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Morphological Awareness Instruction for ESL Students' Vocabulary Development and Reading Comprehension

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Abstract

This article aimed to investigate the ESL Senior High School student's perception of Morphological Awareness Instruction and the students' vocabulary and the significant differences of students who are trained using Morphological Awareness Instruction to enhance their reading comprehension. Two research questions were formulated, namely: First, how are the ESL Senior High School students' understanding of the application of morphological awareness instruction to enhance their vocabulary and reading comprehension. Secondly, what are the differences of students who are trained using Morphological Awareness Instruction to enhance their vocabulary and reading comprehension with those who are not? To answer these questions, an experimental research method was implemented. The research sample consisted of 60 students of a Senior High School in Pleret, Bantul, Yogyakarta, who were selected using two phases of random sampling. The data set of questionnaires and tests were used to collect the data. The independent sample t-test was used to analyze the data. The results showed that the Morphological Awareness Instruction significantly improved students' vocabulary skills and their reading comprehension.

Keywords: *ESL, morphological strategy, vocabulary development, reading comprehension*

INTRODUCTION

Learning vocabulary is a basic skill needed to be mastered to speak and write well in a language. The same is true, that learning English also concerns reading comprehension. However, students' vocabulary mastery and reading comprehension cannot be developed without some morphological teaching strategies. That means, to enrich the students' vocabulary and reading skills is to deal with the morphological exploration of effective strategies. Soifer (2005) argued that morphology is an essential issue for successful vocabulary development and correct decoding. In-depth, morphology generally divides words into prefixes and suffixes and roots or basic words. Knowing that words linked by meaning are related by spelling is crucial to the development of students' vocabulary (Stowe, 2019). Therefore, this study aims mainly to deepen

the important strategies of teaching morphology to enrich the ESL senior high school students' vocabulary development and reading comprehension.

Another rationale why this study is worthy of pursuing was the limited studies on the strategies in teaching morphology for enriching the Senior High Schools students' vocabulary and reading comprehension. It is good to present here some of the current studies from 2016 to 2020 to indicate some suggestions to be responded to. To mention a few, the researchers take only four current studies that have a strong connection to this study. The first study was conducted by (Stowe, 2019). In this study, he found that the results of the Virginia high-level assessment indicated "a weakness in vocabulary development for all Virginia students, thus suggesting a need to provide more intensive vocabulary instruction with direct instruction in morphology". Then, (Hendrix, & Griffin, 2017) in their study, concluded that more attention should be paid to the need for improving morphological awareness as a foundation for the development of vocabulary skills of secondary students. The next study is made by (Elleman, Oslund, Griffin, & Myers, 2019). After reviewing secondary school studies, they make five recommendations based on the literature: (a) intentionally teach vocabulary, (b) teach independent word-learning strategies (morphological analysis), (c) focus on developing semantic networks, (d) increase opportunities for new words to be used in discussion and writing, and (e) provide a motivating and language-rich learning environment. Finally, (Gellert, Arnbak, Wischmann, & Elbro, 2020) concluded that students with limited knowledge of vocabulary are at high risk of reading comprehension difficulties.

Previous studies emphasized the same aspects of morphological awareness as crucial in teaching morphology for the enhancement of students' English vocabulary and reading comprehension. As a response, this research study also aims to develop a more positive morphological attitude among students in terms of learning vocabulary and reading comprehension, especially at the Senior High School level. To achieve these aims, the problems of this research study are formulated as follows: (1) How are the ESL Senior High School students' understanding of the application of morphological awareness instruction to enhance their vocabulary and reading comprehension? (2) What are the differences of students who are trained using Morphological Awareness Instruction to enhance their vocabulary and reading comprehension with those who are not?

Next, to make this paper theoretically sound and easier to follow, below are other relevant previous studies and literature review to cover.

