



# ENHANCING VOCABULARY THROUGH FRAYER MODEL

**Deriantami Riksadianti**

Institut Pendidikan Indonesia,  
Garut, West Java, Indonesia

Email:

[riksadiantami@gmail.com](mailto:riksadiantami@gmail.com)

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## Abstract

The researcher found that high school students have problem in mastering and remembering the English words which they find in text. This research was carried out to find the significant effect of Frayer Model in enhancing students' vocabulary. The research was taken place in one of private Vocational High School in Garut and it was participated by second grade students. The research employed quantitative methodology by using quasi experimental design. The instrument of the research was test; pretest and post-test. The purposive sampling was used. There were 42 students who participated in the study that was consisted of two groups; experimental with 22 students and control group with 20 students. Prior treatment, a pretest was administered to find out the overview of students' vocabulary. During the treatment, participants in experimental group were exposed to use Frayer model and in control group they used conventional method; translating word using dictionary and illustration. After the treatment, post-test was administered to see the improvement gained by the participant. The data obtained from pretest and post-test were analyzed by statistical analysis; SPSS 16.00 and manual calculation. Then, the data were analyzed by using parametric test, t test. The result of the research showed the improvement of experimental group's post-test mean score that was 80. It was bigger than their pretest mean score that was 42.82. It is also supported by the mean gain score of experimental group that got 0.54. Therefore, there was significant effect on students' vocabulary by using Frayer Model.

## Keywords:

*Vocabulary, Frayer Model*

## INTRODUCTION

One of the first things to be had by the students in learning English is vocabulary. Vocabulary is a basic foundation of one's English ability. Someone cannot speak English fluently, cannot understand the messages from reading and listening as well as cannot express their ideas and thoughts on writing if they do not have a lot of vocabulary. Mofareh (2015) argues that the vocabulary knowledge is often viewed as critical tool for second language learners because a limited vocabulary in a second language impedes successful communication.

The phenomenon shows that sometimes learners face the problems in learning English, one of them is in comprehending the text; they cannot gain the information from text successfully because they do not master the words in the text. In other hand, Moghadam et al. (2012) state vocabulary knowledge is fundamental in reading comprehension because it functions as identical as background knowledge in reading comprehension. Nation (2015) points out the more words that are understood, the better text is comprehended. In addition, Conderman et al. (2013) state vocabulary and reading comprehension are closely connected. It means vocabulary mastery plays importance role in reading and its strength toward comprehending the text.

By looking statement above, there is one method namely Frayer Model. This is one strategy that is used to teach and improve vocabulary. Lopez, Cummins (2009) states the Frayer Model is a strategy that actively engages students in analyzing a word beyond the parameters of a definition. Students use a four-square graphic organizer by identifying definition, essential characteristics and choosing example and non-example to represent the word or concept. In addition, Kartalmis et al. (2017) point out the target of this model is to develop an understanding on the target vocabulary and to make memorizing easier by making personal connections with the illustrations.

To avoid misunderstanding and misinterpretation of terms in the research, the researcher gives a brief definition of the following terms. According to Neuman and Dwyer (2009) vocabulary can be defined as the words we must know to communicate effectively: words in speaking (expressive vocabulary) and words in listening (receptive vocabulary). Furthermore, Ansarin et al. (2012) argued that vocabulary is the group of words that a person or a group of people knows how to use. In addition, according to Wanjiru (2015) Frayer Model is a graphic organizer that is used by students to organize their thinking about a term in four ways; definition, characteristics, examples or synonyms and non-examples or antonyms.

Frayer Model was developed by Dorothy Frayer together with her colleagues at the University of Wisconsin USA. This graphic organizer aids students in learning precise meanings of key concepts. This exceptional teaching strategy is widely popular and a staple in most classrooms. The Frayer model (Frayer, Federick and Klausmeier) is the strategy in which students use the graphic organizer as a means to clarify their understanding of a concept from others they may know or may be learning. In addition, according to Estacio, Martinez (2017) Frayer model is a visual graphic organizer that helps students select and organize information related to a key concept. In other words, Frayer model is an effective strategy to enrich vocabulary knowledge and concept in some contexts.

