

# THE EFFECT OF USING FRAYER MODEL ON THE STUDENTS' VOCABULARY MASTERY AT SMP IT AL IHYA TANJUNG GADING

#### **SKRIPSI**

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thesis. The researcher allows the readers to give suggestion to improve its content

in order to be made as one of the good examples for the next thesis.

Medan, 04 June 2018

The researcher

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#### **ABSTRACT**

# CIKITA RAHMADANI. THE EFFECT OF USING FRAYER MODEL ON THE STUDENTS' VOCABULARY MASTERY AT SMP IT AL IHYA TANJUNG GADING

Skripsi, Medan: Department of English Education, Faculty of Tarbiyah Science and Teachers Training, State Islamic University of North Sumatera, Medan 2018.

## Keywords: Frayer Model, Vocabulary, Mastery

The aim of this research is to know the students' vocabulary mastery that were taught by using Frayer Model, to know the students' vocabulary mastery that were taught by using conventional strategy and to find out whether there was significant effect on the students' vocabulary mastery at eighth grade students' of SMP IT Al Ihya Tanjung Gading in 2017/2018 academic year. The research methodology of this research was a quantitative research, which conducted the experimental and control class. The population of the research was eighth grade students of SMP IT Al Ihya Tanjung Gading, the number of students were 87 students consist of three classes. The experimental class (VIII B) was 26 students and control class (VIII C) was 26 students as sample with total were 52 students. The researcher gave multiple choice to collect the data. There were two test; pretest and post-test. The formula that used to analyze the data was t-test. The researcher found that the mean of pre-test in experimental class was 70.15 and control class was 35.85. Mean of post-test in experimental class was 87.88 and control class was 64.46. It was found that t<sub>observation</sub> was 7.169, whereas the t<sub>table</sub> was 2.009 for  $\alpha$ = 0.05with the degree of freedom (*df*) 50. the t<sub>observation</sub> was higher than t<sub>table</sub> (7.169>2.009), so null hypothesis (H<sub>o</sub>) was rejected and alternative hypothesis (Ha) was accepted. It means that there was significant effect of usingFrayer Model on the students' vocabulary mastery.

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#### **CHAPTER I**

#### **INTRODUCTION**

## 1.1 Background of the Study

"And He taught Adam all the names, then presented them to the angels; then He said: Tell me the names of those if you are right". (QS. Al-Baqarah: 31)

This verse explains that Allah taught Adam all the names and the characteristics of all the important things. How to teach the names of these things to Adam is to inspire him and inculcate his mind, allowing him to develop his knowledge. After the names of these things Allah taught Adam then Allah showed Adam to the angels and commanded them to name the things that Allah had taught Adam, but they can not mention them. Actually Allah has given the ability, science, power of thinking to humans to learn and develop their knowledges, skills, and all of things including English.

English as an International language is very important to follow the developments in this creative and innovative era. English takes a strict role in mastering the science. Students as young generations must have ability of that international language in order to make them more competitive. Many education experts and government felt essential to teach English intensively and continuously to the high school students even since elementary school. So English as a tool communication from the speaker or writer to the listener or reader. This phenomenon shows the awareness of people that English is very

<sup>&</sup>lt;sup>1</sup>Didik Santoso, and Pirman Ginting, *Bilingual Education Programs at Junior High Schools* (Jakarta: Kencana, 2015), 1.

important. It is crucial to be mastered lately than any other languages in the world.

That is why students should learn about English.

In terms of English teaching, one of the language aspects taught is vocabulary. Vocabulary is a list or collection of words and phrases usually alphabetically arranged and explained or defined.<sup>2</sup> So language is arranged by so many words and phrase. In addition vocabulary is knowledge of word meaning. It means that developing vocabulary is crucial to be learned.

Student should learning vocabulary step by step. The first thing is they have to knowcontent words category although there are four skills in English learning. They are speaking, listening, reading, and writing. But they can not reach them, if they are lack of vocabulary. Because vocabulary achievement relates to all language learning and it is one of the components supporting elements to mastery of four language skill. The objective of teaching and learning English for students is they are expected to be able to know vocabulary in English. To achieve this, the students do not only have knowledges and skills of memorizing all of things but also good creativity and good strategy.

In teaching and learning process, teacher can use several effort. First, he/she asks the student to mentionsomething about noun, fruit, animal, vehicle, and etc. This is used to makes the refresh their thinking process. Second, teacher can use some activities that can stimulate the students to try their thinking based on their experience. These activities are such as going to the zoo and visiting some events. Third, teacher uses a game to improve their vocabularies. It provides

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<sup>&</sup>lt;sup>2</sup>www.merriam-webster.com, (Jan 28, 2018)

the interesting and challenging for the students so they can memorize easily. Fourth, the teacher guides the student to make a simple strategy how their memorizing stay in their mind after that they can using in conversation with his/her friends about the topic that he/she has spoken. Fifth, the teacher gives motivation to the student.

Based on the experience of the researcher in junior high school, motivation is important in learning English to buildup their confidence to speak English as soon as possible. Without high motivationstudents will be bored, they have no motivation to learn, and the goal of education willnot be reached. And also the researcher's experience when conducting teaching practice (PPL) in 2017. There are the important problems in vocabulary. Most of the students have difficulty in mastering English words. They have limited vocabulary to master the meaning of the words in the text, they do not know the context of the word usage, they can not recognize the meaning of each word, they are not able to listen the English words from teacher, they can not compose their writing task successfully, and they get difficulty to communicate fluently in English. Therefore this situation makes them lazy to study English.

To solve the problem above, the teacher should make various strategies and choose a suitable strategy to improve the students' mastery of vocabulary. One of the alternative strategy is Frayer Model. The researcher tries to make a research to find the solution use this strategy in the learning process. This strategy will apply by the researcher.

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. Frayer Model helps students learn new concepts through the use of attributes and non attributes.<sup>3</sup>

However, in reality some of the students in SMP IT Al-Ihya Tanjung Gading still find difficulties in mastering vocabulary. The evidence of this fact shows most of the students have lack of vocabulary. In this case, they are still low in vocabulary mastery. Therefore, the researcher would like to conduct a study about The Effect of Using Frayer Model on the Students' Vocabulary Mastery at SMP IT Al Ihya Tanjung Gading.

#### 1.2 Statement of the Problems

Based on the researcher explained in Background of the study above, it can be identified the problems that related to this study as follows:

- Most of the students feel difficult to understand and memorizing of vocabulary, especially in content words category.
- Most of the students often do not know how to pronunce the words well.
- Most of students do not know the meaning of the words especially in content words category.

<sup>&</sup>lt;sup>3</sup>Gholam Reza, and Banafsheh, "In defense of a hybrid model of efl vocabulary instruction," *Journal of language teaching and research*, Vol. 4, no. 1 (Jan 2013): 139-148.

4. Theteacher's strategy and method in teaching English is still conventional. Therefore, the researcher usesFrayer Model in teaching English especially vocabulary mastery.

#### **1.3 Research Question**

Based on the background of the study the researcher question is formulated as follow: Is there any significant effect of using Frayer Model on the students' vocabulary mastery?

# 1.4 Purpose of the Study

In the line with the research question, the objective of this study is:To find out the significant effect of using Frayer Model on the students' vocabulary mastery.

# 1.5 Significances of the Study

The significance of this study can be viewed from both theoritical and practical aspects, as describe below:

1. Theoritical significance

To enrich the theory of awarness in vocabulary mastery

2. Practical significance

This research is expected to give possitive input to:

a. The principal of SMP IT Al Ihya Tanjung Gading

To give direction to the English teacher about English teaching strategy, that is suitable to the students' situation and materials of the study that can improve the students ability in English, especially in building up vocabulary.

#### b. English Teachers

To make the teachers easy to explain the material and help the teachers to teach the material. They will be more innovative in teaching process especially in vocabulary and make learning process more interesting by using Frayer Model. They will ask to the students make a creative words by using Frayer Model in origami letter after that put on the wall of classroom.

#### c. Students

The result of this research is expected to be useful for the student to realize how to master of vocabularies in English. They will be motivated and enthusiastic in learning English especially in learning vocabulary by using Frayer Model.

# d. Stakeholder

Make the stakeholder easy to make the new better syllabus.

#### e. Other Researchers

As reference or to give alternative way in teaching and learning vocabulary, and as information for conducting research in the same topic.

#### 1.6 Limitation of the Study

There are many kinds of strategy in teaching Englishand the researcher is very interested in conducting study that focuses on Frayer Model inteaching vocabulary of the eighth grade of SMP IT Tanjung Gading at the second semester in academic year of 2017/2018.

#### **CHAPTER II**

#### LITERATURE REVIEW

#### 2.1 Review of Literature

Theories are important to clarify some terms to avoid misunderstanding between the writer and the readers. The following terms are needed in this study:

#### 2.1.1 Vocabulary

#### 2.1.1.1 Definition of Vocabulary

In English, there are four skills that should be mastered namely listening, speaking, reading and writing. In order to master English, we should also master the grammatical rule and vocabulary. More and more we master vocabulary, then it will be easier for us in mastering English. Vocabulary is one of the most important elements without which neither comprehension nor production of language is possible. On the other word, vocabulary cannot be separated from other language skills. The more words the learners know, they will be more better to understand what they hear or read. In addition, the more words they have, they will be more accurate to express their ideas in spoken or written form. Vocabulary also is a central part of a language. For this reason, everyone who wants to be able to communicate in a certain language needs to master the vocabulary.

Moreover, vocabulary is a collection of the words with their meaning that it used to communicate. It means that vocabulary is a word that has meaning and as part of the language. The role of vocabulary can not be separated in learning

<sup>&</sup>lt;sup>4</sup>Retno Trihandayani, "The Effectiveness Of Using Computer Game "Fast Hands" To Improve Students' Vocabulary Mastery For Junior High School," *Journal of English Language Teaching*, ISSN 2252-6706 (May 2016): 2.