1. Morphology

The word *morphology* is derived from the term morph which means 'form' and logy which implies 'science.' Literally, the word morphology means 'science of form' (Chaer, 2003). According to Yule (2006), "morphology is the study of forms." In linguistics, morphology is defined as one of the branches of linguistics that examines morphs and words (Baryadi, 2011). Morphology works in various ways, where with learner can manipulate the parts of words to create new meanings, for example. In addition, the term *morphology* consists of "morph" in which the meaning is shaped, and "ology" in which the meaning is research. Morphology operates in so many ways, with students modifying sections of words to produce new meanings or changing the interpretations. Morphology is scientific linguistics that offers an interpretation of the linguistics process of how words are formed and how many words are made. According to Henry (2003), morphology concerns "the segmentation of words into affixes and roots or base words".

Another opinion came from Wilson (2005), direct morphology guidance is an efficient way of recognizing and applying the word structure to the study of decoding, pronunciation, and vocabulary. In particular, techniques for segmenting or manipulating words according to their affixes and origins can be taught to students. Carreker (2005) added as a consequence, by simply recognizing the affixes and the remaining basic word or root word, students may recognize an unknown word.

Morphology means the study of the sections of the word, and this relates to the ability to identify the existence of morphs in words. According to Booij (2012), morphology is the study of the internal structure of words, the forms of lexemes, and how lexemes are created.

2. Instructional Strategies in Morphology

Prince (2009) proposed four major instructional strategies in teaching morphology. It can be taught as a different element of a vocabulary enrichment agenda in the upper elementary level. When identifying morphemes in words, students may do the following: Recognize that they do not know the word; analyze the word for widely recognized morphs, think of a part of speech based on the parts of the words, and check the meaning of the words against the context. Besides, the students need to recognize how prefixes, suffixes, and roots are used and how words are changed and the students with knowledge of Spanish can use synonyms, and words of common culture.

The students who know how words are formed by combining prefixes, suffixes, and roots tend to have a greater vocabulary and "better reading comprehension than peers and without knowledge and skills" (Prince, 2009). Nagy (2007) said that teaching morphological awareness and decoding could narrow the gap of achievement for students "whose families differ in educational and income levels, and ethnic or racial backgrounds".

3.Reading Comprehension

The first definition of reading comprehension was "reading as a communication process by which a message is graphically transmitted between individuals" (Kingston, 1968, p. 72). In addition, Alyousef (2016) stated that reading can be seen as an interactive process between the reader and the text for automatic reading or fluency.

4. ESL Students

Second language learning is a deliberate process in which the learning of a language other than the first language takes place. The process must take place after the first language has been learned. So, second language learning may also be applied to the third, fourth, or fifth language that the students are currently learning. Learning styles refer to differences in how a person learns based on interests, strengths, and weaknesses. The individual's learning style has a huge effect on learning approach choices.

English second language learners apply to students who are not already English speakers and still improving their English language skills. English second language students are referred to both related to the classes and the standard subject area classes in which they are incorporated. English language learners are a widely recognized term for English speaking learners in the K-12 sense, as well as for adult non-native English speakers in the learning process.

METHOD

1. Research Design

The researchers used an experimental testing method to conduct the analysis. The research design was a pre-tested, non-equivalent group design. The experimental language group and the experimental reading group received extensive attention through the Morphological Information Instruction.

1.2 Population and Sample

The participants of this research were 10th-grade students of SMA 1 Pleret Bantul 2016/2017. There was a total of 60 students in two schools. 30 students were chosen using one phase of random sampling and split into 2 classes.

1.3 Teaching Procedure

In this sample, the therapy procedures were as follows: the researcher divided the students into three groups consisting of the experimental and control group. The first pre-test was given to all classes. During therapy, the researcher used morphological recognition teaching strategies for the experimental vocabulary group and the experimental reading group, while the researcher did not have any treatment for the control group. The last post-test was issued to the three grades.

1.4 Experimental Group 1- Vocabulary

1. Pre-Activities

The tutor checked the last session, then repeated the vocabulary and the dialog learned yesterday using flashcards and textbooks. Before starting an activity, teaching materials, or reading a story in class, pre-teaching vocabulary is often useful, particularly for English-speaking learners. This will give them a chance to understand words and then place them in perspective and remember them. We may use English as a second-language vocabulary pre-teaching tool such as:

- The role-playing or pantomiming
- Using the gesture
- Showing the actual objects
- Pointing to the images
- Make short sketches on the board
- Using the Indonesian version and then asking students to say those words in English.

