A Morphological Analysis of Complex Nouns in the Malaysian University English Test (MUET) Reading Comprehension Texts

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Abstract: The knowledge of vocabulary is one important aspect in reading comprehension. Therefore, various techniques have been introduced by scholars for vocabulary development. One of the techniques extensively recommended by scholars is morphological analysis. The knowledge of morphology of English words proves to go a long way in comprehension as English words are made up of morphemes that contribute meanings to the words as whole. The reading comprehension texts of the Malaysian University English Test (MUET) contain an enormous amount of nouns as these are content words. A brief examination of these content words reveals that most of them are complex nouns. It is deemed important to understand these complex nouns as the texts are made sense through the understanding of these complex nouns. Therefore, this study is carried out to examine the morphology of the complex nouns to obtain some knowledge on the nature of the complex nouns and the word parts of the complex nouns. The findings of this study reveal that suffix is the most common type of word part. The way the complex nouns are formed can generally be classified into eight groups according to the number of affixes in a complex noun. However, the results generated from this study indicate that most of the complex nouns are formed with one suffix through the process of affixation.

Keywords: Reading comprehension, morphemic analysis, word parts

INTRODUCTION

There is a strong relationship between comprehension and vocabulary as thoughts are expressed in the form of words, thus the understanding of words will lead to the comprehension of a text (Lin, 1999; Rubin, 2003; Smith, 1997). Therefore, the comprehension of a text begins with the understanding of the words in the text.

Many effective methods are introduced to readers to enable them to decipher the meanings of unknown words so that the comprehension of a text could be obtained. One of the most widely suggested ways is looking at the morphology of a word. The use of morphological analysis not only enhances the understanding of unfamiliar words, but effectively develops the vocabulary (Gordon, 1985).

According to Nation (2001), the awareness of frequently used word parts such as *un-* (prefix), *manage* (root), and *–able* (suffix), and the ability to identify them in

words as well as the representation of the complete meaning of a word through the word parts will enable a learner to develop his/her vocabulary efficiently. The knowledge of word parts helps learners of English to comprehend unknown words as well as double check the meaning of the words guessed from a context (Allan & Miller, 2000; Nation, 2001).

Therefore, the understanding of word parts may ensure vocabulary development. As a result, learners of English may comprehend a text in a more effective way. In addition, this vocabulary learning strategy creates independent learners of English (Allan & Miller, 2000; Nation, 2001). Thus, word parts awareness may be a useful comprehension strategy for pre-university students who are preparing themselves for tertiary education.

Although Ng et al. (1999) and Pandian and Lee (1999) state that vocabulary is an aspect tested in the MUET reading comprehension component, there is lack of emphasis on word parts to derive the meaning of words. Nagy and Anderson (1984) affirm that 60% of academic vocabulary is morphologically complex words. Since the success of reading comprehension is highly dependent on vocabulary size, morphological awareness among learners is strongly supported (Anderson & Freebody, 1981; Chall, 1987; Beck, McKeown & Kucan, 2008). In addition, there is very little knowledge on the complexity of nouns in the MUET reading comprehension texts. The importance of word parts of the content words in the reading comprehension texts and the lack of knowledge on the nature of complex nouns in the MUET reading comprehension texts have triggered the researcher to look into the word parts and the morphological processes of complex nouns in the MUET reading comprehension texts. Through a better understanding of the complexity of the content nouns, teachers can focus on the frequently used word parts to help learners develop their vocabulary more effectively.

READING COMPREHENSION AND WORD KNOWLEDGE

According to Bruder and Henderson (1986), reading is a complicated process which requires a collaboration of a set of subskills for the reader to understand a text and the writer's intended message. In terms of reading materials, the amount of unfamiliar words, length of sentences and syntax pose problems to the readers (Ekwall and Shanker, 1993). A study by Suppiah and Murugaiah (2003) on a group of undergraduates who are ESL learners in a local university has revealed five common problems the students encounter when they read. They claim that students have a limited vocabulary and "vocabulary development may be the single most important component lacking for fluent reading" (2003, p. 127).