English to comprehend the target language. So English should be introducing earlier because the younglearners learn a foreign language, better than adults.

## 2.1.1.2 The Importance of Vocabulary

The importance of vocabulary was also noted by Richards and Renandya believing that vocabulary plays crucial part in one's foreign language learning and language proficiency that can affect how well learners speak, listen, read and write. However, emphasizes the significance of vocabulary to communication by asserting that, in fact, survival level communication can take place quite intelligibly when people simply string words together-without applying grammatical rules at all. In this sense, vocabulary is regarded as one of essential factors that gives big influence to the people's communication. Thus, vocabulary should be ideally placed as important aspect of language learning that should be given much attention in the practice of TEFL so as to improve students' vocabulary mastery. There are some factors why vocabulary is important:

- 1. Vocabulary is crucial as a tool of communication.
- 2. Vocabulary is a basic skill to communicate; people will not be able to communicate easily without understandingit. It means vocabulary is the basic skill in communication that has to be learned. Vocabulary can help students in mastering four language skills. They are listening, speaking, reading and writing.

<sup>5</sup>Dewi Nur Asyiah, "The Vocabulary Teaching And Vocabulary Learning: Perception, Strategies, And Influences On Students' Vocabulary Mastery", Jurnal *Bahasa Lingua Scientia*, Vol. 9, No. 2 (November 2017),2.

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- 3. Vocabulary can help students to express their thought and feelingto other people.
- 4. Learning some words and phrases in new language allow people to start communicating at once. It means that vocabulary is important in all language to commnicate.
- 5. Vocabulary is the way we acquire, and then access, new knowledge. 6It means that vocabulary can be used as a key of broadering knowledge.

#### 2.1.1.3 Kinds of Vocabulary

Some experts divide vocabulary into two types: active and passive vocabulary. The first type of vocabulary refers to the one that the students have been taught and that they are expected to be able to use. Meanwhile, the second one refers to the words which the students will recognize when they meet them, but which they will probably not be able to pronounce. Hatch and Brown indicate two kinds of vocabulary, namely receptive vocabulary and productive vocabulary.

#### 1. Receptive vocabulary

Receptive vocabulary is words that learners recognize and understand when they are used in context, but which they cannot produce. It is vocabulary that learners recognize when they see or meet in reading text but do not use it in speaking and writing.

#### 2. Productive vocabulary

Productive vocabulary is the words that the learners understand and canpronounce correctly and use constructively in speaking and writing. It

<sup>6</sup>Amy Benjamin, And John T. Crow, *Vocabulary at the Core: Teaching the Common Core Standards* (New York USA: Eye on Education, 2013), xiv.

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involves what is needed for receptive vocabulary plus the ability to speak or write at the appropriate time. Therefore, productive vocabulary can be addressed as an active process, because the learners can produce the words to express their thoughts to others.<sup>7</sup>

# 2.1.1.4 Vocabulary Teaching and Learning Principles

Principle 1: Select Appropriate Words Selecting appropriate words is the most important principle in teaching and learning vocabulary. Words that are considered appropriate are words that are comprehensible by learners and are coherent to their proficiency level. In the case of vocabulary acquisition, the input needs to convey meaning and be comprehensible so that learners are able to attach form to meaning.

Principle 2: Focus on Different Aspects of Words Vocabulary acquisition will be more effective when a particular word is learned based on several aspects. The reason is that a word carries so much more than just its meaning. For example, amongst other things, students can learn a word's stress (accent), pronunciation (phoneme), its collocations and word family members, its grammatical patterns and word parts of speech. Learning different aspects of words may help learners to enrich their knowledge on vocabulary.

Principle 3: Progress from Less Demanding to More Demanding Vocabulary-related Activities Learners should not be expected to use new words in activities that require them to know every aspect of the words. This is inconsistent with how the process of language vocabulary acquisition must take

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<sup>&</sup>lt;sup>7</sup>Mofareh Alqahtani, "The Importance Of Vocabulary In Language Learning And How To Be Taught," *International Journal Of Teaching And Education*, Vol. III, No. 3 (March 2015): 21-34.

place. Instead, the process of learning vocabulary needs to be implemented step by step, and learners are encouraged not to immediately use new words in vocabulary-oriented activities.

Principle 4: Limit Forced Semantic Elaboration during the Initial Stages of Learning New Words Following the third principle above, teachers should limit the explanation of meaning of the new words to just the basic meaning, as to avoid confusion and misunderstanding from learners of the new language. For example, teachers should not explain the word "bear" by giving a complicated unrelated definition to the students like "a person who expects the price of stocks to go down and who sells them to avoid losing money" which is a term under "finance" and a "noun". Instead, teachers should limit the meaning of "bear" to just "one of a group of large and heavy animals that have thick hair and sharp claws and that can stand on two legs like a person" which is as a "noun", and "something that is difficult to do or deal with" which is a "verb", and not to relate to any other complicated meaning that is out of the learners' lexicon or understanding.

Principle 5: Encourage Interest among Students during Learning Process Vocabulary teaching and learning should be interesting and enjoyable as to keep motivation high while encouraging students to develop strategies that they can continue to use once they leave the classroom. Besides giving learners some opportunities to enjoy their learning process, teachers should also take learners' perspective into consideration when it comes to preparing the learning materials.

Principle 6: Accommodate Use of Contextual Cues Vocabulary can be taught better through the use of contextual cues. It helps to ease many teachers in

explaining the meaning of new words to learners. Teachers can use materials such as realia, pictures, past experiences and examples to depict the connection between the new words and their meaning.

Principle 7: Expose Learners to the Use of Dictionary A dictionary is one of the important references in learning new words, especially for new learners. There are many types of dictionary in the market including picture dictionaries which are targeted toward the young learners who are still learning to expand their vocabulary in both their mother tongue (L1) and second (L2) languages. It is up to teachers and learners which dictionary would benefit them the most.

Principle 8: Exercise Repetition by Introducing Words Frequently Inside the Module The more frequently language learners are exposed to a particular vocabulary, the more likely they are to remember it. This is one of the basic principles in memorising new words as with repetition, learners would be able to memorise, and produce the word appropriately when they understood the meaning.

Principle 9: Promote Deliberate Vocabulary Acquisition Deliberate vocabulary acquisition is the stage where the teachers introduce new words to the learners and be sure to explain it thoroughly so that the learners are able to understand the meaning of that word and memorize it. Mayer and Wittrock state, the more effectively the to-be-learned material is elaborated during acquisition, the more readily it will be recalled by the learners.

Principle 10: Expose Learners with Exercises and Activities Other Than Memorizing Words Instead of just sticking to the conventional teaching methods like reading textbook, referring to a dictionary for meaning or memorising new words, teachers could use their imagination to encourage learners to learn new words in different types of activities.<sup>8</sup>

# 2.1.1.5 Vocabulary Mastery

In order to understand the language, vocabulary is crucial to be mastered by the learner. Vocabulary mastery is needed to express our ideas and to be able to understand other people's sayings. According to Webster mastery refers to (1) a. the authority of a master: dominion, b. the upper hand in a contest or competition; superiority, ascendancy and (2) a. possession or display or great skill or technique, b. skill or knowledge that makes one master of a subject comment. While Hornby defines mastery as complete knowledge or complete skill. From that definition, mastery means complete knowledge or great skill that makes someone a master in a certain subject.

The specificity of any individual's vocabulary knowledge depends on the person and his motivation, desires, and need for the words. Vocabulary mastery refers to the great skill in processing words of alanguage. It is an individual achievement and possession. For that reason, the biggest responsibility in increasing the knowledge is in theindividual himself. The success in widening the vocabulary mastery requires their own motivation and interest on the words of a language. From the definition above, we can conclude that vocabulary mastery is an individual's great skill in using words of a language, which is acquired based on their own interests needs and motivation. vocabulary mastery plays an

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<sup>&</sup>lt;sup>8</sup>Nur Salina Ismail, et al, "Vocabulary Teaching and Learning Principles in Classroom Practices," *ArabWorld English Journal (AWEJ)*, Vol.8, No. 3 (September 2017): 119-134.

important role in the four language skills and it has to be considered that vocabulary mastery is one of the needed components of language.<sup>9</sup>

#### 2.1.1.6 Teaching Vocabulary

Effective teachers intentionally focus on enriching and expanding student's vocabulary knowledge and model inquisitiveness about words and their meanings; they also help students develop their own skills as independent word learners. Reinforcing the threads of reading each of the three instructional strategies and show how student can foster language development on a day-to-day basis.

As a muslim, we have done studied vocabulary since we were born in this world. We started from hearing, reciting, and memorizing the Holy Qur'an. We as a Muslim should read Quran with understanding so that we can understand its deep meaning. When we know its meaning what Allah has really said in this Holy book then we can implement all the things mentioned in Quran in our daily life. Some hadith mentions advantages of memorizing the Holy Qur'an:

The Prophet Muhammad (s.a.w) said, "Whoever recites (memorize) the Qur'an secures knowledge of prophethood within his ribs [bosom], though Divine Revelation is not sent upon him. It does not befit one endowed with the Qur'an that he should be indignant with those in anger, nor should he indulge in any act of ignorance with those who are ignorant, while the Speech of Allah is there in his chest." Source: Hakim, Targhib wa Tarhib no. 2/301 - [Sahih]

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<sup>&</sup>lt;sup>9</sup>*Opcit*,21-34.