2. Whilst Activities

The teacher gave and taught new vocabulary to students. The teacher told students to identify the words morphologically, and then the students had a discussion until they had done it on their own.

3. Post Activities

Teachers have closed their teaching and learning programs.

Experimental Group 2- Reading

1. Pre-Activities

The teachers asked them pre-reading questions in order to develop background awareness of the meaning, and then told them the subject of today's reading text and lessons.

2. Whilst Activities

a. The teacher told the students the text and encouraged them to use their context information to infer what the text was all about.
b. After testing the students' interpretation, the teacher-directed them to read the text aloud. Then they read the text by themselves.
c. The teacher told the students that the teacher was going to study the emphasis of the grammar before describing the text in depth (morphology).
d. The teacher circulated the workbooks, and then the teacher used the illustration on the workbook to give a demonstration and directed the students to do the exercise.

3. Post Activities

The teacher outlined the text of the reading. The instructor re-states the rules of the emphasis of grammar

2. Instrument

The data was obtained through assessments and questionnaires. Tests were used to evaluate students' knowledge of the language and awareness of reading before and after therapy. Tests were also performed to see a substantial gap between pupil mastery of vocabulary and reading comprehension in experimental and control classes. In the analysis, a morphological knowledge task included word recognition, word analogy, and morphological identification test. These morphological awareness tests were adapted from Chang, Wagner, Muse, Chow, and Shu (2005). To collect data for reading comprehension, the writer also used the test. The total number of tests was 40 multiple-choice questions.

Questionnaires were offered to students to learn about their impressions of the use of morphological knowledge training to develop their vocabulary and reading comprehension abilities. There were three general questions after the students completed their reading assignments and understanding of the learners' interpretations of exercises and their vocabulary learning, additional questions are included to the conclusion of each lesson (Vocabulary Level Test, Morpheme Recognition and Morphological Structure Understanding Test) and more general questions were posed after completing all the tasks.

3. Data Analysis

Measurement of the vocabulary level was summarized by mean frequency and standard deviation between the three main stages (2000, 3000, and 5000). In order to achieve the cumulative scores of the three levels, the scores received were applied. To illustrate the variations in vocabulary knowledge utilized by each group, the combined outcomes of all participants and different results of each group (experimental and control groups) were compared. The findings of morphological knowledge evaluation also evaluated for the mean for all sections (Morpheme Recognition and Morphological Structure) and the category as a whole. The student scores were calculated by calculating the correct answer to the study of reading comprehension results. One correct answer has been scored 1. The outcomes of the student's reading comprehension were taken from the number of correct responses grouped into the total number of assessments and multiplied by 100. Independent group t-tests were performed to see if the group's mean differences were significant.

FINDINGS AND DISCUSSION

1. Normality and Homogeneity of the Data

The study results were analyzed using normality and homogeneity tests prior to statistical analysis of the data. The Shapiro-Wilk test was used to evaluate normality and the Levene test was used to achieve homogeneity.

Table 1. Result of Normality and Homogeneity Analysis

Group		Pretest			Posttest		
		Statistic	Df	Sig.	Statistic	df	Sig.
Vocabulary	1 (Control)	.939	20	.228	.967	20	.700
	2 (Experimental)	.979	20	.918	.928	20	.143
Reading	1 (Control)	.950	20	.371	.958	20	.497
	2 (Experimental)	.962	20	.587	.962	20	.577

Type of Test	Levene Test for Equality of Variances	
	Levene Statistic	Significance
Vocabulary Pretest	1.184	0.283
Vocabulary Posttest	9.497	0.003
Reading Pretest	0.445	0.509
Reading Posttest	1.291	0.263

As shown in Table 1, all the p-values of the normality and homogeneity tests exceeded 0.05, it can be assumed that the results were both regular and homogeneous.