Ekwall and Shanker (1993) state that very often students are unsuccessful in learning to read due to large class size and insufficient time spent on direct reading instruction by the teacher. Therefore, they suggest two approaches to help students with reading difficulties, i.e. language-experience approach and effective oral reading techniques that include the Neurological-Impress Method, echo reading or imitative reading, repeated reading and precision reading. Although the second approach proves

to be more effective than the first, it requires an immense amount of repetition and guidance from the teacher.

On the other hand, Grellet (1981) proposes sensitizing which involves making inferences through the use of context clues, word formation and derivation to ensure better comprehension. In the same vein, Suppiah and Murugaiah (2003) also encourage the use of word structure analysis to assist students in acquiring new words. They, in addition to supporting Ekwall and Shanker in the use of repeated reading, also contend that students should use various reading strategies in order to overcome reading difficulties such as word analysis and mind mapping.

TEACHING AND LEARNING OF VOCABULARY

The process of teaching and learning vocabulary is a complex one. Keller (1978) ascertains three approaches to vocabulary teaching and learning: the root approach, the etymological/mnemonic approach and the topical vocabulary checklist. The knowledge of root words and affixes is crucial in the root approach. "Students already familiar with the meanings of prefixes and roots can often guess the meaning of a new prefix-root combination." (1978, p. 4) He asserts that frequent exposure to words with the same root structure will enable the student to remember the words as it serves a "mnemonic device".

Miller (1973, 1974), on the contrary, proposes word recognition techniques for vocabulary improvement. She also asserts that vocabulary development is made up of two different parts: the sight vocabulary and the meaning vocabulary. Each learner has five different types of meaning vocabularies.

The listening vocabulary is the first to develop, followed by the speaking vocabulary, the reading vocabulary, the writing vocabulary, and lastly the potential or marginal vocabulary which comprises "all words which a person could understand under circumstances" through the use of word recognition techniques (1974, p. 75). These techniques include structural analysis, context clue usage and dictionary usage. Flemming (1978) also recommends the same strategies for vocabulary development. However, she states that although dictionary usage is the best way to discover the meaning of words, context clues and structural analysis are time saving methods. Nation (1990) also implies guessing from the context, using word parts and dictionary work as vocabulary developing strategies. In addition to that, he encourages the use of word list. Nevertheless, he suggests learning of vocabulary by direct study and through reading. Although direct study is best practice on an individual basis, learning of vocabulary through reading also increases the size of an individual's vocabulary. In addition to Nation's suggested strategies, Williams (1985) has recommended some strategies for dealing with unknown words especially in ESP. They are identifying lexical familiarization, unchaining nominal compounds and searching for a synonym (cited in Nation, 1990).

On the other hand, Piercey (1982) combines structural analysis strategy with another approach, Talk Through. This learner-centred approach allows association of new ideas with existing ideas through the use of structural analysis. The teacher serves

as a mediator to help students decipher the meaning of a word. Therefore, the Talk Through approaches "links the known to the unknown" (1982:9). Another combination of strategies is by Clarke and Nation (1980). They combine guessing from context and using word parts. First, a learner uses the clues in the text to guess the meaning of an unknown word and then checks the meaning through word parts (cited in Nation, 1990).

STRATEGIES FOR VOCABULARY DEVELOPMENT

Many strategies for vocabulary development have been introduced by scholars all over the world. However, these strategies are based on almost the same few. Furthermore, many different terms have been given to the same strategies. The most widely used strategies are guessing from context, using word parts, dictionary work and learning words in isolation.

Steinberg (1978) includes word analysis as a clue for a successful guess of meaning (cited in Nation, 1990). However, word analysis is considered as another strategy altogether as it requires a different approach, though word analysis does serve as an additional hint for guessing from context. It is important to note here that to decipher the meaning of a word successfully, various strategies are employed, especially if a learner has a limited amount of existing vocabulary (Sökmen, 1997).

Sökmen adds guessing meanings of words from context is a slow process as it requires a certain amount of active vocabulary. This strategy is also "an error-prone process" as previous studies have shown that learners tend to guess the wrong meaning (Sökmen, 1997). Thus, it decreases the level of comprehension.