The Prophet Muhammad (s.a.w) said, Allah [swt] said, "I have sent you [O Prophet] in order to put you to test and put those to test through you. And I sent the Book to you which cannot be washed away by water, so that you may recite (memorize) it while in the state of wakefulness and sleep." Source: Hadith Qudsi, Muslim no. 2865a - [Sahih]

English vocabulary and grammar learning will be better if it is in a context related to the world of children, to be easily practiced or to communicate. Simply learn the vocabulary can be done through four stages, namely:

- 1. Introducing: the teacher introduces a new word with a clear and correct utterance using a picture or a real object.
- 2. Modeling: the teacher gives an example by acting as a model.
- 3. Practicing: teachers train students to imitate and practice.
- 4. Applying: students apply in appropriate situations with the help of teachers<sup>10</sup>

#### 2.1.2 Strategy

#### 2.1.2.1 Definition of Strategy

Strategy is a plan, a method, or series of activities designed to achieves a particular educational goal. In the world of education, strategy is defined as planning that contains about a series of activities designed to achieve certain educational goals. It means that strategy to helps the teacher handles their classroom in learning and teaching process.<sup>11</sup>

<sup>11</sup>Wina Sanjaya, *Strategi Pembelajaran Berorientasi Standar Proses Pendidikan*(Jakarta: Kencana, 2011), 126.

<sup>&</sup>lt;sup>10</sup>Kasihani K.E. Suyanto, *English for Young Learners* (Jakarta: Bumi Aksara, 2008), 47-49.

A second language employed such distinct activities called language learning strategies to make learning more pleasurable, easier, and more self-directed to new situations. Vocabulary learning strategies assist learners to take on responsibility for their own learning. According to Nation's point of view learners can achieve a large number of vocabularies can be obtained by adopting vocabulary learning strategies.<sup>12</sup>

In Islam, Allah proclaims that learning or teaching strategy is needed in lerning process, because by applying a strategy the students will easier understand about the material. Allah says in the Qur'an An-Nahl: 125: From the verse Allah asks to all moslem to teach the students by using strategy or method in learning process.

"invite (all) to the way of the Lord with wisdom and beautiful preaching, and argue with them in ways that are best and most gracious. For the Lord know the best, who have strayed from His path and who receive guidance". 13

The teacher give a strategy can be effective if it is always continuously like some stories in holy Qur'an about Prophet so that we can always remember the stories in our mind. Allah says in Al-Isra':1, Asy-Syu'ara': 192-194, At-Takwir:22-23, the stories about our Prophet Muhammad SAW got a command from Allah SWT

<sup>13</sup>Lajnah Pentashih Mushaf Al-Qur'an, *Al-Jumanatul Ali Al-Qur'an dan Terjemahan*, (Bandung: CV Penerbit J-Art, 2004), 281.

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<sup>&</sup>lt;sup>12</sup>Amir Marzban, Mojgan Firoozjahantig, "The Relationship between Willingness to Communicate and Vocabulary Learning Strategies among Iranian EFL Learners," *Theory and Practice in Language Studies*, Vol. 7, No. 11 (November 2017): 1119-1125.

Meaning: "Glory be to Him Who made His servant to go on a night from the Sacred Mosque to the remote mosque of which We have blessed the precincts, so that We may show to him some of Our signs; surely He is the Hearing, the Seeing." (Q.S Al-Isra':1)

Meaning: "And most surely this is a revelation from the Lord of the worlds (192) The Faithful Spirit has descended with it (193) Upon your heart that you may be of the warners (194) (O.S Asy-Syu'ara': 192-194)

Meaning: "And your compain is not gone mad (22) And of a truth he saw himself on the clear horizon (23) (Q.S At-Takwir: 22-23)

As learners enhance greater fluency and expression in English, it is important for them to learn more productive vocabulary knowledge and to improve their own personal vocabulary learning strategies. Having good knowledge about various types of vocabulary learning strategies and applying them in appropriate situations, students can expedite the process of vocabulary

learning. Applying strategies independently of a teacher is the most influential method to learn vocabulary.<sup>14</sup>

Classroom activities should be meaningful and involve communication. Learning strategies that work for some learners may not work for others. No vocabulary strategy by itself is totally effective; many factors influence the effectiveness and helpfulness of strategies. For example, knowing the definition of a word may be useful at a certain point but it might not serve to improve reading comprehension. The reader also has to appreciate how the word fits into the context. For writing, definitions do not always contain enough information to allow a person to use a word correctly. There is a big difference between knowing what a word means and being able to use it. This can explain why our students have problems writing meaningful sentences by using new words and why they will encounter difficulties while trying to use context as a vocabulary learning strategy.

We should instruct our students in the use of a variety of strategies to help them in a more effective way. Later, they can choose which vocabulary strategies work best for them. It is important to remember that adults are self-directed and responsible for their own decisions; they are goal oriented and learn about what is relevant to them. <sup>15</sup>So, strategy is a planned action of activities to reach consciously learning objectives designed.

<sup>14</sup>Hamed Barjesteh, And Lida Farsi, "Investigating the Interplay between Age Range and Vocabulary Learning among EFL Learners," *Theory and Practice in Language Studies*, Vol. 8, No. 2 (February 2018): 238-243.

<sup>15</sup>Clarena Larrotta, "Second Language Vocabulary Learning and Teaching: Still a Hot Topic," *Journal of Adult Education*, Vol. 40, No. 1 (2011): 1-2.

#### 2.1.3 Frayer Model

# 2.1.3.1 Definition of Frayer Model

A Frayer Model is a graphic organizer that helps students determine or clarify the meaning of vocabulary words encountered while listening, reading, and viewing texts. It is used before reading to activate background knowledge, during reading to monitor vocabulary, or after reading to assess vocabulary. This strategy supports students' acquisition of new words and using resource materials by providing students with a structure to examine words for their definitions, characteristics, examples, and non-examples. Word learning requires multiple exposures to the word within meaningful contexts.<sup>16</sup>

The Frayer model helps students go beyond definitions to examine a concept by graphically organizing their prior knowledge into different areas. The model requires students to define a target vocabulary word or concept, identify characteristics and facts for the word, and apply this information by generating synonyms (examples) and antonyms (nonexamples). This information is placed on a graphic organizer that is divided into four sections to provide a visual representation for students. This instructional strategy is designed to support concept mastery, promote critical thinking, and assist students with identifying and understanding unfamiliar vocabulary in content areas. Students are not simply memorizing a word and its definition; rather, they are doing more with that word to help them truly understand the term.

Frayer model as an ideal strategy for teaching critical content vocabulary when students need to know the defining features of a concept in depth and

<sup>&</sup>lt;sup>16</sup>Winters, Interactive frames for vocabulary growth and word consciousness. The Reading Teacher (2009), 685-690.

compare and contrast it with similar concepts. The Frayer model can also be used as a formative assessment of conceptual understanding because it activates students' thinking about a concept. Used as an in-class activity, the Frayer model also capitalizes on student interactions as they discuss, share, and work with the terminology.<sup>17</sup>

- 2.1.3.2 Implementation of Frayer Model
- ➤ Select a word from a self-contained passage of text.
- Establish the purpose of the strategy.
- ➤ Provide students with a Frayer Model and use a think-aloud as you model the process of using the Frayer Model to analyze the word and determine its meaning.
  - Write the selected word.
  - Write the characteristics of the selected word. Scaffold as needed.
  - Write examples of the selected word. Scaffold as needed.
  - Write non-examples of the selected word. Scaffold as needed.
  - Write a definition for the selected word in your own words. Scaffold as needed.
  - Check the meaning of the word with the dictionary definition.
- ➤ Have students use the Frayer Model to determine the meaning of words.

  Scaffold as needed.

#### 2.1.3.3 Purpose of Frayer Model

The purpose of the Frayer Model is to identify and define unfamiliar concepts and vocabulary. Students define a concept/word/term, describe its

<sup>&</sup>lt;sup>17</sup>Angela Falter Thomas, "Implementation of Vocabulary Strategies to Improve Scientific Literacy," *National Science Teachers Association*, Vol.39 (2016): 45-52.

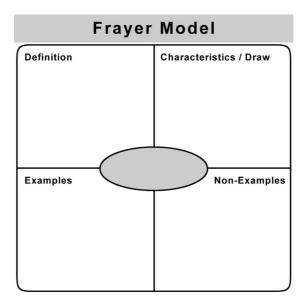
essential characteristics, provide examples of the idea and suggest non examples of the idea (knowing what a concept isn't helps define what it is). This information is placed on a chart that is divided into four sections to provide a visual representation for students. The model prompts students to understand words within the larger context of a reading selection, as it asks students to analyse the concept/word (definition and characteristics) and then synthesise or apply this information by thinking of examples and non examples. It also activates prior knowledge of a topic and builds connections.

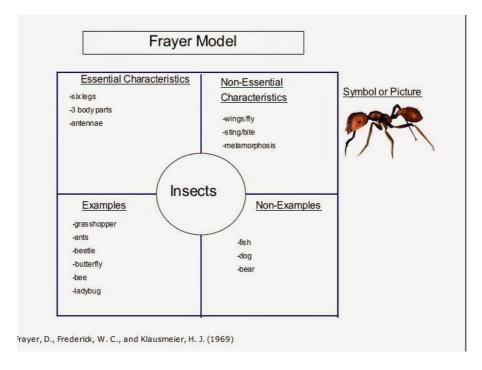
# 2.1.3.4 Explicitly Teaching the Frayer Model

- ❖ Step 1 Explain the Frayer model chart to the class by using a common word to demonstrate the various components. Model the type and quality of desired answers when giving the examples. Think out loud as you try to come up with examples and non examples, etc. Pictures/symbols can also be used.
- ❖ Step 2 Then review a pre selected list of key concept words with the class before reading about the topic in the textbook. Read the text selection.
- Step 3 Choose a key concept word from the topic read and have students help you complete the Frayer chart.
- Step 4 Pass out blank copies of the Frayer Model or have students create a chart in their copies.
- ❖ Step 5 Then students practice the strategy in pairs or in small groups with the key concepts and key vocabulary from the topic. (Each group could also be given different key concept words).

Step 6 The groups share their completed charts with each other. Students can then add additional words/images/symbols to the Frayer chart until all four categories are substantially represented.

