

# MORPHOLOGICAL AWARENESS AND ITS CORRELATION WITH EFL STUDENTS' READING COMPREHENSION IN SECONDARY SCHOOL

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**Abstract:** Morphological awareness, as one of the mediators which gives impact, plays an important role in achieving successful reading comprehension. It is believed that morphological awareness contributes to enhance students' performances by analyzing the word structures. Students are required to improve their skills in manipulating and interpreting complex words presented in a text. This study then, investigates the students' level of morphological awareness and its relationship with their reading comprehension. It was carried out with a group of 55 second-grade EFL students from one of Gresik's senior high schools in East Java. The data were collected through reading comprehension test and morphological awareness test. The results indicates that students' level of morphological awareness are varied (5 students = Excellent, 21 students = Good, 18 students = Mediocre, 10 students = Poor, and 1 student = Very Poor). In addition, the results show students' morphological awareness has no link with their reading comprehension ( $p$ -value= .357, > .05).

**Keyword:** EFL, morphological awareness, reading comprehension.

## INTRODUCTION

English Foreign Language (EFL) students obtain source of information or knowledge through reading, and it is certainly crucial in the process of acquiring foreign language (Aziz *et al.*, 2019). The reasons are because texts can supply new vocabulary, inform and enhance knowledge, and encourage new ways of thinking. Students can also hone their thinking skills through collecting any information in reading. Since reading comprehension is an obligatory principle for EFL students' academic success, then, they have to practice and increase their reading skills to achieve successful reading comprehension.

For improving students' reading comprehension, learners need to actively process what they read and to have intellectual abilities as factors of affecting reading comprehension. In his book, Clarke *et al.* (2014) mention the skills involved in successful reading are microstructure, macrostructure, and linguistics. Microstructure is in which beyond vocabulary items, the reader recognizes and processes the meaning of bigger portions of text. Additionally, the macrostructure is how the reader recognizes and analyzes the text's themes, topics, and genre information. Meanwhile, for the linguistics part, the reader acknowledges and cultivates the individual words and their meanings. The activation of word meanings is the starting point for reading comprehension.

In linguistics, the structure of words and their relationships with other words is discussed in one of the branches named morphology, which is often described as a branch of grammar concerned with words (Aziz *et al.*, 2019). According to Lau *et al.* (2017), the study of word forms or morphemes, which are the smallest units of language that contain meaning, is known as morphology. In other words, morphology is a field of linguistics that studies how words are produced from morphemes (Kurdi, 2016). Morphology, in depth, classifies words into three parts (i.e. prefixes, suffixes, and root or basic words). The true morphological base of an English word is the stem or root, which is a morpheme that cannot be removed. For instance, in a word, "notes" (plural), the morpheme –s can be removed but not the morpheme note. Other than that, prefixes are morphemes that come before a stem. They neither exist independently of the root nor affect the grammatical role of the word. In another hand, suffixes are morphemes that appear following the stem. In contrast to prefixes, their role extends beyond changing the meaning of the word to changing its grammatical function.

Related to morphology, a level of awareness in making new word meanings can be called as morphological awareness. It is a cognitive skill to recognize and manipulate morphemes or word structures in order to make new word meanings (Aziz *et al.*, 2019). Morphological awareness is a fundamental component of reading proficiency since it is a cognitive talent that can assist students in improving their reading comprehension. In morphological awareness activity, learners need to comprehend and analyze the words. This activity is called morphological analysis. Morphological analysis itself contains of disassembling-reassembling process. In research by Aziz *et al.* (2019), learners are required to disassemble complicated words into morphemes via morphological awareness (for example, unwillingness = un + willing + ness) in order to acknowledge the meaning of roots and affixes (un- = a prefix that describes not, willing = ready or prepared to do something, -ness= a suffix that forms nouns from adjectives), and to reassemble the important elements into new words (unfitness, unconsciousness, ineffectiveness). This makes morphological awareness crucial in middle school students since textbooks and content-area instruction lay more demands on students' academic language at this time (Goodwin *et al.*, 2017).

