Morphemic Analysis Awareness among ESL Low Proficiency Secondary School Students: A Strategy for Assessing Vocabulary Development

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ABSTRACT

The aim of this study was to investigate morphemic analysis awareness among low proficiency secondary school students in an ESL context. Learners’ morphemic analysis awareness in this study was assessed based on analytic and synthetic aspects of morphemic analysis tasks. The Morphemic Sensitivity Test, with its two subtests: Morphemic Identification Test and Morphemic Structural Test adapted from Gomez (2009), was used to measure the students’ ability to reflect and manipulate morphemic units in English. Paired sample t-test was employed to report the results of the study. Results indicated that the students have limited awareness in both analytic and synthetic aspects of morphemic analysis tasks. In fact, the students performed poorly on the synthetic task compared to the analytical task. This finding implicates that there is a need for explicit teaching of morphology units to create morphemic analysis awareness among Malaysian secondary school students. The study proposes that morphemic analysis awareness can necessitate students’ vocabulary development because it can help them to unlock the meaning of new and complex words by analyzing the meaningful parts within the words.

1.0 BACKGROUND OF THE STUDY

Numerous recent studies have attempted to explain that vocabulary plays a crucial role in learning or acquiring a language (Asgari & Mustapha, 2011; Gu, 2003; Letchumanan & Tan, 2011; Kitchakarn & Choocheepwattana, 2012). Letchumanan and Tan (2011) as well as Kitchakarn and & Choocheepwattana (2012) demonstrate that the delay in vocabulary acquisition imposes a handicap on learners’ language development and their effective communication. Their research suggests that there is a strong relationship between vocabulary and students’ ability to construct meaning; and without vocabulary, students cannot string together words to form sentences. Xu (2010) argue that students need a sound vocabulary programme in order to read and write successfully. This is especially true for ESL classrooms where learners have limited vocabularies. Xu reports that students’ with limited vocabularies face obstacles to understand new ideas and concepts compared to students with large
vocabularies. Thus, in the case of learning vocabulary in the second language, Asgari & Mustapha (2011) argue that students need to be educated with word learning strategies because they have a strong association with vocabulary.

Many researchers argue that one of the reasons for the lack of vocabulary among ESL learners is that they have a poor understanding of English language especially in the linguistic aspect (Jalaludin et al., 2008; Kaweera, 2013; Chen et al., 2008). It has been demonstrated that there are three main linguistic aspects in a language: the morphological level (morpheme), the lexical level (word order) and the syntactic level (sentence structure) (Kaweera, 2013).

This study looks at the morphological level that is important for learners to build words. Chen et al. (2008) ascertain that when students make errors at word-level, their incompetence in the language will be reflected through their vocabulary. Akande (2005) and Jalaludin et al. (2008) found that ESL learners make word-level errors because they misused and overgeneralized morphemes such as prefixes and suffixes when adding to the base or root words in the English language. These errors are serious because students’ can neither understand the meaning of a complex word nor form a complex word because of their incompetence in morphology knowledge.

1.1 Rationale of the study

Morphemic analysis (knowledge of word part meaning) is a powerful word-learning tool for students to acquire vocabulary (Kieffer & Lesaux, 2007). Students can understand a large number of complex words if they are able to decode them into smaller morphemic units (Ferguson, 2006). According to her, root words and affixes are part of morphemic analysis and students can make predictions about word meanings when they have the awareness of morphemic analysis.

Wang et al. (2009) claim that prefixes, suffixes and base words tell learners something about word meaning, which in turn supports the understanding of the word. Therefore, knowing the meaning of these morphemes makes it possible for learners to infer word meaning. Carlisle and Stone (2005) hold the view that when learners are taught about the parts of words they will understand that some words consist of two or more meaningful morphemes; and eventually with that understanding they are able to derive the meanings or build new words by examining and analyzing those morphemes. As Fox (2010) highlights, complex words are far more prevalent in upper primary and secondary books than in books for elementary learners; and when word length increases learners must look beyond letter-sound awareness to identify the meaningful units in complex words.