# 2.1.3.5 Frayer Model Examples





# 2.1.3.6 The Advantages of Frayer Model

1. This strategy is excellent for revising vocabulary.

- Making the active students because every student have to define a concept or word or term.
- 3. Giving the oppurtunity for all of students to decribe the characteristics, provide examples of the idea and suggest non examples of the idea.
- 4. Use critical thinking skills as they ask thoughtful questions to narrow down a large list of words to one "secret word."
- 5. This strategy is a good activity for reviewing important vocabulary at the end of a lesson.
- 6. Make the team work cohesively and build up the confidence of students
- 2.1.3.7 The Disadvantages of Frayer Model
- Some of the students will be passive because they have lack of vocabulary.
- 2. Some of the students missing the vocabularies because they do not focus just some active students who can focus on this stratergy.
- 3. More confident students tend to dominate when defining the secret word.
- 4. This strategy will need more time.

# 2.2 Conceptual Framework

In English teaching proses, vocabulary is an essential task and an important part for learners. It is supposed to be a very effective as a tool of communication. It caries the highest level of importance within peoples' verbal interaction. The overall goal of comprehensive vocabulary strategy is to expand both receptive and expressive vocabularies, andmove words from the receptive level to expressive level. An additional goal is to provide many opportunities for

children to acquire deep knowledge of words, and the ability to understand and use of words flexibility and appropriately in many different context.

Frayer Model is used to categorized students' understanding of vocabulary word or concept they are studying. Students can make a list of the definition, characteristics, examples, and non-examples on a chart with four quadrants. This model helps the students to develop a conceptual understanding of new vocabulary or creativity concept. Using the particular graphic organizer helps students to think about this term in a variety of ways. It allows them to visually demonstrate what they categorize based on their new knowledge.

This can also serve as a great tool for review or as a study aid. The atmosphere classroom is more enjoyable and productive for learners. It is also good for revising and pronouncing vocabulary. This strategy can create positive energy to review important vocabulary at the end of a lesson. Their mind will be refresh to get the secret words from every moment.

By using Frayer Modelin learning vocabulary continuously, the student's memorization of words will be sustained in long term memory. Students' vocabulary achievement will be increased. Therefore, it can be assumed that using Frayer Model will improve students' vocabulary mastery. It will apply by the English teacher in learning process.

Based on the explain above, it can be summarized that Frayer Modelcan be used and to improve students' vocabulary mastery in long term memory. The overall, the researcher makes a simple plan from a chart or figure. It can make more understanding for the readers and the next researchers.

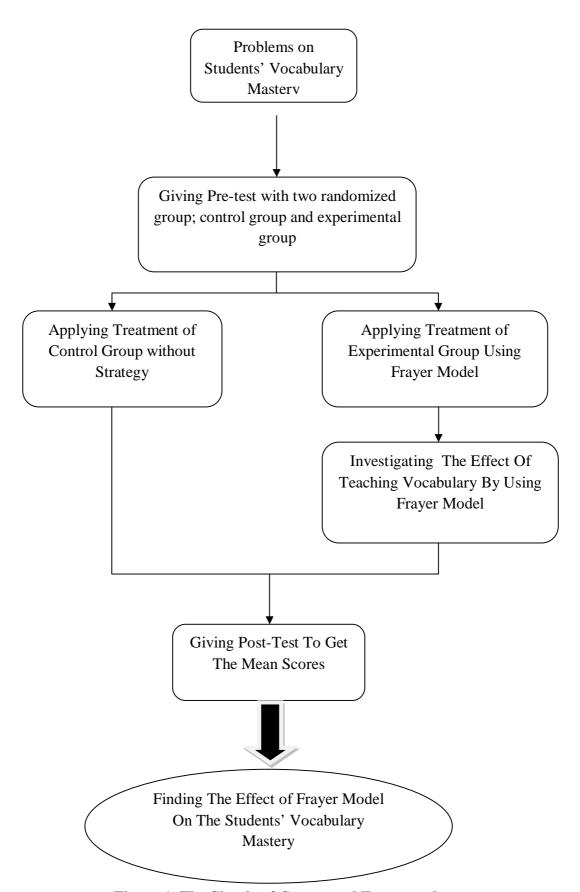


Figure 1. The Simple of Conceptual Framework

# 2.3 Hypotheses

The term of hypothesis comes from Greek consist of two words they are "Hupo" and "Thesis" (statement or theory). Karlinger and Tuckman define hyphotesis is a suppose to the correlation between two or more variables, and Sudjana in Method of Statistic define hyphotesis is assumption or suppose about thing that made to explain it and often asked to do check.<sup>18</sup>

In accordance with theoretical and conceptual frame, the hypotheses is formulated as follows:

Ha: There is any significant effect of using Frayer Model on the Students' Vocabulary Mastery.

Ho: There is no significant effect of using Frayer Model on the Students' Vocabulary Mastery.

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<sup>&</sup>lt;sup>18</sup>Indra Jaya, and Ardat, *Penerapan Statistik Untuk Pendidikan* (Bandung: Citapustaka Media Perintis, 2013), 107.

#### **CHAPTER III**

#### RESEARCH METHODOLOGY

### 3.1 Research Design

This study was conducted in experimental research design with pre-test and post-test design. The design wasapplied in order to investigate the effect of using Frayer Model on students' vocabulary mastery. This research consist of two different groups, namely experimental group for VIII B and control group for VIII C. The experimental was teached by using Frayer Model and control group was teached by conventional method. Both of group was given pre-test and post-test with the same material and test. There were two variables. The independent variable was Frayer Model and the dependent was vocabulary. <sup>19</sup>The research design can be figured as following:

**Table 3.1Experimental Research Design** 

Randomly Assigned	Pre-test	Treatment	Post-test
Experimental Group	✓	R (using Frayer Model)	✓
Control Group	✓	Q (without using Frayer	✓
		Model	

### 3.2 Population and Sample

The research was conducted in SMP IT AL IHYA TANJUNG GADING. It was located at Jl. Sawo No. 01 Tanjung Gading, Perkebunan Sipare-Pare, Kec. Sei Suka, Kab. Batubara, North Sumatera. It was carried out at eighth grade students of SMP IT AL IHYA TANJUNG GADING.

<sup>&</sup>lt;sup>19</sup>Syaukani, *Metode Penelitian : Pedoman Praktis Penelitian dalam Bidang Pendidikan*(Medan: Perdana Publishing, 2015), 18.

Population is a set (collection) of peoples, events, or things that have characteristics and they can be object of research.<sup>20</sup> Population is the generalization area which consist of object and subject that has the quantity and particular characteristics settled by the researcher.<sup>21</sup> The population of this research was the eighth grade of SMP IT AL IHYA Tanjung Gading which consisting of three classes. Total number of population were 87 students divided into three classes.

**Table 3.2 Population** 

No	Class	ITS
1	VIII A (Ibnu Firnas)	35
2	VIII B (Ibnu Rusydi)	26
3	VIII C (Al-Jazary)	26

The sample is any part of a population of individuals information is obtained and the result of research will use as representation of population overally.<sup>22</sup> Sample is a part of the population. The researcher used purposive sampling. The researcher chosen this sampling technique because there were some reasons.<sup>23</sup> For the efficiency of research, only a part of the students were choosen randomly as representation of the whole population to get the easier the information, and also just two classess that consist the same totality of students. The researcher took 52students as samples, 26 students for each control group and

<sup>&</sup>lt;sup>20</sup>Suryani, dan Hendryadi, *Metode Riset Kuantitatif* (Jakarta: Prenadamedia Group,2015), 190.

<sup>&</sup>lt;sup>21</sup>Syahrum, dan Salim, *Metodologi Penelitian Kuantitatif*, Bandung: Cita Pustaka Media, 2016), 113. <sup>22</sup>Opcit, 192.

<sup>&</sup>lt;sup>23</sup>Indra Jaya, dan Ardat, Penerapan Statistik Untuk Pendidikan (Bandung: Citapustaka Media Perintis, 2017), 42.

experimental group. Class VIII B as the experimental groups include 26 students were teaching by using Frayer Model. Class VIII C as control group include 26 students without using Frayer Model. This research hold at this school because the school was easy to do research for the purpose of collecting data and suitable for ability and limitation of time and finance.

Table 3.3 Sample

No	Class	Number
1	VIII B	26
2	VIII C	26
	Total	52

#### 3.3 Data Collection

The researcher used quantitative data in this study. Quantitative was a metric or numeral data. It was often associated with largescale research, but can also serve smaller scale investigations, with case studies, action research, correlational research and experiments. The researcher used primary data to get informations in experimental study using Pre-test and post-test. In this research, the researcher did two observations, before experiment and after experiment. The observation before experiment was Pre-test, and the observation after experiment was Post-test. In the middle of Pre-test and Post-test, the researcher gave the treatment to the class that was usedFrayer Model in the class.

In collecting the data, the vocabulary test gave to the students was multiple choice. There were 15 items of multiple choices in each of the test that consist of 5 questions of synonym, 5 questions of antonym, and 5 questions of describing of

30

words. Each item of tests includes option, namely a,b,c, and d. Students chose the

correct answer.

3.4 Data Analysis

The researcher used the data from students' tests to find out the result of

students' vocabulary knowledge by implementing Frayer Model in the

experimental class, then without Frayer Model in the control class. After all

students' scores were obtained, next the researcher conducted prerequisite data

analysis: normality and homogeneity. The normality test and homogeneity test

were tested by using SPSS. After analyzed normality test and homogeneity test,

the researcher used T-test to find out the differences between students' score that

are taken from pre-test and post-test in experimental class and control class.