Furthermore, it is worth noting that there are two essential elements of morphological awareness (Zhang, 2016), namely (a) the skill to perceive and retrieve sub-lexical morphemic information, and (b) the understanding of morphemic structures and their interactions. Simply described, morphological awareness is described as the skill to recognize and modify word forms. With the ability to manipulate the word structure, morphological awareness has the tendency to be a useful tool for learners in improving their reading comprehension (S. Hélène Deacon *et al.*, 2014; Storm Hélène Deacon *et al.*, 2018; Ke *et al.*, 2021).

Reading comprehension itself is the way of concurrently obtaining and producing meaning by way of complicity and interaction with written language (Dore *et al.*, 2018). To be clear, it refers to two-way interactivity between reader and the text. Learners, then, need to be aware of the 3 aspects of reading comprehension (macrostructure, microstructure, and linguistics) as it is helping them to grasp the written language which essential for improving their academic performances. This is because in all areas of the curriculum, learners should be able to find relevant information, detailed and general information, explicit and implied information, and choose the right information to focus on in a text.

Recently, many researchers have attempted to explore the relation between morphological awareness and students' reading comprehension. The results show there is a relationship between them. In a study carried by James *et al.* (2021) for example, morphological awareness is strongly related with students' reading comprehension. The study was conducted for young learners in north-west of England in which they had to complete the reading task and experimenter-designed production and judgment tasks to examine compound, inflection, and derivation knowledge. In further result, this study also discover that morphological awareness and vocabulary has critical contribution to the children's reading comprehension for each age group.

In another study for Japanese children, Muroya *et al.* (2017) intended to examine the link between morphological awareness and word reading skills related to Hiragana and Kanji. The research used The Word Analogy task designed by Kirby *et al.* (2012) and its Japanese version for measuring morphological awareness. Meanwhile, for students' reading skill, the test was using Hiragana Reading and Kanji Reading tasks. Furthermore, the study reports that morphological awareness was connected with word reading skills in both Hiragana and Kanji in a distinct and comparable way. It is in line with the result of study explained above. Additionally, the finding of that study reveal that morphological awareness may help with early word reading skills in both scripts, and as reading skills increase, it may appear to be more necessary for comprehending morphographic Kanji characters. To sum up, morphological awareness has been treated as a predictor of reading comprehension as it gives contribution.

Another researcher, Kim *et al.* (2020) in his study asserted that aside from directly relating to reading comprehension, compounding morphological awareness is also indirectly relating to other aspects, such

as, word reading, vocabulary, and listening comprehension. The data were measured by the compound word construction task and 2 reading comprehension tasks which adapted from Tong *et al.* (2009). After they were investigating for both direct and indirect relations of compounding morphological awareness to reading comprehension, vocabulary, word reading, and listening comprehension for 325 Mandarin-speaking learners of second grade in China, the other finding was shown to have an influence to students' reading comprehension. The study also demonstrated that their awareness of morphemes, as tested by a compound task in the current study, are crucial and play a major role in semantic processing, vocabulary, and word reading, as well as discourse-level oral language (listening comprehension), make indirect benefits to reading comprehension.

From the above reviews, the researchers have indicated a link with both students' reading comprehension and morphological awareness at various student levels even though the last study showed weak correlation. Those studies above were conducted in north-west of England, Japan, and China. Also, all the studies focus on young learners. The result might be different when it comes to different level of students, in this case, secondary students. Hence, the present study will seek and prove whether there is a relationship between the two variables through a correlational study using quantitative research among senior high school students especially in EFL context. More specifically, it seeks to answer these two research questions:

1. What are the students' levels of morphological awareness?
2. Is there any correlation between EFL students' reading comprehension and morphological awareness?