In addition, studies have also revealed that unknown words which are guessed from context do not retain in the long-term memory (Wit de-Boer, 1991; Parry, 1993; Paribakht, 1994 cited in Sökmen, 1997). Therefore, Sökmen concludes that this strategy is solely useful to learners with high proficiency and it only assists comprehension and not vocabulary development.

Nevertheless, Gordon (1985) attests that the use of word parts in understanding unfamiliar words is an effective way of developing vocabulary. Word parts involve root words, prefixes and suffixes. This strategy is also known as word analysis, morphemic analysis and structural analysis. However, Cheek (1974) includes structural analysis and context clues as word analysis skills. Conversely, in recent years, structural analysis is considered an approach by itself, and the same for context clues. The awareness of frequently used word parts and the ability to identify them in words as well as the representation of the complete meaning of a word through the word parts will enable a learner to develop this vocabulary efficiently (Nation, 2001). Nation (1990) claims that the knowledge of root words and affixes not only enables a learner to unlock the meanings of unknown words but also serves to cross-check meanings guessed from context. He also states that this strategy requires three skills. A learner needs to be able to divide the word into its roots and affixes. The learner needs to know the meanings of each word parts and to be able to make out the connection between the meaning of the word parts and the dictionary definition.

The use of word parts as a strategy to develop vocabulary has been viewed negatively and also positively. Taylor (1990, p. 24) posits that "many teachers are shy of exploiting this aspect orally because of a fear that to do so would be to talk 'about' language rather than to 'use' it." However, she further points out that the teaching methodology has changed and that the aspect of morphology can be included in classroom.

Previous studies on learning word parts as an approach to building vocabulary have shown that the knowledge of word parts can help learners to make sense of the meaning of an unfamiliar word. Rubin revealed that learning thirty word parts allows the comprehension of 14,000 words. She further attests that this vocabulary learning strategy "helps to unlock new words all through life" (2003, p. 10). These word parts have been developed into 14 master words such as 'detain', 'epilogue' and 'reproduction'. The knowledge of these 14 master words as well as their word parts enables learners to decipher the meaning of an unknown word (Nation, 1990).

Miller (1973) recommends this strategy for vocabulary development in a reading programme. He further attests that structural analysis may be useful to mildly disabled readers as well. However, he contends that the knowledge of commonly used prefixes will provide sufficient knowledge of word parts for this group of learners. In the same vein, Wallace (1982) asserts that a useful list of commonly used prefixes and suffixes should be produced to facilitate the teaching process. Piercey (1982) supports the notion by introducing "Student Booklet" which contains prefixes, suffixes and roots that are frequently used in a particular subject. This booklet is prepared by the teacher to assist learners in coping with new vocabulary in that particular subject.

Walker (1981) studied a group of Spanish speaking adult readers of EFL and found that one of the strategies used in obtaining the meaning of an unknown word is through the use of morphemic analysis (word analysis). Another study by Chern (1993) on Chinese undergraduates in the USA showed that affixes are used as a method to figure out meanings of unfamiliar words (cited in Lin, 1999). Although this strategy is extensively recommended by scholars and it is widely used by learners, Nation cautions that "it is not recommended as a way of finding meaning of unknown vocabulary" (1990, p. 131). He attests that this strategy should only serve as a supplement to guessing from context to cross check the word meaning. This is due to the reason that some words which are context dependent vary in meanings according to the context.

STUDIES ON VOCABULARY DEVELOPMENT

Anglin (1993) in a study focusing on the development of morphological knowledge among a group of children in the early and middle elementary school years discovered that the comprehension of derived words and multimorphemic words increases with age. Therefore, Anglin construes that the morphological knowledge grows with age. He adds that "morphological problem solving contributes substantially to the growth of vocabulary knowledge" (1993, p. 143). Another finding of his study reveals that direct instruction of vocabulary learning only assists the children in a slight manner as his subjects were not exposed much to this approach. However, he asserts that the finding does not conclude that direct instruction is insignificant. He concludes that children

have the ability to learn words through inferences either orally or in written text, and they are able to analyse morphologically complex words.