2. Descriptive Statistics

2.1 Vocabulary Test

There were 115 questions in the vocabulary test, which were split into two sections. The first part was 90 vocabulary level tests (2000-, 3000-, and 5000-word level tests), the second part was 25 morphological knowledge tests. The highest score for the control group pretest was 75.4; the lowest score was 17.7; the mean was 54.5. The highest score in the post-test was 79.9; the lowest was 23.5; the average was 57.8. In the experimental category, the highest score was 77.8; the lowest score was 35.6; the mean was 59. The highest score in the post-test was 97.2; the lowest score was 78.1; the average was 87. The full details of the student vocabulary pre and post-test scores are displayed in the appendix. Table 7 displays the distribution of student scores in control and experimental classes.

Table 2. The Score Distribution of Students' Vocabulary Tests in the Control and Experimental Groups

Score Interval	Category	Experimental Group				Control Group			
		Pretest		Posttest		Pretest		Posttest	
		F	%	F	%	F	%	F	%
80-100	A	0	0.0	16	80.0	0	0.0	1	5.0
70-79	B	4	20.0	4	20.0	3	15.0	3	15.0
56-69	C	9	45.0	0	0.0	8	40.0	7	35.0
<55	D	7	35.0	0	0.0	9	45.0	9	45.0

Table 3. The Mean Posttest Score of Student' Vocabulary Test in the Control and Experimental Groups

Group	Vocabulary Test				
	Level 2000	Level 3000	Level 5000	MA Test	MST Test
Control	13(43,6)	12(40,7)	6(21,0)	5(96,0)	13(66,0)
Experimental	27(91,3)	26(87,2)	22(73,7)	5(100)	16(79,3)

In Table 2, the results showed that there was no student (0 percent) in the pre-test at the score interval of 80-100. There were 4 students (20.0 percent) in the 70-79 score interval, 9 students (45 percent) in the 56-69 score interval, and 7 students (35.0 percent) who were below 55, which means 16 students failed. In the post-test, the student vocabulary score improved. There were 16 students (16.0 percent) with a score of >80. One student scored the highest score with a score of 97.2. There were 4 students (20 percent) in the 70-79 performance interval, and there was no student with a score below 70.

While the highest score in the control group was 75.4, the lowest was 17.7, and the average was 54.5. The highest score in the post-test was 79.9, the lowest was 23.5, and the average was 57.8. Table 7 also reveals that there was no student (0 percent) in the pre-test and post-test control group who scored >80. In the pre-test period, 3 students (15.0 percent) scored between 70 and 79, 8 students (40.0 percent) scored between 56 and 69 and 9 students (45 percent) scored below 55.

In the post-test, 1 student (5.0 per cent) scored >80. In the 70-79 score interval, 3 students (15.0 percent) and 16 students (80 percent) scored below 70 and were still unsuccessful. The outcome was also counted for any aspect of it. The mean post-test scores for each element of the experimental group were higher than the control group. Table 3 indicates the student average scores in the control and experimental category post-test.

2.2 Reading Comprehension Test

There were 40 questions about the reading comprehension test. The highest score of the group pretest was 70; the lowest score was 32.5; the mean was 51.9. The highest score in the post-test was 72.5; the lowest was 35; the average was 56.1. In the experimental group pre-test, the highest score was 70 too; the lowest was 27.5; the mean was 51.5. The highest score in the post-test was 90; the lowest was 50; the average was 71.9. It indicates that the mean post-test score for the experimental group was higher than the control group. Table 5 demonstrates the distribution of student scores in control and experimental classes.

Table 4. The Score Distribution of Students' Reading Comprehension Test in the Control and Experimental Groups

Score	Category	Experimental Group				Control Group			
		Pretest		Posttest		Pretest		Posttest	
Interval		F	%	F	%	F	%	F	%
80-100	A	1	5.0	4	20.0	0	0.0	0	0.0
70-79	B	1	5.0	7	35.0	2	1010	4	20.0
56-69	C	5	25.0	8	40.0	6	30.0	7	35.0
<55	D	13	65.0	1	5.0	12	60.0	9	45.0

In Table 4, the results showed that there was only 1 student (5.0 percent) in the 80-100 score interval and also 1 student (5.0 percent) in the 70-79 score interval, 5 students (25.0 percent) in the 56-69 score interval, and 13 students (35.0 percent) in the 55-score interval. This means that students' reading understanding was very poor.