1.3 Statement of the Problem

Ferguson (2006) shows how research into vocabulary learning was mainly concerned with the comprehension of word meaning. Her research shows that comprehension of complex words is a main problem among struggling learners in secondary schools because these students lack the ability to analyze word parts to decode the word meanings. Muse and Chow (2005) explain that students develop awareness of morphology throughout their childhood and adolescence; and they generally understand how morphemes such as inflectional (suffixes) and derivational (prefixes and suffixes) are attached to words. However, students can be at very different levels in their awareness of inflectional and derivational morphology. Feldman (1993) reveals that this problem arises because knowledge of inflectional morphology is acquired before derivational morphology and the number of inflectional affixes is rather limited compared to the number of derivational affixes. A study by White et al. (1989) also confirmed Feldman’s finding that their samples had better understanding on inflectional suffixes.
(e.g., -s, -ed) than derivational suffix (e.g., -able, -ment) and prefix knowledge. A more recent study by Windsor, Scott and Street (2000) prove that less proficient English language learners; and students with poor knowledge of morphology particularly manifest difficulty with inflectional suffixes -s, -ed, -ing, -er, and -est.

There is a consensus among local researchers such as Jalaludin et al. (2008), Muhamad et al. (2013) as well as Rizan et al. (2012) that Malaysian students generally make morphology-related errors (affixes) especially in inflections: verb (tense), noun (plural/possessive); and in derivations: noun and adjective. According to them, prefixes and suffixes represent 60% of the total grammar mistakes in vocabulary committed by the students. Their research revealed that most students lacked knowledge in suffixes such as -s, -es and –ies and they made errors due to inaccurate use of derivations: immoral and breezable in spite of immoral and breezy. Their findings also demonstrated that the number of errors made by low proficiency learners outnumbered that of the high proficiency learners.

In the experience of the researcher as an English teacher in a secondary school for more than ten years, she found that secondary school students mainly make errors similar to the findings mentioned by those local researchers; which indicate that there are universal types of morphology-related errors and that the patterns of mistakes are rather common. Students are in a state of confusion in using the morpheme ed as a mark of past tense and as a mark of passive form. Morphologically, they do not use the morpheme -s correctly and do not differentiate between -s as plural mark and -s as a 3rd singular mark. Sometimes, they generalize the idea of adding -s in both cases; as a plural mark and a 3rd singular mark. As Akande (2005) and Hamdi (2012) observe, students do not always have a good knowledge of these rules; and such errors are a result of their under-developed linguistic awareness. Therefore, it is the experience of working with such students that has driven this research. On top of that, as Kaweera (2013) reminds, if this problem is not dealt with care, it would be an ongoing concern in the body of research knowledge on ESL learners.

This paper therefore, intends to further investigate the previous mentioned findings through an examination of ESL secondary school students’ knowledge on prefixes and suffixes; and then to shine new light on seeking a remedy for the problems through morphemic analysis strategy. Morphemic analysis strategy is deemed important because with the strategy students are not only able to induce meaning of words but also form new words (Edwards, Font, Baumann & Boland, 2004).

1.4 Objective of the Study

The major objective of this study is to investigate low proficiency secondary school students’ knowledge in prefixes and suffixes through two aspects of morphemic analysis awareness: analytic and synthetic. The students’ performance is assessed based on their morphology knowledge to identify the smallest units in the grammar of the language (analytic aspect), and to decompose words for accessing their meaning (synthetic aspect) in two tests namely, morphemic identification test and morphemic structural test. Analyzing refers to breaking words down into its meaningful components meanwhile synthesizing refers to bringing morphemes together to form words (Arnoff & Fudeman, 2005).

To achieve the objective of the study, two research questions are formed:

1. Is there any significant difference between the students’ performance on morphemic identification test and morphemic structural test?
2. Is there a significant performance of the students on the analytic aspect than synthetic aspect

The hypotheses of the study are:

H1: There is a significant difference between the students’ performance on morphemic identification test and morphemic structural test
H1: ESL low proficiency students’ performance on analytic aspect is significantly higher than synthetic aspect

1.5 Significance of the Study

This study is an attempt at empirically investigating the importance of morphemic analysis awareness to develop learners’ vocabulary in the ESL context by improving their knowledge on morphology. The study can be of great importance for students, teachers, scholars, syllabus designers and educators in improving, developing and selecting their teaching materials and teaching methods for teaching and learning morphemes.