On the other hand, Paiman, Yap and Chan (2015) have proven otherwise. Their study concluded that learners who received instruction on morphemic analysis have an increase in vocabulary knowledge and size. The explicit instruction on specific Graeco-Latin word parts in the study has been discovered as the most effective vocabulary learning strategy in the science and technology field. Their study supports that of Ramirez et al. (2010) where Spanish morphological awareness contributed to the development of Spanish vocabulary of the learners, as well as of Bellomo (2005) where direct teaching of Latinate word parts promoted vocabulary development in learners of various native languages (cited in Paiman, Yap and Chan, 2015).

In the review above, previous studies suggest that although word analysis is not favoured by certain group of learners, it is an effective strategy to unlock the meanings of words. However, previous studies have largely focused on the use of word analysis as a vocabulary learning strategy and learners' understanding of affixes and their ability in the use of affixes.

Ng et al. (2000, p. 100) states that the use of contextual clues to unlock meanings of words has its limitations, that is, "it is not always possible to work out the exact meaning of a word from context" and "the text may not contain sufficient clues for you to get the meaning of a word." In other words, an additional approach should be included to help MUET students in obtaining the meaning of words in reading comprehension texts. In view of the fact that the knowledge of word parts will promote better comprehension, word analysis should be introduced in the teaching of MUET reading comprehension component to act as a supplement to contextual clues. Moreover, previous studies reviewed above have shown that the use of word analysis is an effective method to increase the level of comprehension. However, the review has also shown that there is no study on the complexity of word parts in written texts.

METHODOLOGY

This study aims at finding out the most commonly used word parts and the way these word parts are used in the formation of complex nouns as well as the morphological processes of the complex nouns in the MUET reading comprehension texts. This study is carried out synchronically where the words are analysed based on the current development, and not diachronically which is based on the historical development of words (Huddleston, 1984). To facilitate the study, two approaches have been taken into consideration. The theoretical framework of this study is based on O'Grady and Guzman's (1996) tree structure model and Algeo's scthema of word formation types (cited in Shortis, 2001).

Firstly, in order to study the word parts and the internal structure of the complex nouns, O'Grady and Guzman's (1996) tree structure model is adapted. The tree structure enables the researcher to break down the complex nouns into smaller unit of meaning, or rather, morphemes for analysis. The order of word parts in the formation of complex nouns can also be examined through the use of tree structure. This tree

structure model is more comprehensive than other word analysis structures as the complexity of a word as well as the hierarchical order of word parts are displayed simultaneously in the diagram. Therefore, a detailed account of the internal structure of a word can be displayed in this tree structure model.

Secondly, Algeo's schema of word formation types (cited in Shortis, 2001) is adopted to discover the morphological processes of the complex nouns. Algeo's schema will enable the researcher to classify the morphological processes in a systematic way as the classification of morphological processes is viewed broadly enough for this study. Furthermore, the definitions for each morphological process are clearly provided in the schema to facilitate the analysis of the findings. Thus, Algeo's schema of word formation types which consists of six groups of morphological processes: Loans, Shifts, Composites, Shortenings, Creations and Blends, and is complete with definitions, permits a feasible analysis of the data.

There are five linear texts in each MUET reading comprehension component. "Linear texts are prose which is written language in its ordinary form rather than poetry." (Pandian & Lee, 1999, p. 70) The number of words in each text ranges from 400 words to 750 words.

Although according to Ng et al. (1999), the texts used in the MUET reading comprehension component are generally informative newspaper articles and academic writings, some texts are excerpts from literature, autobiography or biography. However, for the purpose of this study, only informative texts are included in this study. This is due to the reason that informative texts have higher occurrence in all the test papers.

The corpus for this study is 20,000 words. However, the corpus for noun words is approximately 7,000 words. An analysis of the noun words shows that there are approximately 1,800 complex nouns in the corpus. In many cases, however, there are repeated occurrences of the similar words. Therefore, complex nouns with repeated occurrence are used only once for analysis. All in all, 727 complex nouns were identified and analysed in this study.

PROCEDURE

First, informative texts are selected from the MUET reading comprehension papers from the year 2002 to 2004. The texts are selected based on the style of writing as well as the content to distinguish informative texts from non-informative texts. Texts which are not informative such as literature work, autobiography or biography, are excluded from the study.