To find out the effect of using Frayer Modelon the students' vocabulary

mastery, mean of the control group and experimental group will be compared by

using t-test, as follows:

$$t = \frac{Ma - Mb}{\sqrt{\left(\frac{da^2 + db^2}{Na + Nb - 2}\right)\left(\frac{1}{Na} + \frac{1}{Nb}\right)}}$$

In which:

t : tot

: total score

Ma

: the mean of experimental group

Mb

: the mean of control group

 $Da^2$ 

: the standard of deviation of experimental group

Db<sup>2</sup>: the standard of deviation of control group

Na : the total numbers of experimental group

Nb : the total numbers of control group

### 3.4.1 The Statistical Hypothesis

After obtaining the t-test, the researcher compared t-test and t-table. Testing hypothesis used criteria with significant degree 5% (0.05). The conclusion was obtained as follows:

H $\alpha$  is accepted if to >t<sub>tabel</sub>or if the Sig. (2-tailed) < 0.05.

Ho is accepted if to <t<sub>table</sub>, or if the Sig. (2-tailed) > 0.05.

The hypotheses of this research were:

a. Alternative Hypothesis ( $H\alpha$ ): "There is a significance difference of students" vocabulary mastery between students who are taught by Frayer Model and students who are taught without using Frayer Model."

b. Null Hypothesis (Ho): "There is no significance difference of students" vocabulary mastery between students who are taught by Frayer Model and students who are taught without using Frayer Model."

### 3.4.2 Validity

The validity of a test refers to the degree to which what is being measured what the researchers intended. There was a number of aspects of the validity of a

measure that should be checked. To find out the validity of the test we can used product moment correlation by Pearson:<sup>24</sup>

$$r_{xy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N(\sum X^2) - (\sum X)^2\}\{N(\sum Y^2 - (\sum Y)^2\}}}$$

N =Number of samples

 $\sum X =$ Score item

 $\sum Y = \text{Total scores}$ 

 $r_{xy}$  = Correlation coeffecient

To interprets the test validity price, consult the price at the criticism price of r at product moment,  $\alpha = 0.05$ . If  $r_{count} > r_{table}$  so the item is valid.

### 3.4.3 Realibility

To find out the realibility of the test, we can used Kuder Richardson-21 formula. The formula can be seen as follows:<sup>25</sup>

$$r_{11} = \frac{K}{K-1} \left(1 - \frac{M(K-M)}{KS^2}\right)$$

Where:

K =The number of test items

M = Mean of the score

S = Standard deviation of the score

<sup>&</sup>lt;sup>24</sup>Sudjana, *Metode statistika* (Tarsito Bandung, 2009), 369.

# **3.4.4** Normality Test

Normality test is done to know whether the data that got from the sample have a normal distribution or not. In this research, the normality test will be done by using Lilifors test. After getting  $L_{o,}$  it was compared to  $L_{t}$   $\alpha-0.05$  the characteristic of Lilifors test is:

- ightharpoonup If  $L_0 < L_{t=}$  data is normal
- $If L_0 > L_{t=} data is not normal$

# 3.4.5 Homogeneity Test

Homogenity test is done to know whether the sample is homogeneous or not. Homogenity test is done in this research is Levene test. After getting the  $F_o$ , it will be compared to  $F_t \alpha - 0.05$  the characteristic of Levene test is:

- ightharpoonup If  $F_o < F_t =$ sample is homogenous
- ightharpoonup If  $F_o > F_t =$  sample is heterogeneous

#### 3.5 Research Procedure

#### 3.5.1 Pre-test

Pre-test gave to both of the classes, control group and experimental group before treatment. It was done to find out the quality and homogeneity of the samples.

#### 3.5.2 Treatment

A treatment conducted to the experimental group to find out the effect of teaching vocabulary by using Frayer Model. The steps and the activities were

teaching and learning vocabulary process in experimental group and control group was as follows :

**Table 3.4 The Treatment for Experimental Group and Control Group** 

Experimental	Group	Control Group	p (Applying	
(Using Frayer Model)		Conventional Method		
Teacher's	Students'	Teacher's	Students'	
Activity	Activity	Activity	Activity	
Step 1				
Teacher opens	the class by	Teacher opens	the class by	
greeting to the	students and	1	•	
explains in brie	ef what they	greeting to the	students and	
are going to	do in the	explains in brid	ef what they	
meeting.		are going to	do in the	
Students paid	attention to	meeting.		
the teacher's	explanation			
and introduc	etion, give	Students paid	attention to	
comment or que	estions.	the teacher's	explanation	
Step 2			-	
<b>Teacher</b> gives	the copies of	and introduc	etion, give	
the text 1 to the	students and	comment or que	estions.	
ask them to read	the text			
Students do	what the	Tanahan aiyaa	the comics of	
teacher asks th	e unfamiliar	<b>Teacher</b> gives	the copies of	
words (making	a list of key	text 1 and asks	them to read	
concept).		the text.		
Step 3		Studente de	what the	
Teacher with	the students	<b>Students</b> do	what the	
select the key of	concept from	teacher asks	and then	
the list.				

**Students** with the teacher will select the key concept from the list and then follow the teachers' clue.

# Step 4

**Teacher** explains the Frayer Model chart.

**Students** take the Frayer chart or make their own.

# Step 5

**Teacher** asks the students fill in the chart in a group.

**Students** complete Frayer Model in a group.

# Step 6

**Teacher** shares their Frayer Model and let the students add the images/symbols

**Students** discuss their work with others.

underline the unfamiliar words (making a list of new vocabulary).

**Teacher** with the students select the new vocabulary by using dictionary and then the students answer the meaning it.

**Students** translate the new vocabulary.

Teacher will share their work with the other group.

**Students** discuss their work with other group.

#### 3.5.3 Post-test

After conducting the treatment, the post-test gave to the students. The aim was to get the mean scores of experimental group and control group. It applied to analyze and evaluate both of the group, then to know the effect of treatment of teaching presentation in both group.

#### **CHAPTER IV**

#### FINDING AND DISCUSSION

## 4.1 Findings

#### **4.1.1** Description of Data

The data of this research were obtained from the result of test from both of class, the experimental class (VIII-C Al-Jazary) and the control class (VIII-B Ibnu Rusydi). In the experimental class, the students were taught by using Frayer Model, meanwhile in the controlled class, the students were taught without Frayer Model. The researcher measured students' vocabulary mastery by using a test in multiple choices form. The test consisted of 25 test items after validity test.

# **4.1.1.1** Experimental Class (VIII-C Al-Jazary)

The result of pre test and post test in experimental class with 26 samples of VIII-C, the researcher got the total of pre test was 1.824 with mean (M) was 70,15. While the total of post test in experimental class after treatment is given to 26 samples was 2.285 with mean (M) was 87,88. It can be seen in (appendix vii) that thethe lowest score in pre-test was 16 and the highest score in pre-test was 96. While in post-test, the lowest score was60 and the highest score was100 points. There was significant effect in improvement of student's score between pre-test before treatment and post-test after treatment using Frayer Model.

### 4.1.1.2 Control Class (VIII-B Ibnu Rusydi)

From the (appendix viii), it can be shown that the total of pre test in control class with 26 samples of VIII-B was 932 and mean (M) of the pre-test in control class was 35,85 while in post test was 64,46 with the total was 1.676. After

that the lowest score in pre-test was 12 and the highest score in pre-test was84. While in post-test, the lowest score was48 and the highest score was 78 points.

Based on the explanation above, it shows that the student's score in experimental class was higher than student's score in control class, where in pretest (70,15) and the score in post-test (87,88). The total score of the mean score in experimental and control class showed that there was significant effect in improvement of student's score between using treatment in experimental class and without using treatment in control class.

### 4.1.2 Analysis of Data

# **4.1.2.1** Validity

The instruments for data analysis which is multiple choice test, they are test of validity and realibility. Validity test by using microsoft excel 2007.

Tabel 4.1 Finding The Validity of Data r table (df=20, =0.05) = 0.4438

No	r count	r table	Result
Item			
1	0,449256286	0,4438	Valid
2	0,426360401	0,4438	Invalid
3	0,630159988	0,4438	Valid
4	0,718278196	0,4438	Valid
5	0,540925555	0,4438	Valid
6	0,622047165	0,4438	Valid
7	0,445198353	0,4438	Valid

8	0,384370494	0,4438	Invalid
9	0,452249235	0,4438	Valid
10	0,639577001	0,4438	Valid
11	0,452249235	0,4438	Valid
12	0,378736436	0,4438	Invalid
13	0,469984499	0,4438	Valid
14	0,663626675	0,4438	Valid
15	0,47960982	0,4438	Valid
16	0,465895407	0,4438	Valid
17	0,630159988	0,4438	Valid
18	0,718278196	0,4438	Valid
19	0,426360401	0,4438	Invalid
20	0,630159988	0,4438	Valid
21	0,718278196	0,4438	Valid
22	0,540925555	0,4438	Valid
23	0,622047165	0,4438	Valid
24	0,426360401	0,4438	Invalid
25	0,630159988	0,4438	Valid
26	0,718278196	0,4438	Valid
27	0,540925555	0,4438	Valid
28	0,622047165	0,4438	Valid
29	0,522624154	0,4438	Valid
30	0,630159988	0,4438	Valid

By comparing  $R_{count}$  for 30 items to  $R_{table}$  for N (the total of students) =20 and  $\alpha = 0.05 = 0.4438$ . The result was 5 items have lower score or are not significantly correlated. The items that can not use as research instrument were items number 1, 7, 12, 16, 24. The 25 questions are valid, or significantly correlated be able to use as research instrument. They stated as valid items, because  $R_{count} > R_{table}$  (0,4438). So there were only 25 multiple choices more than 0,4438 that can use to pre test and post test.

# 4.1.2.2 Reliability

Table 4.2
Finding Reliability
Reliability Statistics

Cronbach's Alpha	N of Items
,920	30

Finding reliability using SPSS V 20, the researcher got the result of realibility level is high category, because  $r_{count} > r_{table}$  (0,920> 0,444) with N (Total of students) was 20 students and 30 items of multiple choices. Significance level  $\alpha$  = 0,05 N=20 = 0,444. It means that the test is reliable (0,444  $\leq$  0,920  $\leq$  1,00).