## METHOD

In terms of the study's purposes, this present study used correlational study as the quantitative research approach since the researcher want to figure out the relation between two variables which are morphological awareness and EFL students' reading comprehension. The study was conducted in one of the senior high schools in Gresik, East Java, Indonesia at secondary level. A total of 55 second-grade students participated in this research as the sample.

As instruments for data collection process, two types of tests were used: a reading comprehension test about personal letter text and a morphological awareness test. The students did the first test namely reading comprehension test was done by using online test through Google Form with their own gadgets. The link is distributed through *Whatsapp* during regular teaching and learning process in classroom. They had 1 hour to complete. The test, however, were adapted from internet and consists of 20 multiple choices questions with 4 texts in total about personal letter text.

Furthermore, weeks after the data was collected, the researcher gave students another test dealing with morphological awareness in the form of paper-based test. The test took 60 minutes to complete. For measuring students' morphological awareness, the data were collected using 2 tests from different sources. The first one was Morpheme Identification Awareness test and a Morphological Structural Awareness test (adopted from Nurhemida (2007), who adopted the test from the first edition created by McBride-Chang *et al.* (2005)). There are a total of 15 questions. The first five items are about identifying morphemes. Each question provides two pictures and two words. Students then, were required to select which picture that represent the word meaning. Meanwhile, the rest 10 questions are testing students' morphological structural awareness. Students have to manipulate the information presented in the example to answer questions in this task.

In addition, the second test, adapted from Carlisle's (2000), was Base (BMorph) and derived (DMorph) form morphology production tasks. Students read one word, followed by a sentence with a missing word. For base form (BMorph), the learners read morphologically complicated words, followed by a statement

asking learners to deconstruct the derived word form in order to produce the base form to appropriately complete the sentence. For instance, “Improvement. My teacher wants my pronunciation to (improve)”. There are 10 questions in this task. Additionally, following the presentation of a base form of a word, a sentence meant to obtain a derived version of the term is delivered. This task is for derived form (DMorph). For example, “Write. She is a good (writer)”. There are 5 questions in this part.

Nevertheless, to discover the first research question, the categories of students' morphological awareness capability are then grouped into five levels based on the results of their morphological awareness test, those are as follows: excellent (ranged 86-100), good (ranged 70-85), mediocre (ranged 56-69), poor (ranged 36-55), and very poor (ranged 0-35) based on Nur Rahim *et al.* (2021).

For acknowledging the second research question which is to determine the association between morphological awareness and EFL students' reading comprehension, the researcher first is required to do the normality test. The data collected were tested by researcher using One-Sample Kolmogorov-Smirnov to acknowledge whether the distribution is normal before calculating the correlation. The interpretation is that if the value is above 0.05 then the data distribution is declared to meet the assumption of normality. The result showed that the p value of the normality test was .200 which means the data were normally distributed. Accordingly, the Pearson Product-Moment Correlation coefficient was used. The result can be assumed that there is a correlation between two variables if the p-value is  $< 0.05$ . Otherwise, if the p-value is  $> 0.05$ , then there is no correlation between two variables. The researcher, next, formulates the following study's hypotheses:

- H0: Morphological awareness has no correlation with EFL reading comprehension.
- Ha: Morphological awareness has a correlation with EFL students' reading comprehension.

In interpreting the result, however, it can be done by determining the strength of coefficient correlation. The following table shows the degree of correlation coefficients.

*Table 1 Degree of Correlation Coefficients by Cohen et al. (2017)*

1. Interval Coefficient	2. Degree of Correlation
3. $< 0.20$	8. Very low
4. $0.20 - 0.35$	9. Low
5. $0.35 - 0.65$	10. Moderate
6. $0.65 - 0.85$	11. High
7. $> 0.85$	12. Very high

## RESULTS AND DISCUSSION

### RESULTS

#### *The Students' Levels of Morphological Awareness*

To determine the second-grade students' morphological awareness scores, the morphological awareness test was applied. The result revealed that the lower score was 33 points and the higher score was 93. Twenty six students received the scores more than 70 points, while twenty nine students got scores lower than 70 points. The morphological awareness test had a mean score of 67.73 overall.