Next, the presence of nouns is identified. This process is done manually by the researcher with the help of dictionaries. The nouns are first identified by looking at the context of the occurrence of noun phrases. Noun phrase usually occurs as the subject or the object of a sentence. Noun phrases are usually closely positioned to the verbal predicates, for example, 'The disappointed teacher reconsidered her teaching methods.' 'The disappointed teacher' is a noun phrase, whereas 'reconsidered her teaching methods' is a verbal predicate. In addition, nouns usually exist with determiners such as 'a', 'an' and 'the' (Tallerman, 1998). Therefore, the position of the noun phrase and

the existence of determiners help the researcher to determine nouns from words of other lexical category. In many instances, the lexical category is difficult to be determined by looking at the context. Therefore, in such cases, the researcher refers to the dictionaries for clarification.

Then, the nouns are listed down. This is followed by the identification of complex nouns. This process is also done manually by the researcher. Complex nouns which have repeated occurrence are only used once in the data collection. The identification of complex nouns is based on O'Grady and Guzman's definition. In keeping with the definition, noun compound words, which are made up of minimum two roots, are eliminated.

The complex nouns are analysed based on their respective word parts with the help of the list of prefix and suffix in the Oxford Advanced Learner's Dictionary, 7th edition (2005) as well as the American Heritage Dictionary of English Language, 4th edition (2000). The word parts of the complex nouns in the MUET reading comprehension texts are then listed in a table to obtain the frequency.

The word parts are categorised into three groups: root, prefix or suffix, based on an adaptation of O'Grady and Guzman's model of tree structure. The adaptation of the model of tree structure helps to reveal the internal structure of a complex noun which then allows the researcher to analyse the word parts of the complex nouns. This is followed by the analysis of morphological processes based on Algeo's schema of word formation types. Algeo's schema enables the researcher to classify the morphological processes of the complex nouns.

Table 1: Algeo's Schema of Word Formation Processes (cited in Shortis, 2001, p. 54)

Loans
Words 'borrowed' from other languages
May not follow the usual patterns of sound and spelling in the borrower language

Shifts
Shifts of meaning
* Amelioration   * Widening
* Pejoration   * Narrowing
Shifts of word class or 'functional shift' such as
* Noun to verb   * Noun to adjective

Creations
No links with previous words

Composites
Words made from combinations of words or parts of other words.
* Compounding
  Combining word forms
* Affixation
  Combining of words and parts of words