### 4.1.2.3 Normality Test

In this research, normality test was tested by using Lillieforsin SPSS V 20 to count the normality of each test. The test would be normal distribution if the result of absolute differences number showed less than the result in Lilliefors table with the number of sample (n) is 26.

Table 4.3

Normality of Pre Test

# **Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pre Test Experiment	,192	26	,015	,906	26	,021
Pre Test Control	,224	26	,002	,895	26	,012

a. Lilliefors Significance Correction

Based on the data in Table 4.3, it shows that the normality is significant. It is shown by the significance in Lilliefors table of Experiment Class data is 0.015. Meanwhile, the significance in Lilliefors table of Control Class data is 0.002. Both significances of Experiment class data and Control class data are much less than the calculation Lillieforstable with critical points of 26 = 0,170. It can be concluded that the pre-test results in both experimental class and control class are normally distributed.

Table 4.4

Normality of Post-test
Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Post Test Experiment	,199	26	,009	,782	26	,000
Post Test Control	,186	26	,021	,927	26	,066

a. Lilliefors Significance Correction

Based on the data in table 4.4, it shows that the data of experiment class is 0.009 while the data of control class is 0.021. It can be stated that the data of experiment and control class are much less than the calculation Lillieforstable with critical points of 26 = 0.170. So, the post test result in both experiment and control class are normally distributed.

Below is presented the frequency distribution of pre-test and post test scores of the control and the experimental classes as the details for the normality test.

# **4.1.2.4** Homogeneity test

After doing the normality test, the researcher did the homogeneity test that would be calculated by using SPSS V 20 in order to test the similarity of the both classes, experiment class and control class. The researcher used Levene statistic test to calculate the homogeneity test. The data would be homogeneous if the result of data calculation is higher than 0.05. The results are presented as follows

Table 4.5

Pre-test of Homogeneity of Variances both Control and Experiment

Test of Homogeneity of Variances

Nilai

Levene Statistic	df1	df2	Sig.
2,136	1	50	,150

The result of the data in Table 4.5 showed that the significance of pre-test between experiment class and control class was 0.150. It can be stated that the data of pre-test experiment and control class are much less than the calculation Ftable with critical points 50 = 4.03. So, the posttest result in both experiment and control class are normally distributed.

Table 4.6

Post-test of Homogeneity of Variances both Control and Experiment

Test of Homogeneity of Variances

Nilai

Levene	df1	df2	Sig.
Statistic			
2,967	1	50	,091

Based on the data in the Table 4.6, the significance of post-test between experimental class and control class was 0.091. It can be stated that the data of post test-experiment and control class are much less than the calculation Ftable with critical value 50 = 4.03. So, the posttest result in both experiment and control class are normally distributed.

#### 4.1.2.5 T-test

After measuring the normality and homogeneity test, then the researcher calculated the data by using t-test in SPSS V 20 to know the significant difference between students' vocabulary mastery in experimental class and students' vocabulary mastery in control class. Next, the researcher used t-test to get empirical evidence about the effect of Frayer Model on students' vocabulary

mastery by using SPSS V 20. The researcher used the data from post-test of experiment and control classes, and gained score from both classes. The t-test result of posttest score both control and experiment class is presented in the table below:

Table 4.7

The T-test Result of Post-test Score both Control and Experiment Class

Group Statistics

	Faktor	N	Mean	Std. Deviation	Std. Error Mean
Nilai	Post Test Experiment	26	87,88	14,086	2,763
2 ,2141	Post Test Control	26	64,46	8,896	1,745

# **Independent Samples Test**

	Levene's		t-test for Equality of Means						
	Test	for							
	Equali	ty of							
	Variances								
	F	Sig.	T	Df	Sig.	M	Std.	95%	
					(2-		Error	Confide	nce
					taile		Diffe	Interval	of the
					d)		rence	Differer	nce
								Lower	Upper
Equal variances assumed	2,967	,091	7,169	50	,000	23,423	3,267	16,860	29,986
Equal variances not assumed			7,169	42,205	,000,	23,423	3,267	16,830	30,016

The result of posttest both experiment class and control class was conducted after doing the treatment. Based on the data in Table 4.7, it can be seen that there was a significant different between the experiment class (M (Mean) = 87.88 and SD(Standar Deviasi) = 14.086) and control class (M (Mean) = 64.46 and SD (Standar Deviasi) = 8.896).

Next, the researcher was compared  $t_{value}$  and  $t_{table}$  to know whether using Frayer Model in teaching vocabulary is effective to improve students' vocabulary or not. Reviewing to the data in Table 4.7, it shows the result of  $t_{value} = 7,169$ with the Sig. (2-tailed) = 0.000. And  $t_{table}$  of 0.05 (5%) as the significance level is 2.009 with 50 the degree of freedom (df). It can be found that  $t_{value} = 7.169 > t_{table} = 2.009$  and the Sign. (2-tailed) is 0.000< 0.05. It means that Frayer Modelis effective toward students' vocabulary mastery.

### 4.1.3 HypothesisTest

Testing the hypothesis becomes the important one because the calculation of hypothesis test is to answer the formulation of the problem of this research.

Then the criteria of hypotheses test as follow:

- 1.  $H_{\alpha}$  is accepted if  $t_0 > t_{tabel}$  or if the Sig. (2-tailed) < 0.05.
- 2.  $H_0$  is accepted if  $t_0 < t_{table}$ , or if the Sig. (2-tailed) > 0.05.

Based on the result of posttest of experiment class and control class, it can be found that the  $t_{value} = 7.169 > t_{table} = 2.009$  in the significance level of 0.05 (5%) and the Sign. (2-tailed) is 0.000< 0.05. To sum up, the  $t_{value} > t_{table}$  and the Sign. (2-tailed) < 0.05, it means that  $H_{\alpha}$  is accepted. So, I can be concluded that Frayer Model is effective toward students' vocabulary mastery.

#### 4.2 Discussion

Based on the analysis of data in the eighth grade students' of SMP IT Al Ihya Tanjung Gading, the students' vocabulary mastery is improved by using Frayer Model. The results of data from the test were divided pre-test and post-test. The students that were taught by Frayer Model had higher score than those who were taught by without Frayer Model.

To sum up, the data of research had been conducted based on the procedures. As the research findings and discussion above, there is significance by using Frayer Model toward the students' vocabulary mastery, because the resultshows that the hypothesis of H0 is rejected and H $\alpha$  is accepted. The significance differences are between by using Frayer Model and without using Frayer Model.

Based on the explanation above, the researcher concluded that the implementation of Frayer Model had significant effect to the students' ability in learning vocabulary, especially for the students of SMP IT Al Ihya Tanjung Gading.

#### **CHAPTER V**

### **CLOSING**

#### **5.1 Conclusion**

Based on the result of the data analysis and discussion, the researcher concludes that the use of Frayer Model has significantly effects of students' vocabulary mastery, since the score of the students who were taught by Frayer Model is higher than using conventional method at the eighth grade students of SMP IT Al Ihya Tanjung Gading. From the t-test calculation it was found that the  $t_{value}$  is higher than  $t_{table}$ . Therefore,  $t_{value}$  is 7.169 and  $t_{table}$  is 2.009 ( $t_{value}$ >  $t_{table}$ , 7.169 > 2.009). It means that  $H_0$  is rejected and  $H_a$  is accepted. There is a significant effect of Frayer Modelon the students' vocabulary mastery.

#### **5.2 Recommendation**

Based on the conclusion above, the researcher gives some recommendations as follows:

- The principal of SMP IT Al Ihya Tanjung Gading is recommended to give direction to the English teachers about English teaching strategy by using Frayer Model.
- English teachers are recommended to use Frayer Modelin their teaching learning process in order to affect the students' vocabulary mastery. The English teachers could evaluate students, how deep they understand the material in each meeting.

- Students can develop every new vocabulary in their concept because
   Frayer Model is easy to make into simple concept and every students will be active.
- 4. Other researchers who are interested in doing a research related to this study should try to apply Frayer Modelon different level of learners through different genre to prove the effectiveness of Frayer Modelon students' vocabulary mastery.

Finally, the resarcher considers that this study can be reference from the next researcher that has the similar topic with this study.

### **5.3 Implication**

Implications are drawn from the research finding. The research came with a finding that there is a significant difference on the students' vocabulary mastery between students who are taught without using Frayer Model and those who are taught without using Frayer Model. Moreover, this research implies that the use of Frayer Model is needed in teaching vocabulary.

Considering the conclusion drawn above, it implies that the use of Frayer Model is capable to promote the improvement of students' vocabulary mastery in which it can be seen from the progress of the students' vocabulary scores after given treatment using Frayer Model. It is expected that the English teachers are highly recommended to utilize communicative Frayer Model on the teaching of vocabularyin order to affect students' vocabulary mastery.

Students are motivated and relaxed in learning vocabulary process when they are taught using Frayer Model. Therefore, it implies that the use of Frayer Model can keep students' interest and help them to understand and easy to memorize content words category with the enjoyable situation in the classroom and close interaction between teacher and students.

In summary, the use of Frayer Model during the research can affect the students' vocabulary mastery. Therefore, the application of Frayer Model needs to be applied continuously in teaching vocabulary. It is because the use of Frayer Model can be effective strategy to help the students practice vocabulary and create an enthusiastic learning process so that the standard of competence of learning process can be achieved.

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#### **APPENDIX I**

### LESSON PLAN I (EXPERIMENTAL CLASS)

### A. Identity

Subject : English

School : SMP IT AL IHYA TANJUNG GADING

Class : VIII C

Topic : Write a short messages and make a notices

Time : 4 x 40 Minutes (2 meetings)

# **B.** Standard Competence

6. Comprehension meaning in short functional text and monolog and sustained on daily activity.

# C. Basic Competence

6.2. Comprehending the retorika ways in simple functional writing text by using language accurately, fluency and accepting an interaction with the closer environment.

#### **D.** Indicators

- To mentioning and to writing the examples of messages and notices in daily activities.
- b. To mentioning the vocabularies especially content words category.
- c. To be able to write the vocabularies into Frayer Model.