2.0 Literature Review

2.1 Morphemic Analysis Awareness

Carlisle (1995) asserts that morphemic awareness refers to children’s understanding of the structure of words morphologically and their ability to reflect on and manipulate that structure. According to Baumann, Edwards, Font, Tereshinski, Kame’enui, and Olejnik (2002), on the other hand, it refers to unlocking a word’s meaning by examining its morphemes. While a variety of definitions of the term morphemic analysis awareness have been suggested, this paper uses the definition suggested by Talerico (2007) which refers to the students’ ability to explicitly understand and manipulate word parts.

Mountain (2011) and Antonacci and O’Callaghan (2011) draws on an extensive range of sources which suggests that morphemic analysis awareness helps students to recognize affixes and roots, understand their meanings; and apply this knowledge to unlock complex and new words by analyzing the morphemes within the words. Antonacci and O’Callaghan (2011) further claims that when teachers employ morphemic analysis strategy in their classrooms, students see more than just the parts of words. Rather, teachers lead students to examine the word for its meaningful parts to discover the word’s meaning. Therefore, this evidence suggests morphemic analysis strategy can create awareness for students to deconstruct and construct meaning from the morphemes within the word itself besides looking for meanings from context and dictionary.

2.2 Morphemic units

A morpheme is the smallest unit of meaning. Morphemes are of the two types. First are free morphemes, which are roots within complex words that can stand alone as words, such as popular and satisfy. Second are bound morphemes, which are prefixes and suffixes that cannot stand alone as words, such as un-, re-, -ness and -ly (derivational) and -ed and -s (inflectional). Bound morphemes that are suffixes are one of the two following types:

a. Inflectional morphemes change the tense or number of a word without changing its part of speech
b. Derivational morphemes change a word’s part of speech

Both inflectional and derivational processes depend on affixation (additions to a word-form either initially (prefixes) or finally (suffixes). Both derivational and inflectional affixes are grammatical, have complementary functions and are interdependent (Saif, 2011).
2.2.1 Inflections

Zhang and Koda (2013) note that awareness of inflectional morphology is a comparatively early acquired competence. However, Windsor, Scott and Street (2000) stress that individual differences with inflections exist, especially with inflectional suffixes -s, -ed, -ing, -er, and -est.

2.2.2 Derivatives

Carlisle and Fleming (2003) point out that 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. This is because of the large number of derivational affixes in English and the nature of derivational process (Zhang & Koda, 2013).

2.3 Morphemic Analysis Strategy

The theoretical framework of this study is based on morphemic analysis strategy. The application of morphemic analysis strategy can engage students’ vocabulary development (Baumann et al., 2002). Nagy and Scott (2000) acknowledge the prevalence of linguistic cues by noting that “morphology is the major source of information than context to an ESL learner who comes across a new word” because of their limited English proficiency (p. 275). Likewise, as there are a large number of words students are expected to learn; and teachers have limited time to teach struggling learners; and also the fact that ESL students require explicit instruction, teaching students morphemic analysis strategy might be a possible way to help students to develop their vocabulary (Harris, 2011). As mentioned by Kieffer and Lesaux (2007), the meanings of many words can be inferred through morphemic analysis and students are likely to benefit from such instruction. This study is conducted to examine students’ knowledge on prefixes and suffixes so that a remedy for their morphology-related errors can be sought through morphemic analysis strategy.

2.4 Morphemic analysis strategy and vocabulary development

To date various studies have demonstrated the relationship between vocabulary and morphemic analysis strategy. For example, Kieffer and Lesaux (2007) point out that as students move from primary education to secondary they read more complex texts; thus it is necessary to provide students with a cognitive strategy to learn new and complex words from the texts. Both studies of Baumann et al. in 2002 and 2003 showed that the teaching of prefixes, suffixes, and roots as word-part clues had increased students’ vocabulary and text comprehension. Meanwhile, Biemiller and Boote (2006) consider morphemic analysis as a very important instructional strategy to promote vocabulary among learners. This view is further supported by Gomez (2009) who found that morphemic awareness contributed to word reading, reading comprehension and vocabulary; and she strongly suggests that the ability to perform morphemic analysis is important for students learning English.

