 2 Paired sample t-test results for Morpheme Identification Test

Test	N	Mean	SD	T	Df	Sig.
Pretest	35	0.21	0.47			
Posttest	35	0.45	0.50	2.2632	33	0.112
p < .05						

### Discussion

The results of this study indicated that the learners' performed poorly in the Morpheme Identification Test during the pretest. However, after the intervention of morphemic analysis instruction the participants performed relatively significant; thus showed

that these students were able to analyze the complex words by their morphemes. This result is in congruent with the findings of Talerico (2007) that learners were to benefit from the morphemic analysis instruction and they were able to be analytical.

The findings of this study showed that students in this study were able to be moderately analytical with the morphemes. The results of this study can be seen from many aspects: it was carried out within a short span of intervention prior to the assessment; and the tests may have moderately suit the participants of this study.

The relatively significant performance of these students in analyzing complex words implies that morphemic analysis strategy should be considered when implementing a vocabulary instruction. As mentioned by Khodadoust et al. (2013), the ability to indicate morpheme identification knowledge (analytic aspect) is important in building students' morphological knowledge. According to McBride-Chang et al. (2005), analytic knowledge is crucial because it fosters students' vocabulary acquisition. According to Wysocki and Jenkins (1987), morphemic awareness does facilitate vocabulary building when students are given direct instructions on it (McBride-Chang et al., 2005).

### **Recommendations for Further Study**

The researcher recommends other researchers to reproduce this study after a longer and more comprehensive intervention programme is established. This is to highlight the importance of morphology as a metalinguistic tool for language success (Al Farsi, 2008).

### **Conclusion**

The current study examined the effect of morphemic analysis instruction on ESL secondary school students' vocabulary learning. Learners' ability to analyze inflectional and derivational morphemes (analytic aspect) suggests that there is a need for explicit teaching of morphology units (Al Farsi, 2008). According to Novak (2011) and Talerico (2007), morphemic analysis is crucial for learners as it is related to various language skills such as, spelling, reading comprehension and vocabulary.

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## Appendix 1

### The Morpheme Identification Test

*Identify the smallest units in words (morphemes) for each of the following words, in the order that they appear in the word.*

*Example:* running = run + ing +         

1. Inputs =          +          +
2. Components =          +          +
3. Ensure =          +          +
4. Within =          +          +
5. Notable =          +          +
6. Another =          +          +
7. Undeniable =          +          +
8. Approving =          +          +
9. Personally =          +          +
10. Demotivation =          +          +
11. Uncomfortable =          +          +
12. Education =          +          +
13. Tirelessly =          +          +
14. Surprising =          +          +
15. Bottling =          +          +
16. Discussion =          +          +
17. Famous =          +          +
18. Courageous =          +          +
19. Decision =          +          +
20. Popularity =          +          +