### E. Objectives

- a. Students are able to mention and to write the examples of messages and notices in daily activities.
- Students are able to mention the vocabularies especially content words category.
- c. Students are able to write the vocabularies into Frayer Model.

#### F. Material

- a. The examples of messages in daily activities.
- ❖ My mom was invited to a teacher training for one week in Jakarta.

  Before she went there, she wrote many notes for us, on a piece of paper and then stuck the paper on the board in the living room.
- Wash the dishes straightaway after you finish eating.
- Sweep the floor twice a day, in the morning before you go to school and in the afternoon.
- You can play games, but make sure you do your homework first.
- Turn off the lights before you go to bed.
- You have a lot of fruits in the refrigerator. Eat enough fruit and vegetables everyday.
- Don't forget to water the plant in the afternoon.
- Always have a breakfast before you go to school.
- Dry the towels on the line after you take a bath.
- Don't make a mess. Put your dirty clothes in the basket.
- Make sure the backdoor is locked before you go to bed.
- Don't forget to close the windows before you leave the house.

- Make the bed every morning!
- Mop the floor at least every two days!
- ❖ The activities to do in the morning on the blue paper.
- ❖ The activities to do in the afternoon on the green paper.
- ❖ The activities to do in evening or at night on the pink paper.
- ❖ The activities to do at any time of the day on the yellow paper.
- ❖ Make some plans to ride on a bicycle to exercise on the weekends, to watch video together in the afternoon, to do Math homework together, to visit a sick friend in the hospital, to return a book in notebook.
- b. Worksheet (Find out some notices in the hospital, school, office, street, library, and mosque).

## **G.** Learning Strategy

- a. Learning strategy :Frayer Model
- b. Learning method :Group discussion, Questioning and Answering question.

### H. Source/Media

Source: English Textbook, dictionaries, internet.

Media: Visual Media/origami letter, White Board, Broadmarker, Stick Notes.

# I. Teaching Learning Procedure

Steps:

#### 1. Introduction

- 1) The teacher opens the class by greeting the students.
- 2) Pray together before start lesson.

3) The teacher does ice breaking with the students.

# a. Apperception:

1) The teacher asks about the last material.

#### b. Motivation

- 1) The teacher motivates the student and arise their attention to the topic which will be learned.
- 2) The teacher introduces the topic and explain the purpose its topic.

#### 2. Main Activities

### a. Exploration:

- 1) The teacher asks the students about messages and notices in their activities.
- 2) The teacher asks the students what they have known about personal messages and general notices.

### **b.** Elaboration:

In this lesson the teacher uses the Frayer Model.

- 1) Teacher explains about Frayer Model.
- 2) Teacher explains the procedures of using Frayer Model.
  - > Select a word from self-contained passage of text.
  - > Write the definition.
  - > Write the characteristics of the selected word.
  - ➤ Write the synonym/example of the selected word.
  - ➤ Write the antonym/non-example of the selected word.
- 3) Teacher explains how to write down the vocabularies in the messages and general notices by applying Frayer Model.

- 4) Teacher gives examples of messages and notices.
- 5) Teacher asks the students to write down some messages and notices in each group.

#### c. Confirmation

- 1) The teacher asks the students about the material have not understood yet.
- 2) The teacher and students make conclusion together.
- 3) The teacher asks the students to finish the task.

### 3. Close Activities

- 1) The teacher gives homework in group.
- 2) The teacher closes the learning by greeting the students.

#### J. Evaluation

1) Technique : Written test

2) Form : Text

3) Instrument test : Enclosed

### K. Rules of Assessment

• Score for every correct answer = 10

• Maximum score 10x10 = 100

• Students' mark

$$S=\frac{R}{N} \times 100$$

Where:  $S = Score ext{ of the Test}$ 

R= Number of Correct Answer

N=Number of Question

# Tanjung Gading, 07 May 2018

Known by:					
Principal of SMP IT AL IHYA	English Teacher	English Teacher			
(Ahmad Hadian S.Pd.I)	(	)			
Resea	nrcher				
(Cikita R	ahmadani)				

#### **APPENDIX II**

# LESSON PLAN II (CONTROL CLASS)

# A. Identity

Subject : English

School : SMP IT AL IHYA TANJUNG GADING

Class : VIII B

Topic : Write a short messages and make a notices

Time : 2 x 40 Minutes (1 meeting)

# **B.** Standard Competence

6. Comprehension meaning in short functional text and monolog and sustained on daily activity.

# C. Basic Competence

6.2. Comprehending the retorika ways in simple functional writing text by using language accurately, fluency and accepting an interaction with the closer environment.

### **D.** Indicators

- To mentioning and to writing the examples of messages and notices in daily activities.
- b. To mentioning the vocabularies especially content words category.
- c. To be able to write the vocabularies.

### E. Objectives

- a. Students are able to mention and to write the examples of messages and notices in daily activities.
- Students are able to mention the vocabularies especially content words category.
- c. Students are able to write the vocabularies.

#### F. Material

- a. The examples of messages in daily activities.
- My mom was invited to a teacher training for one week in Jakarta.
  Before she went there, she wrote many notes for us, on a piece of paper and then stuck the paper on the board in the living room.
- Wash the dishes straightaway after you finish eating.
- Sweep the floor twice a day, in the morning before you go to school and in the afternoon.
- You can play games, but make sure you do your homework first.
- Turn off the lights before you go to bed.
- You have a lot of fruits in the refrigerator. Eat enough fruit and vegetables everyday.
- Don't forget to water the plant in the afternoon.
- Always have a breakfast before you go to school.
- Dry the towels on the line after you take a bath.
- Don't make a mess. Put your dirty clothes in the basket.
- Make sure the backdoor is locked before you go to bed.
- Don't forget to close the windows before you leave the house.

- Make the bed every morning!
- Mop the floor at least every two days!
- ❖ The activities to do in the morning on the blue paper.
- ❖ The activities to do in the afternoon on the green paper.
- ❖ The activities to do in evening or at night on the pink paper.
- ❖ The activities to do at any time of the day on the yellow paper.
- b. Worksheet (Find out some notices in the hospital, school, office, street, library, and mosque).

# **G.** Learning Strategy

- a. Learning strategy: Conventional.
- b. Learning method: Discussing, Questioning and Answering question.

#### H. Source/Media

Source: English Textbook, dictionaries, internet.

Media: White Board and Broadmarker.

# I. Teaching Learning Procedure

Steps:

#### 1. Introduction

- 1) The teacher opens the class by greeting the students.
- 2) Pray together before start lesson.
- 3) The teacher does ice breaking with the students.

# a. Apperception:

1) The teacher asks about the last material.

#### b. Motivation

- The teacher motivates the student and arise their attention to the topic which will be learned.
- 2) The teacher introduces the topic and explain the purpose its topic.

#### 2. Main Activities

### a. Exploration:

- 1) The teacher asks the students about messages and notices in their activities.
- 2) The teacher asks the students what they have known about personal messages and general notices.

#### b. Elaboration:

- 1) Teacher explains about the examples of messages and notices.
- 2) Teacher explains how to write down the vocabularies in the messages and general notices.
- 3) Teacher asks the students to write down some messages and notices.

#### c. Confirmation:

- 1) The teacher asks the students about the material have not understood yet.
- 2) The teacher and students make conclusion together.
- 3) The teacher asks the students to finish the task.

#### 3. Close Activities

- 1) The teacher gives homework.
- 2) The teacher closes the learning by greeting the students.

•		4 •
J.	Eval	uation

1) Technique : Written test

2) Form : Text

3) Instrument test : Enclosed

# K. Rules of Assessment

- Score for every correct answer = 10
- Maximum score 10x10 =100
- Students' mark

$$S=\frac{R}{N}\times 100$$

Where: S= Score of the Test

R= Number of Correct Answer

N=Number of Question

Tanjung Gading, 07 May 2018

Known by:

**Principal of SMP IT AL IHYA** 

**English Teacher** 

(Ahmad Hadian S.Pd.I)

)

Researcher

(Cikita Rahmadani)

# APPENDIX III

Name:

# **Instrument of Validity**

# **English Vocabulary Test**

Class:	
I. Answer These Questions	<b>:!</b>
1. If you are in the zoo, you ha	ave to be
a. Happy	c. Silent
b. Angry	d. Sad
2. A thing that you must have	before you write, is
a. Scissors	c. Ruler
b. Pen	d. Glue
3. What does mother do in the	kitchen
a. Teach	c. Sleep
b. Cook	d. Watch
4. A place to put the clothes is	called
a. Cupboard	c. Wardrobe
b. Bookshelf	d. Dining room
5. Someone who cuts men's ha	air, is
a. Carpenter	c. Sailor
b. Barber	d. Tailor
6. An animal which is furry, us	sually being a pet, and often find at a home and
eat the mouse, is	
a. Rabbit	c. Cat
b. Dog	d. Goat
7. The sun sets in the	
a. Night	c. Day
b. Afternoon	d. Morning
8. She <u>watches</u> the movie ever	y Saturday.
a. Smell	c. Push

b. Listen	d. See
9. What does teacher do in the	he class
a. Teach	c. Smile
b. Laugh	d. Run
10. Someone who hates anot	ther and desire to hurt, is
a. Friend	c. Partner
b. Enemy	d. Boss
11. If you are in library, you	have to be
a. Crowded	c. Silent
b. Busy	d. Laugh
II. Choose the synonym of	f the underline word!
12. This tree so big.	
a. thick	c. Huge
b. long	d. giant
13. My cousin is very <u>pretty</u>	<u>/.</u>
a. Ugly	c. Beautiful
b. Strange	d. Smart
14. When do you <u>come</u> on ti	me?
a. Go	c. See
b. Arrive	d. Study
15. This toy is <u>inexpensive.</u>	
a. Cheap	c. Good
b. Expensive	d. Overpriced
16. They <u>start</u> the final exam	n at 7.30 am.
a. Run	c. Continue
b. Begin	d. Connect
17. Meghan <u>brings</u> four bool	ks from the library.
a. Give	c. Carry
b. Share	d. Leave
18 Mr. Adam looks at their	students