Initially, this strategy should be presented via explicit modeling and think-aloud by the teacher. However, once students understand the four attributes being analyzed in the modeled lessons, the strategy can be used independently or in small groups. The steps are:

1. Draw the Frayer Model graphic organizer on the board, pass out individual copies or have students create their own-a rectangle divided into four equal sections with a large oval or diamond in the middle
2. Label the four sections left to-right and top-to-bottom: Definition, Characteristics, Examples or Synonyms and Non-examples or Antonyms.
3. Pronounce the word to be studied, and write it in the middle section of the graphic organizer.
4. Conduct a quick general discussion of the word, and then work collaboratively with students to come up with a general, student-friendly definition of the word.
5. Analyze alone or with students, or have them analyze, the word from the three perspectives.
6. Have students record their responses in the appropriate boxes as they work through each area of analysis. Be sure to always have students share the relationsaes for their responses.
7. Have students revisit and revise the initial student-friendly definition as needed.
8. Have students take turns using the new word in appropriate context.
9. Consider including a section on the chart for students to provide an illustration of the target word as in the vocabulary cards strategy.

The researcher uses all the steps for implementing Frayer Model to students in classroom activity with a difference in the first and second steps; the researcher draws the chart on whiteboard and also passes out individual copies that have divided into four equal sections with a large oval or diamond in the middle that is written a word. The researcher does every step for every vocabulary that has been listed and taken out from text in English textbook that is used in the school. For detail, here are the steps of Frayer Model procedure that will be employed in the first meeting;

1. Giving the copies of Frayer Model,
2. Drawing the Frayer Model on whiteboard,
3. Explaining about Frayer Model
4. Explaining each box that have labeled in the inside of Frayer Model,
5. Pronouncing the words in the middle,
6. Asking the students to finding out the meaning of the words by dictionary,
7. Stimulating the students to think and completing each box by questioning them,
8. Making the general discussion among the students in analyzing the words and in completing Frayer Model,
9. In the end of meetings, the activity is questioning the students to recall their minds about the materials.

In the next meetings, the third and fourth steps did not do anymore. In every meeting, the instructor also keeps guiding and controlling the students' discussion in completing Frayer Model.

In hence, the research is mainly aimed at: Finding out the significant effect of using Frayer Model in enhancing students' vocabulary at the second-grade students.

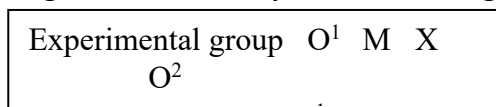
## **METHODOLOGY**

Methodology of the research is a strategy used to implement the aim of the research. It contains a systematic plan for conducting the research. As mentioned before, the aim of the research is to specify the goals of the researcher's expectation to achieve, the finding of the

research questions. It is “Is there any significance effect of Frayer Model in enhancing vocabulary?”.

The research employed quantitative research approach as the research method. It is employed because the researcher needs the numerical data to get the findings (Cresswel, 2012). Given the purposes of this research, quasi-experiment that includes assignment, but not random assignment of participants to groups is applied. Ary et. al (2010) quasi-experiment is the research that involves manipulation of an independent variable and the subjects are not randomly assigned to treatment groups. In other words, it is lack of randomization as well as employ other strategies to provide some control to extraneous variables. The research has control group and experimental group.

**Figure 1.1 Quasi Experimental Design**



Note:

- M = Matched subject
- $O^1$  = Students’ pretest score
- $O^2$  = Students’ post-test score
- X = Treatment using Frayer Model
- C = Conventional treatment

From the figure above we can see the similarities and differences between experimental group and control group. Both of groups are given pretest and post-test that its’ result will be a data to analyze. They have differences in treatment that will be done to participant. The experimental group is given treatment using Frayer Model and the control group is given conventional treatment.

This research project is carried out in one of Private Vocational High School in Garut, West Java, Indonesia.

For the population, the researcher took all the second-grade students of the Vocational High School by the total is 65 students. In addition, for the sample of research, the researcher employed purposive sampling technique. Cohen, Manion and Marrison (2007) pointed out that in purposive sampling is a researcher handpicks the cases to be included in the sample as the basic of the judgment of their typicality. The sum of samples should have at least 10% from the population (Sundayana, 2016). She took two classes of second grade students by total 42 persons. The samples for the research were 22 students of class A as experimental group and 20 students of class B as control group.

The instrument for collecting the data is test (pretest and post-test). The material for pretest is Global Warming which is taken out from English curriculum textbook 2013 for second grade. The test form for pretest and post-test is multiple choice that each test consist of 25 question items. There are four types of questions; translation words from English to Indonesia, fill in the blanks, synonyms and antonyms of words and the wrong examples of the words, but for post-test is choosing the right examples of the words. The forms of question are based on the Frayer Model as the learning vocabulary media which contains definition, synonym and antonym or it can be filled by examples or nonexamples for noun.

The researcher did the activity of validating the instrument of the research and she did it in twice. They instrument were tested to twenty five students in the same grade. After doing the step of validating items as follow, she got forty valid items. Finally, the fifty valid items from the first and second validating activity were chosen as instrument of the research.