In this further section, the researcher discovered the categories of students' level of morphological awareness varied as shown in Chart 1 below. The researcher classified the morphological awareness into 5 levels.

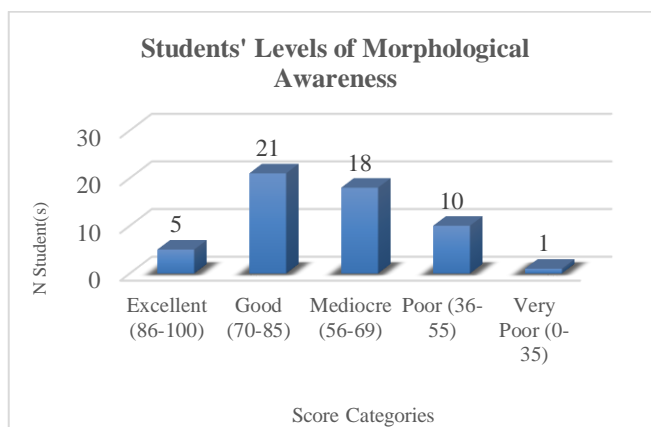


Chart 1 Levels of Students' Morphological Awareness

The result indicated only 5 students were able to reach Excellent level. This claims that those students had only few mistakes in the areas of morphological structural awareness (compounding morphemes) and derivation. Meanwhile, they 100% successfully demonstrated the areas of morpheme identification and decomposition test. The other 21 students were at Good level which means they were most likely to get the bulk of the questions right, but they still struggled with the most difficult topics such as modifying the grammar. Meanwhile, the rest of 18 students were categorized at the Mediocre level. This showed that they answered only about half of the questions correctly. The most difficult part that students faced is adding the suffix. Additionally, the remaining 11 students only had little success with the morphological awareness test. They were able to answer only few questions correctly and were classified as the Poor and Very Poor level. In sum, all students at different level were good enough in identifying morpheme in form of pictures and removing suffixes.

#### *The Correlation between EFL Students' Morphological Awareness and Their Reading Comprehension*

As this second research question was intended to explore the correlation between students' morphological awareness and their reading comprehension, the researcher examined using Pearson Product-Moment Correlation after the data were collected. The scores were obtained by students' morphological awareness and reading comprehension tests. Students' reading comprehension scores are shown in the chart 2 below.

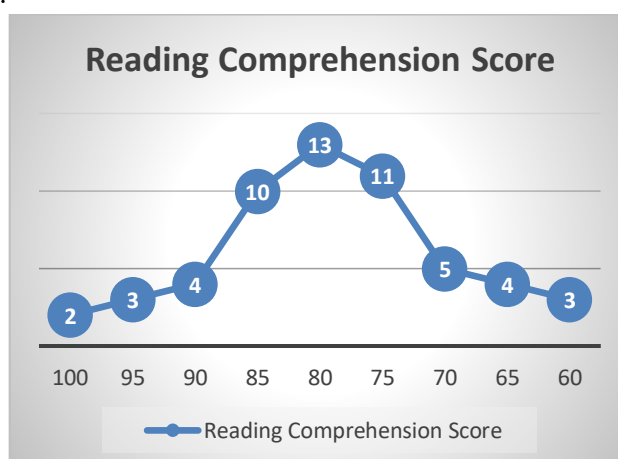


Chart 2 Students' Reading Comprehension Scores

The result showed 2 students had perfectly points with score 100, 3 students got 95 and 60 points, 4 students had 90 and 65 scores, 10 students obtained 85 points, 13 students got 80 points, 11 students had 75 scores, and 5 students obtained 70 points.

Hereafter, the results of Pearson Product-Moment Correlation are presented in the following Table 2.