The above mentioned results are consistent with earlier studies measuring the effect of morphemic analysis strategy. A study by Tomesen & Aarnoutse in 1998 found that Dutch students profited from morphemic analysis instruction as they learned to use word-parts to help unlock the meanings of new and complex words. White, Sowell and Yanagihara’s study in 1989 also indicated that their quasi-experimental study showed positive potential for morphemic analysis strategy. The
experimental group that was given instruction on prefixes and suffixes outperformed the control group who was not given such instruction. Anglin (1993) measured vocabulary development between lower and higher grades and found that higher grade learners had acquired almost twice as many words composed by lower grade students. He found that learners’ ability to figure out words by analyzing their morphological structure increases with age and grade/level. Thus, Anglin recommends an instruction in morphemic analysis that is appropriate with learners’ level and age.

3.0 Methodology

3.1 Participants

This quasi-experimental study was carried out on 40 Malaysian secondary school students, from one existing class. The number of samples was deemed appropriate for the study as Fraenkel and Wallen (2009) recommend a minimum of 30 individuals for experimental studies.

In order to minimize the effect of confounding variables, the researcher selected an intact group that was homogeneous in terms of age (16 years old), gender (male) and proficiency (low proficiency). The participants were also particularly chosen for three main reasons. First, they have most probably acquired basic reading skills. Second, secondary school texts are dense with morphologically complex words (Ebbers, 2008). And finally, low proficiency learners can make use of morphemic units to infer the meanings of words (Carlisle & Stone, 2005; Ferguson, 2006; Singson et al., 2000).

3.2 Instrumentation

3.2.1 Morphemic Sensitivity Test

Morphemic Sensitivity Test (Appendix 1), with its two subtests: Morphemic Identification Test and Morphemic Structure Test adapted from Gomez (2009), was employed to measure the students’ ability to reflect and manipulate morphemic units in English. This test was of interest to the researcher as it encompasses both the analytic as well as synthetic aspects of word formation rules. The test was used because according to Alsalamah (2011), it is consistent and reliable and also the results are easy to score and interpret. However, the researcher made some minor modifications on the tests items to make it more appropriate for the participants’ age and proficiency level in this study. Clear instruction on the answering techniques and examples were given to participants prior to the tests. No time limit was set for the tests and the participants were asked to answer the questions on their own pace. This was to minimize participants’ fatigue and anxiety (Alsalamah, 2011).

3.2.3 Morphemic Identification Test

The Morphemic Identification Test consisting of 15 items was administered to determine participants’ ability to analyze and break down complex words into smaller meanings (e.g. uncomfortable = un + comfort + able). The items included both inflectional and derivational affixes. 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 is important because it can measure their analytic ability (Al Farsi, 2008).

3.2.4 Morphemic Structural Test
The Morphemic Structural Test was used to measure the participants’ ability to synthesize morpheme to create new meanings. Participants were asked to add affixes to the given base words in order to complete the sentences (e.g., farm = My uncle is a farmer). The 15 items tested were inclusive of inflectional and derivational affixes. The test is important because it can measure their synthesis ability (Al Farsi, 2008).

3.3 Reliability

To ensure the reliability of the test, the Cronbach alpha reliability indices were calculated for the Morphemic Sensitivity Test used in this study. The alpha indices for the tests were high, ranging from 0.78 to 0.83 (Table 1).

Table 1. Cronbach’s Alpha of Morphemic Sensitivity Test (n=40)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>No of Items</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphemic Structural Test</td>
<td>15</td>
<td>0.78</td>
</tr>
<tr>
<td>Morphemic Identification Test</td>
<td>15</td>
<td>0.83</td>
</tr>
<tr>
<td>Morphemic Sensitivity Test</td>
<td>30</td>
<td>0.81</td>
</tr>
</tbody>
</table>

According to Sekaran and Bougie (2010), the instrument has a high reliability standard and is good for classroom test because the coefficient alpha is above 0.70.

3.4 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 that suited the purpose of the study; and also to control the possibilities of confounding variables. Prior to the commencing of the tests, the participants were informed about the purpose of the study; and they were assured of the confidentiality of their identity and findings. They were also made known that their involvement would not affect their school grades. Participants’ consent was obtained. Then, the Morphemic Sensitivity Test with its two subtests: Morphemic Identification Test and Morphemic Structural Test were administered. The tests were on print and held in a predetermined location by the researcher.