Pretest is conducted in the first meeting to know the students' problem in acquisition vocabulary before treatment. After pretest, the treatment is conducted. Treatment is necessary to determine its effect on an outcome. The treatment is delivered in four times and takes 90 minutes for each treatment by the total of words are 16 words. Treatment can be defined as the teaching process, here is by using Frayer Model. The teaching process was integrated in the reading skill. Then, a post-test is conducted to know what the significant improvement of students' vocabulary after giving treatment to both of groups.

Data that will be analyzed are students' score in vocabulary test. They are getting from the test that has been done of pretest and post-test. Creswell (2009) points out these variables can be measured and the numbered data can be analyzed using statistical procedures; using manual computation and SPSS 16.00 for windows program. From the manually counted data and the computation, the researcher gained the difference of two sample scores, the mean difference, standard error, standard deviation, the degree of freedom and in the last, the researcher found and compared t-value and the t-table.

### FINDING AND DISCUSSION

This research was completed the data through the research instrument. It is employed the quantitative design and used statistical calculation as stated in previous chapter. There are three kinds of data; pretest, treatment and post-test which are analyzed to get the conclusion of the research.

The guideline is needed for scoring each item in test. Thayn (2011) points out in the multiple-choice test form each item is scored dichotomously with one point awarded for the correct answer and zero point awarded for the incorrect answer. The research has 25 total test items and uses 100 scales as the higher score and 0 for the lower score. It means if the correct answer is selected it will get 4 points and if the incorrect answer is selected it will get 0 point.

**Table 3.1 Pretest Result in Experimental and Control Group**

	<b>Experimental Group</b>	<b>Control Group</b>
Participant	22	20
Total score	942	890
Mean score	42.82	44.45
Standard deviation	14.90	12.14
Criteria minimum score	75	75

Based on the table above, it presents the calculation of pretest in experimental and control group. It shows that students' vocabulary in both of groups is very low if it is compared with standard criteria of minimum score, that is 75, and the mean score of pretest in both of groups presents the worse calculation number. Indeed, the treatment of Frayer Model is suitable to use in accepted group.

**Table 3.2 Post Result in Experimental and Control Group**

	<b>Experimental Group</b>	<b>Control Group</b>
Participant	22	20
Total score	1760	1340

Mean score	80	69.27
Standard deviation	9.07	12.119
Criteria minimum score	75	75

Based on the table above, it presents the calculation of post-test in experimental and control group after getting treatment. Furthermore, if the mean score of post-test in experimental group is compared with standard of criteria minimum score, that is 75, it has reached significant improvement. The students' mean score has exceeded the minimum criteria score. While, in control group the total score is 1340 and mean score is 69.27. Furthermore, the standard deviation of control group post-test score is 12.145. The mean of post-test score in control group is still in low because it has not reached the minimum criteria score.

In conclusion, it can be seen there was a progress of students' vocabulary. It was significant improvement in experimental group of the students' post-test mean score that was 80, it bigger than students' pretest mean score that was 42.82. Therefore, the score mean of pretest compared with the post-test shows that Frayer Model enhances the students' vocabulary.

In the normality and homogeneity test, all the data (pretest and post-test) were normal and homogeneous. Since all the data have normal distribution and the data in both of groups was homogeneous, thus the researcher used t test to analyze the median gain between pretest and post-test or in other words to test the hypotheses of the research.

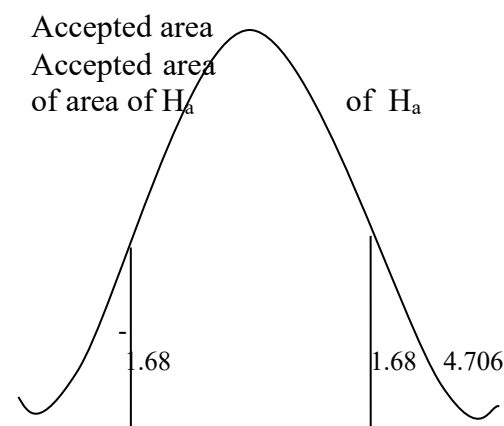
Here are the hypotheses;

$H_0$  : There is no significant effect in students' vocabulary by using Frayer Model

$H_a$  : There is significant effect in students' vocabulary by using Frayer Model

The result of t test is  $-t_{critical} = -1.68385 \leq t_{observed} = 4.706 \geq t_{critical} = 1.68385$  and it is in the areas of  $H_a$ . Thus, the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_a$ ) is accepted. There is significant effect of students who have given the Frayer Model in learning vocabulary rather than students who have given conventional Model.