*Table 2 Pearson Product-Moment Correlation*

<b>Correlations</b>		Morphological	Reading
		Awareness	Comprehension
Morphological Awareness	Pearson Correlation	1	-.127
	Sig. (2-tailed)		.357
	N	55	55
Reading Comprehension	Pearson Correlation	-.127	1
	Sig. (2-tailed)	.357	
	N	55	55

According to the table above, it revealed that the p-value was .357. This indicated that there is no correlation between those two variables since the p-value is higher than .05 (.357 > .05). In consequence, the research hypothesis was declined, while the null hypothesis was approved. This research stated that EFL students' morphological awareness has no correlation with their reading comprehension.

## DISCUSSION

### *The Students' Levels of Morphological Awareness*

The overall findings of morphological awareness test showed that learners were able to correctly complete the bulk of the items. Thus, they were ranked at Mediocre level overall, with a mean score of 67.73. In general, EFL second-grade students demonstrated a fairly good comprehension of how to figure out the meaning of a new word and a moderately good skill to examine word structure (for example, prefixes, root words, and suffixes). The morphological awareness test itself were divided into 4 tasks, which are morpheme identification, morphological structure, derivation, and decomposition.

In the morpheme identification task, most of the students were really good at selecting the intended morphemes. Specifically, students who categorized at Excellent level had answered all the questions correctly. This indicates that learners were able to decide the meaning of intended morpheme in form of pictures (i.e. they understood basic words and how to employ morphemes to infer meaning). The finding was accordant with the prior research which carried by McBride-Chang *et al.* (2005) and Nurhemida (2007). In their studies, students did exceptionally well in selecting single target image as the picture that best fit the morpheme's interpretation in question. Students who ranked at Good, Mediocre, and Poor level, however, had a little difficulty in identifying the certain picture that shows the intended morpheme or phrase. Furthermore, one student who was placed at Very Poor level had most of the answer wrong. It demonstrates that the student had less awareness in recognizing the intended morpheme in the pictures given. Most of them found it hard dealing with item 5, they were unable to show which picture contains the meaning of light in lighthouse.

Besides, there were no students got a perfect score related to the morphological structure part. In this task, students were required to have skill for creating compound, inflected, and derived words (McBride-Chang *et al.*, 2005; Nurhemida, 2007). Particularly, students categorized as Excellent, Good, and Mediocre level had few wrong answers. It denotes that they quite know how to change the tenses based on the sentences given since morphological awareness are related to the knowledge of changing word structure (Aziz *et al.*, 2019; Zhang, 2016). Additionally, students at Poor and Very Poor level gave different output. Most of them cannot answer half of the items correctly. They faced challenges regarding with modifying the morphemes into good grammar. In other words, it shows that students had less of morphological awareness since morphology itself is related to the grammar rules (Aziz *et al.*, 2019; Kurdi, 2016; Lau *et al.*, 2017). As proof, they were lack of knowledge in using -ed and -ing

suffixes as past and present participle markers. They appear to be having difficulty in applying –ed suffix to create fleamped from fleamp (item 8).

For the next part, derivation task also presents various findings. Precisely, students placed at Excellent and Good level faced little difficulty since they had few wrong answers regarding adding appropriate suffix. This shows that they had good awareness of derivational morphemes or better at employing linguistic information to generate new meanings (Nurhemida, 2007). Moreover, there are also students who found it hard to do due to their lack of morphological analysis or word-learning strategy (Priskinanda *et al.*, 2021). This happened to students who ranked at Mediocre, Poor, and Very Poor level. For example, when the word warm has to have a morpheme added to fit the sentence “he chose the jacket for its \_\_\_\_”. Most of them wrote warmer for the answer instead of warmth (for the correct answer).

The last part of the morphological awareness test is decomposition task. Overall, students who were categorized as Excellent, Good, Mediocre, and Poor level performed better in this part since most of them discovered all of the items correctly. They were proficient in removing morpheme, such as in sentence “Agreeable. With that statement I could not \_\_\_\_” they require to remove suffix –able. This indicates that they were able to elaborate the derived word form in order to obtain the base form. Unlike students at other levels who can still do the decomposition task, student at the Very Poor level have 3 wrong answers out of 5 items. It can be assumed that this student had difficulty in decomposing derivational target words to identify the root morpheme. This lowest point indicated how the student did not yet have qualified morphological awareness, which is expected to master the disassembling-reassembling process (Aziz *et al.*, 2019; Priskinanda *et al.*, 2021).