Shortenings
Parts of word left out for economy such as
* Clippings   * Initialisms
* Acronyms   * Backformation
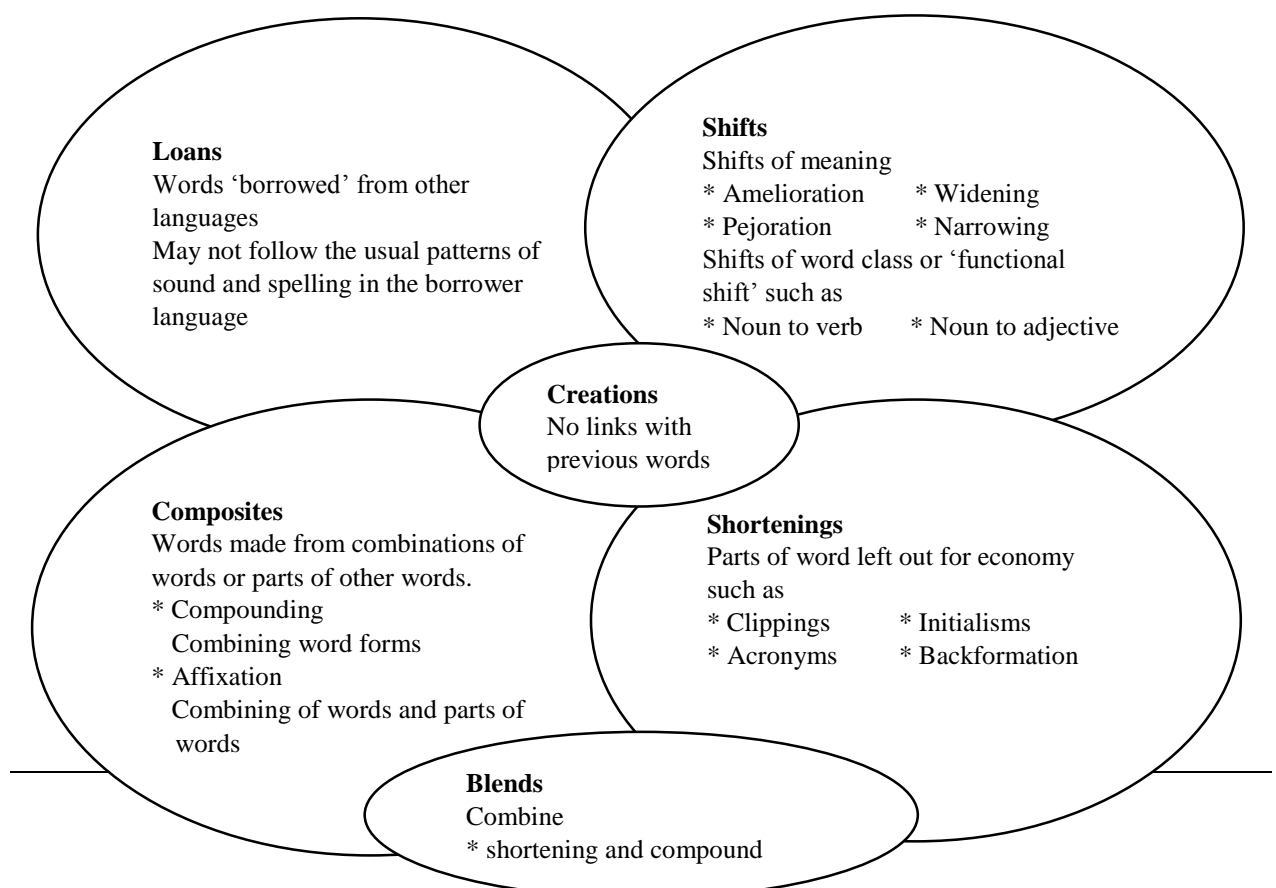
Blends
Combine
* shortening and compound

Table 1 displays Algeo's schema of word formation processes. Algeo has classified the word formation processes into six groups: Loans, Shifts, Composites, Shortenings, Creations and Blends. The sub-word formation processes are categorised under these groups accordingly. However, because the focus of the study is on complex nouns which are made up of one root and one affix or affixes, the sub-word formation, compounding, is not within the limits of the discussion of this study. The discussion of the 'shifts of meaning' sub-word formation is also excluded as amelioration, pejoration, widening and narrowing involve another area of linguistics which is semantics, and that is not within the boundaries of this study.

The definitions provided by Algeo and also the definitions by other scholars are used as guidelines to determine the morphological processes of each complex noun. The data for the sub-word formation processes gathered is then classified into the six groups of word formation processes. The frequency of each word formation is provided in order to uncover the most frequently used morphological processes of the complex nouns in the MUET reading comprehension texts. The highest frequency indicates the most frequently used morphological processes.

RESULTS

A total of 1,609 word parts were gathered from the MUET reading comprehension texts. Table 2 shows that more than half of the word parts are suffixes with the highest percentage of 52.8%. This is followed by roots (45.2%) and the smallest group of word parts is prefix (2.0%).

Table 2: Word Parts of the Complex Nouns

WORD PARTS	EXAMPLES	FREQUENCY	PERCENTAGE
Suffix	-s/, -ion, -ing	850	52.8%
Root	hatch, differ, rest	727	45.2%
Prefix	re-, self-, in-	32	2.0%
TOTAL		1609	100.0%

A total of 850 suffixes were accumulated from the complex nouns in the MUET reading comprehension texts. Most complex nouns are formed with the suffix -s/-es, e.g. enemi-*es*, habit-*s*, and relative-*s*. This group of suffix, used as a marker of plurality, has the highest occurrence with approximately 54% of the total of suffixes found in the complex nouns. There were altogether 32 prefixes in the complex nouns. The highest occurrence of prefixes is re-, which means 'again' (e.g. *re*-actions, *re*-cycling and *re*-view), at approximately 31% of the total number of prefixes.