In the post-test, the student reading comprehension score was improved. There were 4 students (20.0 percent) with a score of >80. One student had the highest score of 90. In the 70-79

score interval, there were 7 students (35%), 8 students scored >60, and only 1 student scored below 55. It shows the growing importance of the student score after treatment.

On the other hand, the results of the control group pre-test showed that there was no student (0.0 percent) in the pre-test and post-test control group who scored >80. In the pre-test period, 2 students (10.0 percent) scored between 70 and 79, 6 students (30.0 percent) scored between 56 and 69, and 12 students (60.0 percent) scored below 55. The scores also reflect the lack of student awareness of reading.

In the post-test, there was no student (0.0.0 percent) with a score of >80. Students in the 70-79 performance range were 4 students (20.0 percent) and 16 students (80 percent) scored below 70. This finding means that most student grades do not vary between pre-test and post-test scores. Almost all students have already struggled.

2.3 t-Test Analysis

The results of the independent sample t-test of students' reading comprehension in the experimental and control groups were presented in Table 5. The mean vocabulary mastery score for the control group was 57.8 and 86.6 for the experimental group was. As a result, there were 28.945 differences in the mean of both groups. The significance level of students' reading comprehension was 0.00. This result indicated that there was a significant difference in students' vocabulary mastery because the level of significance was lower than alpha (0.05).

Table 5. The Result of Independent Sample t-test of Students' Vocabulary Mastery and Reading Comprehension in the Control and Experimental Groups

	Group	Mean score of posttest	Mean Difference	Std. Deviation	Sig (2-tailed)
Vocabulary	Control	57.835	28.9450	14.4749	.000
	Experimental	86.780		6.2450	
Reading	Control	56.125	15.8000	11.7673	.000
	Experimental	71.925		10.0332	

The same approach was used to measure the impact of the student reading comprehension independent community t-test. As a result, the average student reading understanding score for the experimental group was 56.1 and 71.9 for the control group. There were 15.80 gaps in the middle of these classes.

Based on the findings provided in Table 5, the student reading comprehension score was 0.000. This indicates that there was a substantial difference between student reading comprehension in the control and experimental community. Overall, there were substantial variations in student vocabulary mastery and reading comprehension in both groups; however, vocabulary scores and reading comprehension were higher in the experimental group than in the control group.

2.4 Students' Perceptions

Questionnaires were administered to help learn about students' understanding of the application of morphological awareness instruction to enhance students' vocabulary and reading comprehension. To judge students' perception of morphological knowledge, two questions were asked about 1). The level of difficulty of the two forms of exams, and 2). They choose one of the

two styles. These experiences provide insight into the relative difficulties of both forms of morphological knowledge. More than three participants found the Morpheme Identification Test to be neither difficult nor straightforward. In addition, approximately 3% more students considered this assignment to be simple compared to students who found it a challenging exam. On the other hand, approximately 39% of students felt that the morphological structure test was tough. Approximately 65 percent of students have chosen the Morpheme Recognition test for the Morphological Structure test. These findings are consistent with the maximum effect shown in the results of the Morpheme Recognition Test. In the study of the students' understanding of the use of morphological knowledge instruction to improve their reading comprehension, the author administered the questionnaire consisted of three questions with close and open-ended answers. Questions presented by students whether or not morphological knowledge Instruction technique would boost their reading comprehension; whether or not the students would like to learn English with the Morphological Awareness technique; and the students' view on the benefits and limitations of the morphological awareness training technique used in the classroom.

Students may have replied yes or no. Both students said that this technique could improve their understanding of reading and they would like to learn English using this technique. In total, there were three reasons given by the students. They were there; 1). Morphological Recognition Instruction strategy makes it easy for students to understand the meaning of new words; 2). It was simpler for students to get a basic understanding of a paragraph, and 3). It was easier for students to read a text that contained complicated words. However, according to the student opinion, this strategy still has some drawbacks, such as; 1). It took time for the words to be organized orderly/morphologically; 2). It took longer than the English school hours (2x45 minutes) to learn morphological knowledge instruction, and 3). The material, particularly when learning to read, should suit the learning context.

2.5 Interpretations

Drew from the analysis and findings, there was a major difference in vocabulary mastery between students who were trained using Morphological Awareness Instruction and those who weren't. In the study group, student grades following therapy were found to be higher than student scores in the control group. This outcome was comparable to several types of research that found major variations in the size and growth of student vocabulary when students were taught using the Morphological Awareness Instruction (Anglin, Miller, & Wakefield, 1993; Nurhemida, 2007; Al Farsi, 2008).

One way to investigate the effects of morphological structure on the word of reading is to compare the performance of a set of words that differ on the characteristics that could affect the awareness of the structure (Carisle, 2000). Furthermore, between the student pre-test and post-test control scores and the experimental population, there were strong differences. As Carlisle (1995) had previously demonstrated, the mean differences showed that morphological knowledge training was very beneficial for learners to improve their vocabulary skills, that morphological understanding can be used as a problem-solving tool that can be used to recognize a wide number of derived words. Morphological understanding is also essential to the creation of independent vocabulary learning strategies for children. Morphological comprehension is also important for the development of individual vocabulary learning techniques for children. In addition, Morphological knowledge was already found to facilitate the recognition of word skills in both children and adults with or without reading problems (Katz, 2004).

In coping with student reading comprehension, this research also showed that there was a major gap between students who were taught using morphological information and those who

were not. This observation was consistent with the previous associated research that morphological information by encouraging the process of breaking down morphologically complex words could contribute to comprehension, which would gradually increase vocabulary size. This means that students apply their morphological skills to break down abstract words into meaningful morphs while meeting morphologically complex terms in the text as a way to better understand the context of the expression (Wagner, Muse, & Tannenbaum, 2006).

We can tell from the findings of the questionnaire that the students had a successful experience of using teaching methods for morphological knowledge. The students agreed that their vocabulary and text interpretation would be enhanced by this approach. Although the result showed that post-test scores in the control group were also significantly improved, post-test student scores in the experimental group were significantly improved relative to the control group after treatment. Although the outcome revealed that post-test scores were also significantly better in the control group, post-test student scores in the study group were significantly improved in comparison to the post-treatment control group. This improvement can be due to the efficacy of the procedure and, in line with R. Curinga's previous studies (2014) which found that morphological information contributed greatly to improving the students' English vocabulary and reading comprehension.

CONCLUSION

Based on the results of the study, analysis, and evaluation, some conclusions may be made: First, between the students who were taught the Morphological Knowledge Lesson and those who were not, there was a large difference in vocabulary mastery. Second, there was a significant gap for students who were instructed using the Morphological Knowledge Instruction in reading comprehension relative to those who were not. In total, compared to those that were not, the use of the Morphological Information Instruction has significantly improved pupil reading comprehension.

In order to illustrate their perceptions of the use of the Morphological Awareness Guidance in vocabulary learning and reading, the students then gave separate responses. They said that it was useful to use the MAI technique to develop their vocabulary and interpretation of the text or paragraph. The students have said that it would be better for them to find the meaning of new words with the Morphological Awareness Instruction technique, get the key idea of a paragraph, and read any of the texts containing challenging words. Although they also noticed that it takes a bit longer to morphologically arrange those words in order to get the right meaning.

As an implication, there are guidelines for English teachers, students, and prospective scholars interested in conducting related studies based on the findings. Morphological Knowledge Training may be an alternative form of teaching vocabulary and reading for English teachers.

To help them attain the highest accomplishment, students can have a great way to improve their analog skills. The contribution of this approach to a better learning environment is also advocated for pupils. Students can enrich their vocabulary and get a deeper knowledge of reading since this approach allows them the chance to use their talents and techniques for reading.

Lastly, for researchers who plan to perform related studies, a preliminary analysis of the target sample is advised. The substance needs to be at the sample level. Specifically, for teaching reading, the text/material should be the subject for each conference. It is also advised to research at other student levels to know the feasibility of this method at different student levels.

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