#### *The Correlation between EFL Students' Morphological Awareness and Their Reading Comprehension*

The result of this study reported that EFL students' morphological awareness and their reading comprehension had no association. The finding of this present study was contradictory with a researcher conducted by Aziz *et al.* (2019), which revealed that morphological awareness and students' reading comprehension are correlated to each other. This difference could happen due to the different condition of the subjects, including the material given and several possible reasons.

This possibility may occur due to the absence of impact in students' morphological awareness to their reading comprehension or vice versa. There may be other indicators which affect either in students' morphological awareness or successful reading comprehension. Those predictors can be vocabulary (Ke & Koda, 2019; Nur Rahim *et al.*, 2021), word reading (Kim *et al.*, 2020; Qiao *et al.*, 2021; Vaughn *et al.*, 2019), and reading strategy (Kung, 2019; Muijselaar *et al.*, 2017; Zare, 2013).

Vocabulary, for instance, can be enhanced by employing morphological awareness. Several previous studies (Ke & Koda, 2019; Nur Rahim *et al.*, 2021) stated that obviously students' morphological awareness is highly related to their vocabulary knowledge. They claimed that morphological awareness may assist to the vocabulary knowledge and become an alternate tool for interpreting the meaning of unknown word during the lesson. The results are also in line with the study carried by McBride-Chang *et al.* (2005) which morphological awareness, particularly vocabulary knowledge, is an excellent predictor of learners' language skills. Morphological awareness has the potential to broaden children's vocabularies (Qiao *et al.*, 2021). Hence, it points out that morphological awareness gives its impact in students' vocabulary development instead of successful reading comprehension.

Furthermore, the learning of reading process in school does not focus only on students' morphological awareness. Despite, it also focused in other factor such as word reading skill. Finding from study carried by Qiao *et al.* (2021) has declared that word reading, as a better mediator, can support morphological awareness on their reading comprehension. This is similar to earlier empirical findings that reading comprehension has a stronger indicator namely word reading (S. Hélène Deacon *et al.*, 2014; Florit & Cain, 2011; Kim *et al.*, 2020). As a result, expanding word reading would improve the "dimension" of the reading comprehension output (Vaughn *et al.*, 2019).

In addition, a variety of cognitive processes influence reading comprehension (Muijselaar *et al.*, 2017). According to Kung (2019), the function of strategy use in efficient reading comprehension has been recognized as a crucial component for learners. The finding to what he has found in his research that reading strategies (metacognitive and cognitive) training is critical for learners' reading proficiency. In other words, these techniques can then be used to assist and increase students' comprehension of a reading material. The result also supported by prior studies that reading comprehension and reading strategies had moderate to significant connections (Muijselaar *et al.*, 2017) and strong positive relation (Zare, 2013).

## CONCLUSION

This present study has purposes to discover the students' levels of morphological awareness and investigate whether students' morphological awareness correlates to their reading comprehension. Based on the results, the levels of students' morphological awareness are varied. The level of students' morphological awareness test mostly belongs to Mediocre level. This study found out that some students still lack of insight and ability to analyze the word structures. Hence, educators who are responsible for improving students' reading comprehension are required to design the appropriate learning plan and model to make students comprehend the meaning of a text. This is needed since the study found out that there are some of students that had lower score in understanding morphology.

Furthermore, this present study declared students' morphological awareness and their reading comprehension in secondary school has no association. It can be inferred that second-grade students' morphological awareness has no effect on students' reading comprehension or vice versa. The reasons are likely because there are other indicators which are able to influence morphological awareness or reading comprehension.

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