Table 3 indicates that there are a total of 727 roots in the complex nouns. The roots of the complex nouns can be divided according to their lexical category. There are altogether three lexical categories. The lexical categories are Noun, Verb and Adjective. From the results in Table 3, it is evident that the roots of the complex nouns are largely derived from nouns (e.g. *area* as in areas, *industry* as in industrialisation, and *friend* as in friendlies). Out of 727 roots, approximately 59% of the roots are derived from nouns. The results also illustrate that Verb (e.g. *rob* as in robbery, *write* as in

writings, and *appear* as in appearance) occurred only about half of the percentage of Noun, with approximately 30%. This is followed by Adjective (e.g. *moist* as in moisture, *real* as in reality, and *grey* as in greys) with approximately a third of the percentage of Verb, which is 10.7%.

Table 3: Lexical Categories of the Roots of the Complex Nouns

LEXICAL CATEGORY OF ROOTS	FREQUENCY	PERCENTAGE
Noun	430	59.1%
Verb	219	30.1%
Adjective	78	10.7%
TOTAL	727	100.0%

Table 4 shows that the majority of complex nouns are made up of one root and one suffix with the frequency of 563 words. This category makes up approximately 77% of the total of all the formation of complex nouns. The number of nouns made up of one root and two suffixes is comparatively lower with approximately 15%. This is followed by nouns made up of one root with one prefix and one suffix (2.06%), one root and one prefix (1.51%), and a spelling changed root and one suffix (1.38%). The last three categories comprise less than 1% respectively. These last three categories are nouns with a root and three suffixes, nouns with a root, a prefix and two suffixes, and nouns with a spelling changed root and two suffixes.

Table 4: The Formation of the Complex Nouns

FORMATION OF COMPLEX NOUNS	EXAMPLES	FREQUENCY	PERCENTAGE
A root and one suffix	attempt-*s*, hatch-*ing*, cover-*age*	563	77.44%
A root and two suffixes	differ-*ence-s*, rest-*less-ness*, global-*ise-ation*	112	15.41%
A root and one prefix and one suffix	*by*-product-*s*, *re*-think-*ing*, *self*-concept-*s*	15	2.06%
A root and one prefix	*dis*-order, *thermo*-plastic, *super*-human	11	1.51%
A spelling changed root and one suffix	retain + -*tion* → retention, decide + -*sion* → decision	10	1.38%
A root and three suffixes	herb-*al-ist-s*, act-*ive-ity-es*, fertile-*ise-er-s*	6	0.83%
A root and one prefix and two suffixes	*co*-work-*er-s*, *re*-search-*er-s*, *in*-equal-*ity-es*	6	0.83%
A spelling changed root and two suffixes	circle + -*ate* + -*ion* → circulation	4	0.55%
TOTAL		727	100.00%

Table 5 displays the morphological processes of the complex nouns. It is clear that there are two morphological processes for the formation of the complex nouns. However, majority of the complex nouns are composites (e.g. hunt + -er + -s → hunters; bio- + mark + -er + -s → biomarkers) with approximately 92%, whilst the remaining 8% are shifts.

An example of shift found it in the data is the present participle 'feeding' which occurs in the following sentence, 'In the *feeding* and safeguarding of offspring …' This word undergoes a shift of word class from verb to noun; producing 'feeding' which now refers to the act of giving food to a person or animal. However, in actual fact, the word 'feeding' is first derived from the verb 'feed' by attaching suffix -ing through the process of affixation. The process of functional shift comes after the process of affixation.

Table 5: The Morphological Processes of the Complex Nouns

MORPHOLOGICAL PROCESS	FREQUENCY	PERCENTAGE
Composites	882	91.9%
Shifts	78	8.1%
Loans	0	0.0%
Creations	0	0.0%
Blends	0	0.0%
Shortenings	0	0.0%
TOTAL	960	100.0%

DISCUSSION

The findings reveal that the most common group of word parts used in the complex nouns is suffix which comprises more than half of the total number of word parts. Conversely, the prefix is the smallest group of word parts whilst root is comparatively lower than suffix. Most of the complex nouns in the MUET reading comprehension texts are formed with one suffix. The vast difference in the number of occurrences of prefixes and suffixes also further substantiates that suffix is way more productive than prefix as stated by O'Grady and Guzman (1996) and Stump (1998).

With regard to the roots of the complex nouns, there are only three lexical categories of words where complex nouns are derived from, namely noun, verb and adjective. The distribution of the lexical categories of the roots of the complex nouns seems to support the findings of Biber, Conrad and Leech (2002) on the distribution of lexical word classes of conversation, fiction writing, news and academic prose where nouns occur most frequently, followed by verbs and adjectives.

More than half of the complex nouns are derived nouns. Based on the data presented in Table 3, the roots of the complex nouns are mainly nouns and verbs with approximately 89%. Adjectives make up the remaining 11%. This is turn supports Biber, Conrad and Leech's (2002) claim that nouns and verbs are generally the two most common lexical categories.

With regard to the suffixes of the complex nouns, suffix -s/-es occurs most frequently. It is observed that most complex nouns are formed by a root and suffix -s/-es. This suffix which conveys only one meaning, i.e. to mark plurality, occurs very extensively with nouns to serve as a plurality marker for most countable nouns. On the other hand, prefix re- is the most frequently used prefix. As opposed to suffix -s/-es, this prefix conveys two meanings, i.e. again and back. However, the more widely used meaning in the study is 'again'.

The results of this study also revealed that the complex nouns are formed in eight different ways: with three suffixes, two suffixes, one suffix, one prefix, one prefix and one suffix, one prefix and two suffixes, a spelling changed root and two suffixes, and a spelling changed root and one suffix. However, the findings indicate that the most common way of forming the complex nouns is with one suffix.

The findings also showed that most complex nouns are composites and shifts. However, composites are more largely used as compared to shifts as displayed in Table 5. The remaining morphological processes, loans, creations, blends and shortenings never occurred in the formation of the complex nouns. As highlighted in the Methodology section, the composites of the complex nouns involve only affixation as the sub-word formation, and the shifts are all functional shifts. In other words, affixation is the most common morphological process of the complex nouns. This supports Biber, Conrad and Leech's (2002) claim that nouns are very often made up of more than one morpheme or word part.

CONCLUSION

The study has shown that complex nouns are made up of suffix, prefix and root. However, the suffix is the most commonly used word parts of the complex nouns in the MUET reading comprehension texts. This implies that teachers of MUET should focus on the use of suffixes in complex nouns in the English language classroom. In addition, prefixes and roots should also be included in the teaching of using word parts to identify the meaning of unknown words. The knowledge of roots in complex nouns is important as roots contain the core meaning of any complex words. None of the three kinds of word parts should be omitted in teaching word parts as all the three kinds of word parts work simultaneously to convey the whole meaning of a word.

Although most of the complex nouns are derived from nouns, there are some complex nouns which are derived from other lexical categories such as verb and adjective. This point should be highlighted by the teachers of MUET when explaining roots and affixes to the students. The teachers should explain that roots of complex nouns can be from the noun, verb or adjective lexical category.

As this study also reveals that the complex nouns are mainly formed in eight different ways, teachers of MUET should also be aware of these eight ways of forming complex nouns. This knowledge may be able to facilitate the teaching of complex nouns to the MUET students as the teachers can focus on the most common ways complex nouns are formed. The knowledge of the morphological processes of complex nouns may also help the teachers to have a better understanding on the complex nouns in the

MUET reading comprehension. All this knowledge may assist the teachers in teaching and explaining word parts in the classroom.

For future studies seeking to investigate further on the morphological analysis of complex English words, the following recommendations are offered. First, a study on other parts of speech, such as adjectives and adverbs, would be able to shed light on the word parts frequently used and the morphological processes they go through. Second, since this study only looked at MUET reading comprehension texts, future research could analyse texts in the International English Language Testing System (IELTS) or Cambridge English: Advanced (CAE). Future research could also focus on primary level books or children's storybooks, or other genres such as medicine, engineering and business.

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