#### 4.1 Figure of Curve in the Research



For the next calculation of normalized gain (G). The complete calculation is presented in the table of the normalized gain result as follows.

### 3.3 The Table of Normalized Gain

In addition, the result of normalized gain score was in medium improvement in both of group by the difference was 0.20 points. The experimental group got 0.54 as median normalized gain and the control group got 0.30 as median normalized gain. It showed in the table below.

**3.3 The Table of Normalized Gain**

Group	Number of Cases	Gain Score (Lower)	Gain Score (Higher)	Mean Gain
Experimental	22	0.13	0.95	0.54
Control	20	0	0.61	0.30

Concerning on the table above, the experimental group presents the lower gain score is 0.13 and the gain high score is 0.95. Moreover, the median gain is 0.54. Meanwhile, the control group shows 0 for the lower gain score and 0.16 for the higher gain score. In addition, control group gets 0.30 as median gain.

In conclusion, that the experimental class belongs to the medium improvement criteria and so does control group. Therefore, the using of Frayer Model in the experimental class has increased.

Based on the findings in this research, the result of students' vocabulary improvement has been shown in pretest and post-test result of each group. In the experimental group, the improvement progress of students' mean score increases 37.18 point from pretest score. While in the control group, the improvement of students' mean score increases 24.82 points. It means the experimental group was getting the higher improvement progress than control group by the difference of 12.36 points.

Moreover, the improvement of the experimental group was due to different treatment as well. The treatment was to use Frayer Model in learning vocabulary. On the other hand, the improvement of the control group that was learned by using conventional Model was lower than the experimental group who used Frayer Model.

Therefore, speaking about strength and weakness of the research, that was mentioned before that the Frayer Model was effective in enhancing students' vocabulary. But it does not mean that conventional Model is very worse, it can be seen from the result of normalized gain that conventional method got the medium position same with Frayer Model although the group who got Frayer Model treatment got the higher result than conventional method. Although, the use of Frayer Model enhances the vocabulary significantly, but it needs more time in applying.

In addition, there were also some differences between the research and the previous research. The average sample of the previous research was elementary school students. The

researcher took vocational high school students as the sample to examine the effect of Frayer Model in middle school grade students, and the average materials of the previous research were science and math, the researcher uses explanation text that was learnt in English subject of high school to examine the effectiveness Frayer Model in social studies. Furthermore, there was a time in completing each box of in Frayer Model as explained before. The time became benchmark in doing treatment activity. Thus, the differences of the research and the previous research were different sample as well as material and there was the time requirement in completing Frayer Model that was not exposed in the previous research.

## CONCLUSION

As has been stated before, this research has purpose to examine the effectiveness of Frayer model in enhancing students' vocabulary. In addition, the participants in the research were two classes by the total of students are 42 of second grade class in one of private vocational high school in Garut. They were consisted of two groups; experimental with 22 students and control group with 20 students. The students were asked to do pretest, follow treatment and do post-test.

In sequence with the aim of the research above, there was conclusion that was taken out from the result of research in previous chapter. The result showed that the mean of pretest in experimental class was 42.82 and control class got the mean 44.5. Meanwhile, the post-test mean in experimental group was 80 and in the control group was 69.27. In other words, students who were learned vocabulary by using Frayer model got the higher score than those who were learned vocabulary by conventional method.

Therefore, the conclusion is Frayer model is effective to be applied in enhancing students' vocabulary. The result of this conclusion also based on the statistical calculation using t test for hypotheses testing that shows  $t_{observed} = 4.706 \geq t_{critical} = 1.68385$ . It is also supported by the result of SPSS 16.00 that presented *Asymp.Sig (2-tailed) = 0.000* is smaller than  $\alpha = 0.05$ . It means, there is significant effect on students' vocabulary by using Frayer Model. The results reflect that Frayer model has been able to develop the students' vocabulary and help students to reduce the problem of understanding the words meaning from each language skills activity; listening, reading, speaking and writing.

The researcher concludes that based on the several previous studies which have mentioned, they were stated that was the using of Frayer model in learning vocabulary was effective to increase the students' vocabulary. One of the previous studies were from Ilter (2015) that the result of the research indicated that Frayer Model helps and facilitate students' development of vocabulary knowledge and vocabulary acquisition. Furthermore, Nahampun (2014) conducted the research about The Effect of Using Frayer Model on Students' Vocabulary Mastery. The result of the research presented teaching vocabulary by using Frayer model has more significant effect than teaching vocabulary by using conventional method.

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