4.0 Data Analysis

In order to analyze the data gathered, the researcher employed paired-sample t-test to find any significant performance of the participants in two aspects of morphemic analysis awareness: analytic and synthetic.

5.0 Results

The paired sample t-test was used to compare the mean scores of the participants on the morphemic identification and morphemic structural tests. The results revealed that there was no significant performance of the participants in both tests (t (38) = 0.4667, p<.05) as shown in Table 2.
Table 2. Descriptive statistics and paired sample t-test results for Morphemic Sensitivity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphemic Identification Test</td>
<td>40</td>
<td>0.45</td>
<td>0.50</td>
<td>0.4667</td>
<td>38</td>
<td>.110</td>
</tr>
<tr>
<td>Morphemic Structural Test</td>
<td>40</td>
<td>0.38</td>
<td>0.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p<.05

Also, ESL low proficiency students’ performance on analytic aspect (0.45) was not significantly higher than synthetic aspect (0.38).

6.0 Discussion

The results of this study indicated that the learners’ morphemic analysis awareness did not differ both analytically and synthetically. Accordingly, the alternative hypothesis claiming a significant difference between the performances of the participants in morphemic identification and morphemic structural tests was rejected. The second hypothesis was also rejected as proficiency students’ performance on analytic aspect was not significantly higher than synthetic aspect. It was in contrast with Khodadoust, Aliasin and Khosravi’s (2013) claim that learners were aware of morphemic knowledge and they were able to discriminate analytic ability from synthetic ability.

The findings of this study showed that students in this study were not familiar with both analytic and synthetic aspects of morphemic analysis awareness. The results of this study can be seen from many aspects. First, it was carried out without any morphemic analysis strategy instruction prior to the assessment. And second, the tests may not be well developed and modified to suit the participants of this study. These two reasons may have affected the students’ performance.

The relatively poor performance of these students in the creation of inflectional and derivational words implies that it would be more difficult to apply morphemic structure of the words to construct new words. As mentioned by Khodadoust et al. (2013), one imperative aspect of morphemic analysis awareness includes the ability to indicate morphemic identification knowledge (analytic aspect) and morphemic structure knowledge (synthetic aspect). Wysocki and Jenkins (1987) found that students are able to learn some new words by morphological generalization; and such generalization does facilitate vocabulary building, provided that students given direct instructions on morphology. Likewise, according to Chang et al. (2005), analytic and synthetic knowledge is crucial because they play a significant role in fostering students’ vocabulary knowledge.

7.0 Recommendations for Further Study

The researcher recommends other researchers to reproduce this study after a morphemic analysis strategy intervention programme is established. This is so that a more comprehensive research can be established that can highlight the importance of morphemic analysis awareness as a metalinguistic tool for language success (Al Farsi, 2008).

In future, the synthesis and analysis sections in Morphemic Sensitive Test should be modified to make them more appropriate for ESL low proficiency secondary school students. This is important so that a constructive result can be achieved (Tatabei, 2011); and the more appropriate Morphemic Sensitive Test that can actually assess students’ morphemic analysis awareness can be developed (Khodadoust et al., 2013).
8.0 Conclusion

The current study examined ESL low proficiency secondary school students’ morphemic analysis awareness in analytic and synthetic aspects. Learners’ inability to indicate morphemic identification knowledge (analytic aspect) and morphemic structural knowledge (synthetic aspect) of encountered words suggest that there is a need for morphemic analysis strategy intervention and explicit teaching of morphemic units (Al Farsi, 2008).

Collectively, Khodadoust et al. (2013) and Gomez (2009) point out that morphemic analysis awareness is crucial for learners as it is related to various language skills such as, spelling, vocabulary growth, and reading comprehension. Also, learners are able to use their morphemic knowledge to arrive at the meaning of complex words (Carlisle, 2000; Carlisle & Stone, 2003; Wysocki & Jenkins, 1987). Thus, promoting morphemic analysis strategy should be seen as a means to develop learners’ vocabulary effectively (Al Farsi, 2008).

It can be concluded that from this current study some interesting insights about the ESL low proficiency learners’ morphemic analysis awareness have been gained, nonetheless, there is still a lot more to discover by further research.
Reference:


