Frayer Model on Students' Vocabulary Acquisition

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ABSTRACT: The Frayer Model prompts students to understand words within the larger context of a reading selection. In the teaching-learning process using the Frayer Model Method to identify and define unfamiliar concepts and vocabulary. It can help the students to be easier to find ideas and find the meaning of vocabulary. The objective of the research was to know the influence of the Frayer Model on students' vocabulary acquisition. In this research, the writer used the experimental method. The total population of this research was 165 students from 5 classes. The sample was taken by the Cluster Random Sampling Technique. Because there were five classes in the population, there were two classes for the sample. One of the two classes was the experimental class and another one was the control class. The writer applied the Frayer Model method in the experimental class and the translation technique in the control class. The main technique in collecting the data was multiple choice. It consisted of 40 items, which have options a,b,c, and d. The score of each item test was 2.5 for true and 0 for wrong. Based on the data analysis, the writer got the result that there was an influence of the Frayer Model on students' vocabulary acquisition in the tenth class of SMKN PP (Pertanian Pembangunan) in Lampung Selatan. The result of t_test = 3.47,t_table for α= 0.05 was 1.67 and for α=0.01 was 2.39 (3.47 ≥ 1.67 ≤ 2.39). The average score of the students' vocabulary acquisition which was taught through the Frayer Model was higher than what was taught by using the translation technique at the tenth class of SMKN PP (Pertanian Pembangunan) in Lampung Selatan. The average score of the experimental class was 74.21 and the average score of the control class was 63.15.

KEYWORDS: *vocabulary acquisition, Frayer model, teaching-learning strategy*

INTRODUCTION

Memorizing vocabulary is not easy, especially for teenagers and their minds are starting to become complex. Remembering vocabulary is easy to do at an early age during the golden era. Remembering and memorizing new vocabulary from foreign languages is considered difficult, therefore methods, techniques, and even strategies are really needed for this. Remembering vocabulary is not easy, especially for teenagers and their minds are starting to become complex. Remembering vocabulary is easy to do at an early age during the golden era. Remembering and memorizing new vocabulary from foreign languages is considered difficult, therefore methods, techniques, and even strategies are really needed for this. Wati (2022: 69) pointed out that a useful vocabulary can be a good foundation for learning a foreign language.

In Indonesia, the foreign language often used is English. Therefore, students are motivated to learn English so they can develop themselves for the future. In fact, people always use English to express their feeling, ideas, and desire. People need to communicate in doing daily activities and making an interaction to other people in their life. In departemen of education especialy in Indonesia, English is introduced into curriculum and it is a local content subject in kindergarten, elementary school, compulsory subejct junior high school, senior high school, and university. In learning English vocabulary is very important. Vocabulary is a crucial element to master the four language skills speaking, listening, reading and writing (Alashry, 2019: 12). Learners who are rich of vocabulary will be capable of expressing their feeling, ideas and thoughts in English. But those who are poor of vocabulary will have problems in other skills.

Many ways that can be applied in teaching vocabulary,for the example: song, game, poem, story, answering question or quiz, but the writer using games. Game is technique interesting both the children and adults. The student will find new word and it can be improve the students' vocabulary mastery and the student never find difficult or feel bored because the teacher use game in learning vocabulary. The game also helps the teacher to create contexts in which the language is used meaningful, and game never makes the student feel bored;The student will find an easy way to memorize vocabulary, with the do game memorizing words they feel enjoy and can understand or remember with easy too.

Sacapaño (2022: 3420) pointed that there is a simplest way to promote interactive learning in the classroom is maintaining a teaching style that encourages healthy debate between students and the teacher. The development of true critical- thinking skills however requires just such an open and honest exchange of ideas. In addition, research supported strategies help build depth of vocabulary knowledge and promote word consciousness, by asking students to predict the meanings of words and compare them with other students and teacher can also strengthen the acquisition of knowledge. One of the many strategies that the author believes can make

it easier for students to remember and understand vocabulary is the Frayer Model. Addition of Estacio (2017: 38) stated that this exceptional teaching strategy is widely popular and a staple in most classrooms. Frayer Model is a visual graphic organizer that helps students select and organize information related to a key concept.

By looking up the problem in the preliminary research at SMKN PP *(Pertanian Pembangunan)* Lampung Selatan,the writer found that the students' vocabulary mastery needs to be improved.They found difficulties in mastering vocabulary. To improve students' vocabulary mastery and acquisition, the writer is interested in applying the Frayer Model in teaching vocabulary.Frayer Model is a vocabulary development tool. In contrast with a straight definition, the model helps to develop a better understanding of complex concepts by having students identify not just what something is, but what something is not. The center of the diagram shows the concept being defined, while the quadrants around the concept are used for providing the details. Words that work well with the Frayer Model include quadrilaterals, insects and democracies.

LITERATURE REVIEW
Vocabulary
Vocabulary is fundamental to learning a foreign language. If the learners can master vocabulary, the learners will be easy to comprehend English in both spoken and written form. Vice versa if the learners do not master the vocabulary imaginable, the learners will find it difficult to understand English. It is supported by Cameron (2004:95) who states that vocabulary is fundamental to using the foreign language as discourse. "To know" is a word if they can recognize its meaning when they see it. It means that a foreign language learner has to enlarge vocabulary and know the meaning of every single word. When the learners find the hard word, the learners have to recognize the word by being familiar with the written form. Therefore, the learner will be easier to understand when met in reading or speaking.

Vocabulary is the knowledge of words and word meanings. Vocabulary knowledge is not something that can ever be fully matered (Aryanti, 2017: 2). It is something that expands and deepens ove the course of a lifetime. Vocabulary is the collection of words that a person has learned and comprehends. It encompasses all the words that an individual is acquainted with, as well as their comprehension of how to utilize and interpret these words in various situations. A strong vocabulary is crucial for effective communication, reading comprehension, and academic achievement as a whole.

A rich vocabulary is essential for effective communication and academic success. It allows individuals to express themselves with clarity and understand language in different contexts. Nushi (2016: 51) in his journal stated that vocabulary is essential to conveying meaning in a second language. In a second language, a strong vocabulary is critical for conveying meaning accurately and comprehending written and spoken language. Thornbury (2002:13) pointed that without grammar very little can be conveyed, without vocabulary nothing can be conveyed. From that statement, we know that grammar is important part in forming words and make structure of sentences but also vocabulary is important for the learners in comprehend each single word. If learners communicate with other people but the other people do not master grammar and she or he only master vocabulary of course they are still able to understand what they talking about. Mastering vocabulary also could facilitate and smoothen speak in English but it is should be supported through many practices.

By looking at the statement above the writer may conclude that vocabulary can learn about idiom, and binomial as well as single word and it is true that vocabulary not only focused on the word, as well as a single word it can learn in vocabulary. Without a shred of doubt, the writer said that the acquisition of vocabulary would help people in gaining, understanding, and also enhancing the process of knowledgeable transferred for a better life. Because in learn vocabulary automatically we not only learn about word but we can learn idiom etc as well as a single word. Indisputably the chances for progress or success in any kind of fields, like computers, technology, economy, politics, tourism, and educational increase with the size and applications of vocabulary.

Vocabulary lays the foundation, (Denne, 2017: 10) but the unit should provide students with lessons in both content and reading strategies to increase overall comprehension. The writer concludes that in English a single word has more than one meaning; to comprehend language especially English we have to master vocabulary. Through mastering vocabulary, it can help us easy to use English both of spoken or written. Therefore, we have to enlarge vocabulary as much as possible. Vocabulary mastery means knowing the meaning every single word, not only knows the word itself, but also are able to understand the word meaning in spoken and written. Having a strong vocabulary is essential for understanding any subject matter, but it's also important to teach students effective reading strategies that can help them comprehend and retain information better. A well-designed unit should incorporate both of these elements to ensure that students are not only learning the content, but also developing the skills they need to become better readers and learners overall.

Teaching and Learning Vocabulary
Vocabulary is an essential part of learning English. Students must be able to master vocabulary because without sufficient knowledge of words, they cannot listen, speak, read, and write well. In teaching vocabulary, the teacher must also have mastery of the language. The teacher's main role is to teach and facilitate the learning of a specific curriculum. This involves a strong sense of assertiveness in guiding and directing students towards the desired learning outcomes. The key role of a teacher is to teach, which can be understood as to facilitate learning of some target curriculum(Avila, 2020: 2580). Therefore, teaching is tied to the notions of learning that if students do not learn, then whatever the teacher is doing does not deserve the label of 'teaching'.

In general, vocabulary refers to an individual's knowledge and understanding of the meaning of words (Kamil and Hiebert, 2005: 3). This means that when someone has a good vocabulary, they have a broad understanding of the meanings of many words, which enables them to communicate effectively and comprehend others' communication. Teaching vocabulary can be challenging, but a

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creative teacher can use different techniques to help students memorize new words easily and enjoyably. The purpose of learning vocabulary is to gain a deeper understanding of a new language and its meaning. Making the learning process enjoyable encourages students to be engaged and motivated to learn.

Presenting vocabulary depends on several factors that include the level of the students, their interests, and the learning objectives. Other factors may also include the cultural background of the students and the context in which the new language is being learned. A good teacher considers these factors when presenting vocabulary to ensure that the students can easily understand and remember the new words.

Table 1. Presenting Vocabulary Depend on the Following Factors:

No	Factors
1	The level of the learners (whether beginners, intermediate, or advanced)
2	The learners likely with the word (learners may have met the words before even though they are not part of their vocabulary activity)
3	The difficulty of the item (whether, for example, they express abstract rather the concrete meaning, or whether they are difficult to pronounce)
4	Their 'teachability' (whether, for example, they can be easily explained and demonstrate)
5	Whether items are being learned for production (in speaking and writing) or for recognition only (as in listening and reading). Since more time will be needed for the former, the number of items is likely to be fewer than if the aim is only recognition.

(Thornbury, 2002:75)

Frayer Model

The Frayer Model is a vocabulary development tool that helps learners to understand new words by providing a framework for analyzing their meanings and contexts. It involves creating a visual representation of the word and breaking it down into its various components, such as its definition, examples of how it can be used, and its relationship to other words. The Frayer Model is often used in educational settings to expand students' vocabulary and deepen their understanding of language. Aggreing with the statement by Alashry (2019: 15) that Frayer Model is a technique for teaching vocabulary, essentially a type of graphic organizer that allowed the students to separate the various aspect of a word or concept.

In Reilly's journal (2017: 7) pointed ou that the Frayer model designed by Dorothy Frayer and two of her colleagues in 1969, is a graphic organizer used to develop concepts and build vocabulary. The Frayer Model is especially useful for teaching vocabularies that describes concepts or vocabulary that describes concepts students may already know but cannot yet clearly define (Panjaitan, 2020: 4). This model is suitable to identify and define unfamiliar concepts and vocabulary, because it encourages a deeper understanding of new words. It requires learners to engage with the word by defining it, providing examples and non-examples, and connecting it to prior knowledge. This process helps learners to make meaningful connections between the new word and what they already know, which supports their retention and recall of the word. Additionally, the Frayer Model also helps learners to analyze the structure of the word, which can aid in their understanding of related words and word families. All of these factors make the Frayer Model an effective tool for vocabulary acquisition and retention.

The Frayer Model is a strategy that uses a graphic organizer for vocabulary building. This technique requires students to (1) define the target vocabulary words or concepts, and (2) apply this information by generating examples and non-examples. This information is placed on a chart that is divided into four sections to provide a visual representation for students. The Frayer Model is a versatile graphic organizer that can be adapted to meet the needs of English language learners and younger students (Panjaitan, 2020: 4). One way to modify the layout is by asking them to write a definition and associated characteristics instead of essential and nonessential characteristics. This adjustment can make the Frayer Model more accessible to learners who may not yet have a strong grasp of the language or who may struggle to differentiate between essential and nonessential characteristics.

Another way to adapt the Frayer Model is by incorporating pictures and drawings. This can be particularly helpful for visual learners or for learners who may have difficulty expressing themselves in writing. By modeling the Frayer Model with pictures and drawings, teachers can help students to make connections between the new word and its meaning, while also providing a visual representation of the word that can aid in their retention and recall.

Table 2. Advantages of Frayer Model

1	Helps make connections between what students know and what they will learn.
2	Can be used before, during, or after reading.
3	It improves retention of information.
4	Students learn how one concept relates to another concept.

(Buehl, 2002: 39.

Procedure of Teaching Vocabulary by Using Frayer Model

The prosedur of teching vocabulary by using Frayer Model of (Buehl, 2002: 35) before introducing the Frayer Model to students, you should first choose a concept and write down the definition as well as all of the essential and nonessential characteristics, and a list of examples and nonexamples. For the example below will use the topic "mammals", are as follow:

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1) Introduce the topic "mammals" to your students. Divide students into groups and have them list as many examples of a mammal as they can come up with. Then, come back together as a class and list the examples on the board.
2) Organize the examples into a hierarchical map. For example, include general and parallel classes of things that are not directly a part of the "mammal" concept. This will help students see the relationship between concepts.
3) Add to the map any items and examples that you had on your map. Discuss with students the characteristics of all the examples of the main concept.
4) Guide students into finding the nonessential characteristics. The ones those are irrelevant to the main concept.
5) Next, have students read about the main concept. As they read, encourage them to look for additional information that can be added to the model. They can look for any information that fits into any of the four categories.

METHODOLOGY

Frayer model is a method that is employed to teach vocabulary which essentially a type of graphic organizer that allowed the students to separate the various aspect of a word or concept. Research in the class about using Frayer Model to improve students' vocabulary acquisition is experimental method. The influence of Frayer Model method towards students' vocabulary acquisition becomes the focuss in this research. The writer would take two classes to be investigated, the first class is the experimental class and the second is the control class. In experimental class, the writer used Frayer Model, and the second class as control class, the writer used Translation Technique.

The population of the research are students at the tenth class of SMKN PP *(Pertanian Pembangunan)* Lampung Selatan. Consist 165 student from 5 classes. The writer took two classes of five classes as a sample in the research. The first class is the experiment class where the writer would like to use Frayer Model and the second class is a control class, where the writer would like to teach vocabulary by using tranlastion technique. In this case, the writer to used Cluster Random Sampling Technique, because the classes were homogenous. In collecting the data, of the research writer used objective test to know the students' vocabulary acquisition. The test was multiple choice of 40 with options (a, b, c, and d). The score of each items was 2,5 for the correct answers. The highest score was 100 and lowest score was 0.

Validity and Reliability of the Test
Validity Test
Measuring the Validity of test used content validity, because one of factors to ditermine the quality of the test was content validity. It means that before giving the test, the test should use design based on curriculum and material from the school to get the validity of the test.

Reliability Test
The reliability of the test is measured using a split half technique as follows (Arikunto, 2002:157):
1. Gave the student test from the respondent. It was on X.C class. The total number of students in try out test was 20.
2. Devided te test items into odd (X) and event (Y)
3. Analyzed the test result by using Product Moment formula, to know the coefficient correlation.

To find out the reliability of the test, the data is calculated by using *Product Moment* formula. Then the writer used *Spearman Brown* formula to know the reability of try out test. There are the result tryout test vocabulary mastery in odd and even number.

Table 3. The Result of Tryout Test Vocabulary Mastery in Odd and Even Number

NO	X	Y	X2	Y2	X.Y
1	9	10	81	100	90
2	6	8	36	64	48
3	7	9	49	81	63
4	8	10	64	100	80
5	7	9	49	81	63
6	6	8	36	64	48
7	8	7	64	49	56
8	8	6	64	36	48
9	8	9	64	81	72
10	7	6	49	36	42
11	8	9	64	81	72
12	7	10	49	100	70
13	7	8	49	64	56
14	8	10	64	100	80
15	8	8	64	64	64
16	6	7	36	49	42
17	5	6	45	36	30
18	6	6	36	36	36

19	7	9	49	81	63
20	6	7	36	49	42
Total	**142**	**147**	**1048**	**1271**	**1165**

Result of Reliability Test

Based on the calculation of try out, it was found r11= 0.61 and it was categorized in enough or sufficient. It means that the test could be used to measure students' vocabulary in this research.

Data Analysis

Data Normality Test

Normality data is the data distribution that gives the normal result (Arikunto 2006:314). It is used to know whether the data of two classes are normally distributed or not. The writer uses chi-square (X^2 Ratio).

In normality test is used hypotheses formula:

Ho : sample comes from the normal distributed population

Ha : sample comes from the non- distributed population

(Sudjana, 2009:273)

$$\chi^2_{hit} = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

The criterian of the test:

H_0 is accepted if $\chi^2_{ratio} \geq \chi^2_{(1-\alpha)(k-3)}$. With α for significance level of 5% (0.05) and 1% (0.01). If the data have a normal distribution, it means that Ho hypothesis is accepted. To continue with the testing of homogeneity.

Homogeneity Test of Variance

The formula homogeneity test was used to know whether the data are homogeneous or not. They are (Sudjana, 2009: 249):

Ho : $\sigma_1^2 = \sigma_2^2$ (the variance of the data is homogenous)

Ha : $\sigma_1^2 \neq \sigma_2^2$ (the variance of the data is not homogenous)

$$F = \frac{S1 \ (the \ highest \ variance)}{S2 \ (the \ lowest \ variance)}$$

Notes:

F : the homogeneity of variance

S1 : the highest variance of experimental class

S2 : the lowest variance of the control class

The criterion of testing:

Accepted H_0 if F $(1-\alpha)$ $(n_1 - 1) < F < F^{1/2}\alpha(n_1 - 1, n_2 - 1)$ Ho is rejected if F≥(F$^{1/2}$∝(v$_1$.v$_2$)) and also take the real level (∝) 0,05 and 0,01.

Hypothesis Test

To prove hypotesis whether there is any influence of using would you make a good witness game toward students' vocabulary acquisition at the tenth class of SMKN PP *(Pertanian Pembangunan)* Lampung Selatan. Before using the *t-test*, the writer determined the average rate *($\mathcal{X}$)* and variance *(S^2)*.

RESULT AND DISCUSSION

Data Normality Test of Experimental Class

The writer conducted a test in an experimental class to measure students' achievement in vocabulary acquisition after using the Frayer Model strategy. A normality test was utilized to determine if the sample was in a normal distribution. The results of the test showed the scores of the students in the experimental class.

The highest score = 85

The lowest score = 50

Total of the data *(n)* = 33

Then, according to the calculation of the normality test, it was got:

Span *(R)* = 38

Total Number of Interval Class *(K)* = 6

Length of Interval Class *(P)* = 6

$\sum fi$ = 33

$\sum Fi.Xi = 2449$

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$$\sum Fi.Xi^2 \quad = 188321$$
$$\bar{x} \quad = 74.21$$
$$s_1^2 \quad = 205.48$$
$$s_1 \quad = 14.33$$

The next step is determining the expected frequency (E_i) and observed frequency (O_i) as follows:

1. Delimiting the boundary of the class (X) by subtracting the lowest score in the class by 0.5
2. Calculating Z for boundary of class with formula $Z_i = \frac{X_i - \overline{X_i}}{S}$
3. Calculating width of interval class by seeing Z value list
4. Calculating expected frequency (E_i) by multiplying width of every interval with the total of the data that is: $E_i = L_i.n$

The results of the normality test showed that at the significance level of 0.05 and 0.01, the calculated value of $\chi^2{}_{ratio}$ was less than the $\chi^2{}_{table}$ value. This indicates that the data was normally distributed. Specifically, the calculated value was 2.02, which was less than the critical values of 7.81 and 11.3 for the respective significance levels. Therefore, the hypothesis was accepted, confirming that the data had a normal distribution.

Data Normality Test of Control Class

In addition to the experimental class, the writer also conducted a test in a control class to measure students' achievement in vocabulary acquisition after using the Frayer Model strategy. Similarly, a normality test was conducted to determine if the sample was normally distributed. The results of the test showed the scores of the students in the control class.

The highest score = 80
The lowest score = 40
Total of the data *(n)* = 33

Then, according to the calculation of the normality test, it was got:

Span *(R)* = 40
Total Number of Interval Class *(K)* = 6
Length of Interval Class *(P)* = 7

$$\sum fi \quad = 31$$
$$\sum Fi.Xi = 2084$$
$$\sum Fi.Xi^2 \quad = 136288$$
$$\bar{x} \quad = 63.15$$
$$s_2^2 \quad = 146.25$$
$$s_2 \quad = 12.09$$

The results of the normality test for the control class showed that at the significance level of 0.05 and 0.01, the calculated value of $\chi^2{}_{ratio}$ was less than the $\chi^2{}_{table}$ value. Specifically, the calculated value was 8.82, which was greater than the critical value of 7.81 and less than the critical value of 11.3 for the respective significance levels. Therefore, the hypothesis was accepted, indicating that the data for the control class was normally distributed.

Hypothesis Test

Based on the calculated t_{test} value of 3.47, which was greater than the critical values of 1.67 and 2.39, the alternative hypothesis (H_a) was accepted. This indicates that there was a significant influence of the Frayer Model strategy on the vocabulary mastery of students in the tenth class of SMKN PP *(Pertanian Pembangunan)* Lampung Selatan.

DISCUSSION

Vocabulary is a crucial component of foreign language study as it forms the foundation of language. A good knowledge of vocabulary is essential for successful language learning and fluency in communication. Having a strong vocabulary enables learners to understand and express themselves more effectively, making it an important factor in English learning and other foreign language studies. Ultimately, a rich vocabulary is fundamental to achieving proficiency in a foreign language. The main point is that learning a language requires vocabulary, and having a strong vocabulary can have a positive impact on language learning if the learners are committed to learning new words. Without a sufficient vocabulary, it becomes impossible to effectively use the four skills of writing, listening, reading, and speaking in a foreign language. Without a strong vocabulary, learners will struggle to become proficient in their foreign language studies. Therefore, it is clear that vocabulary plays a crucial role in foreign language learning and is essential for success in this area.

Teaching vocabulary requires creativity on the part of the teacher in order to make it easy and enjoyable for students to learn new words. The ultimate goal is to help students understand the meaning of a new language. One effective tool for vocabulary development is the Frayer Model, which helps students to develop a deeper understanding of complex concepts by identifying not only what something is, but also what it is not. The diagram features the concept in the center, with quadrants surrounding it for providing details. This strategy is particularly useful for words such as quadrilaterals, insects, and democracies. Overall, the Frayer Model is an effective technique for teaching vocabulary and promoting a thorough understanding of new concepts.

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Based on the data analysis and hypothesis testing, it was found that the alternative hypothesis (Ha) was accepted. This indicates that the average score of students taught using the Frayer Model was higher than those taught using the translation technique, with a score of 74.21 being greater than 63.15. Moreover, the t_{test} value was also higher than the t_{table} value, with a calculated value of 3.47 being greater than the critical values of 1.67 and 2.39. Additionally, the difference in the average scores between the two groups was also calculated, with a value of 3.47 being greater than the critical values of 2.00 and 2.66. Overall, these results suggest that the Frayer Model is a more effective technique for teaching vocabulary than the translation technique.

The results of this research are consistent with the theory proposed by Tankersley (2005: 21), which states that the Frayer Model is an effective tool for helping students understand new words in the context of a larger reading selection. By analyzing the concept/word and identifying its definition and characteristics, students are able to synthesize and apply this information by thinking of examples and non-examples. Additionally, the Frayer Model requires students to activate their prior knowledge to complete the chart, which helps to build connections between existing schema and new knowledge. This activation of prior knowledge ultimately facilitates the acquisition of new vocabulary and helps students to better understand the material they are studying.

CONCLUSION

In conclusion, the results of the data analysis and hypothesis testing indicate that the Frayer Model has a significant positive influence on students' vocabulary acquisition at the tenth class of SMKN PP *(Pertanian Pembangunan)* Lampung Selatan. The t_{test} value of 3.47 was greater than the critical values of 1.67 and 2.39 for α=0.05 and α=0.01 respectively ($3.47 \geq 1.67 \leq 2.39$), indicating that the alternative hypothesis (Ha) was accepted. The average score of the experimental class, which was taught using the Frayer Model, was also higher than that of the control class, which was taught using a translation technique, with a score of 74.21 being greater than 63.15. Overall, these findings provide strong evidence that the Frayer Model is an effective tool for improving students' vocabulary acquisition in the context of foreign language learning.

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