a. See	c. Angry			
b. Watch	d. Support			
19. Can you delete some words?				
a. backspace	c. change			
b. break	d. enter			
20. My father <u>builds</u> tree house	in my garage.			
a. Destroy	c. Draw			
b. Paint	d. Construct			
21. When do you <u>finish</u> the class	s?			
a. Start	c. Try			
b. End	d. Repeat			
22. What do you think about the	e class?			
a. Realize	c. Reject			
b. Misunderstand	d. Fail			
III. Choose The antonym on the underlined word!				
ř				
23. They wake up at 5.00 am thi	s morning.			
·	s morning. c. Speak			
23. They wake up at 5.00 am thi	_			
23. They wake up at 5.00 am thi a. Sleep	c. Speak d. Sing			
23. They wake up at 5.00 am thi a. Sleep b. Study	c. Speak d. Sing			
<ul><li>23. They wake up at 5.00 am thi</li><li>a. Sleep</li><li>b. Study</li><li>24. Diandra runs so fast this after</li></ul>	c. Speak d. Sing			
<ul> <li>23. They wake up at 5.00 am thing.</li> <li>a. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this aftername.</li> <li>a. Cry</li> </ul>	c. Speak d. Sing ernoon. c. step			
<ul> <li>23. They wake up at 5.00 am thing.</li> <li>a. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this after a. Cry</li> <li>b. Jump</li> </ul>	c. Speak d. Sing ernoon. c. step			
<ul> <li>23. They wake up at 5.00 am thing.</li> <li>a. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this after a. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk			
<ul> <li>23. They wake up at 5.00 am thing.</li> <li>a. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this after a. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short			
<ul> <li>23. They wake up at 5.00 am thing.</li> <li>a. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this after a. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> <li>b. Huge</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short			
<ul> <li>23. They wake up at 5.00 am thina. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this aftera. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> <li>b. Huge</li> <li>26. The carpet is dirty. I want to</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short o clean it.			
<ul> <li>23. They wake up at 5.00 am thina. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this aftera. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> <li>b. Huge</li> <li>26. The carpet is dirty. I want tall.</li> <li>a. Pretty</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short o clean it. c. Clean			
<ul> <li>23. They wake up at 5.00 am thinal. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this afteral. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> <li>b. Huge</li> <li>26. The carpet is dirty. I want tall. Pretty</li> <li>b. Fun</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short o clean it. c. Clean			
<ul> <li>23. They wake up at 5.00 am thina. Sleep</li> <li>b. Study</li> <li>24. Diandra runs so fast this aftera. Cry</li> <li>b. Jump</li> <li>25. He is tall.</li> <li>a. Big</li> <li>b. Huge</li> <li>26. The carpet is dirty. I want to a. Pretty</li> <li>b. Fun</li> <li>27. It is hot outside.</li> </ul>	c. Speak d. Sing ernoon. c. step d. walk c. Long d. Short o clean it. c. Clean d. Wonderful			

a. Brilliant c. Dirty
b. Great d. Bad
29. Why are you being so arrogant?
a. Humble c. Stupid
b. Snooty d. Lazy
30. Do you want to go the beautiful valley?
a. Ugly c. Good

. Ogly C. Good

b. Nice d. Clean

#### **ANSWER KEY**

1. A	11. C	21. B
2. B	12. C	22. A
3. B	13. C	23. A
4. C	14. B	24. D
5. B	15. A	25. D
6. C	16. B	26. C
7. B	17. C	27. B
8. D	18. A	28. D
9. A	19. A	29. A
10. B	20. D	30. A

#### APPENDIX IV

Name:

# **Instrument of Pre Test and Post Test**

# **English Vocabulary Test**

Class:		
I. Answer These Qu	nestions!	
1. If you are in the zoo, you	have to be	
a. Happy	c. Silent	
b. Angry	d. Sad	
2. What does mother do in t	the kitchen	
a. Teach	c. Sleep	
b. Cook	d. Watch	
3. A place to put the clothes	s is called	
a. Cupboard	c. Wardrobe	
b. Bookshelf	d. Dining room	
4. Someone who cuts men's	s hair, is	
a. Carpenter	c. Sailor	
b. Barber	d. Tailor	
5. An animal which is furry	, usually being a pet, and often find at a home and	
eat the mouse, is		
a. Rabbit	c. Cat	
b. Dog	d. Goat	
6. The sun sets in the		
a. Night	c. Day	
b. Afternoon	d. Morning	
7. What does teacher do in the class		
a. Teach	c. Smile	
b. Laugh	d. Run	
8. Someone who hates another and desire to hurt, is		
a. Friend	c. Partner	

b. Enemy	d. Boss	
9. If you are in library, you have to be		
a. Crowded	c. Silent	
b. Busy	d. Laugh	
II. Choose the	e synonym of the underline word!	
10. My cousin is ve	ry pretty	
a. Ugly	c. Beautiful	
b. Strange	d. Smart	
11. When do you <u>co</u>		
a. Go	c. See	
b. Arrive	d. Study	
12. This toy is inexp	•	
a. Cheap	c. Good	
b. Expensive	d. Overpriced	
13. They start the fir	-	
a. Run	c. Continue	
b. Begin	d. Connect	
	our books from the library.	
a. Give	c. Carry	
b. Share	d. Leave	
15. Mr. Adam <u>looks</u>	at their students.	
a. See	c. Angry	
b. Watch	d. Support	
16. My father builds	tree house in my garage.	
a. Destroy	c. Draw	
b. Paint	d. Construct	
17. When do you fin	<u>rish</u> the class?	
a. Start	c. Try	
b. End	d. Repeat	

г	a. Realize	c. Reject
ł	o. Misunderstand	d. Fail
I	III. Choose The antonym or	the underlined word!
19. 7	They <u>wake up</u> at 5.00 am this	s morning.
C	e. Sleep	c. Speak
Ċ	d. Study	d. Sing
20. I	He is <u>tall</u> .	
C	e. Big	c. Long
C	d. Huge	d. Short
21.	The carpet is dirty. I want to	o clean it.
C	e. Pretty	c. Clean
Ċ	l. Fun	d. Wonderful
22.	It is <u>hot</u> outside.	
C	c. Breezy	c. Warm
Ċ	d. Cold	d. Stormy
23.	This seems like a good hote	1.
C	e. Brilliant	c. Dirty
Ċ	d. Great	d. Bad
24.	Why are you being so arrog	<u>cant</u> ?
C	e. Humble	c. Stupid
Ċ	l. Snooty	d. Lazy
25.	Do you want to go the beau	<u>tiful</u> valley?
C	c. Ugly	c. Good
C	d. Nice	d. Clean

18. What do you think about the class?

#### **ANSWER KEY**

1. A

11. B

2. B

12. A

3. C

13. B

4. B

14. C

5. C

15. A

6. D

7. C

16. D

17. B

8. A

18. A

9. C

19. A

10. C

- 20. D
- 21. C
- 22. B
- 23. D
- 24. A
- 25. A

APPENDIX V
List of Students' Initial and Full Name in Experimental Group

No	Initial	Full Name
1	ASS	Alya Syahlani Saragih
2	AAA	Aqila Amelia Afni
3	BM	Balqis Mawaddah
4	BPS	Beby Putri Salsabila
5	BA	Bintang Aulia
6	DM	Desy Mahmuda
7	DN	Dinda Naomira
8	FNS	Fadillah NR Siahaan
9	IRK	Inayah Rahma Khalisa
10	IP	Indah Prety
11	MFL	Maysa Fazila Lubis
12	MA	Melani Arwinda
13	MRA	Mutia Reyki Azzahra
14	NTA	Nabila Tri Ananda
15	NN	Nadia Nurhusna
16	NAS	Nadila Aulia Sastra
17	NHS	Nahwa Hafizah Sinaga
18	NAP	Nur Aisyah Pandia
19	NHI	Nur Habni Indra
20	RSH	Raisah Salimah Harahap
21	TAC	Talita Aulia Chairani
22	UUR	Uly Urroza Ramadanti
23	YR	Yulia Rahma
24	YSR	Yumaiza Sri Rahmadani
25	YDS	Yurika Dinda Salsabila
26	ZZB	Zahra Zamzam Bila

APPENDIX VI

Table of Students' Initial and Full Name in Control Group

No	Initial	Full Name	
1	AAG	Ahmad Al Ghozi	
2	AJ	Ahmad Jazuli	
3	AJR	Alif Juliansyah Rumanti	
4	ATD	Awang Thutahirunna Darma	
5	BRN	Bintang Rezka Nichita	
6	FF	Fadhlika Faturrahman	
7	FR	Faisal Rizky	
8	HHS	Habib Hafiz Samosir	
9	IA	Imam Azumar	
10	KS	Kelfin Sitorus	
11	MRD	M. Raihan Daffa	
12	MA	Maercel Anju	
13	MAA	M. Affandi Akbar	
14	MAD	M. Aji Dermawan	
15	MF	M. Fahri	
16	MFS	M. Fichri Septiandy	
17	MKI	M. Khoirul Ikhsan	
18	RD	Ridho Damanik	
19	MRW	M. Rivaldi Wirawan	
20	MWS	M. Wahyu Siregar	
21	OSA	OK. Saddam P.A.	
22	RYN	Rafid Yasir Nuh	
23	RYP	Rahmat Yazid Purnomo	
24	SK	Shofyan Kamil	
25	TDA	Teuku Dimas Agustri	
26	WSA	Windi Sabitul Azmi	

APPENDIX VII

Table of The Result of Pre-Test and Post-Test in Experimental Class

NO	Initial	Pre-test	Post-test
1	ASS	76	96
2	AAA	76	92
3	BM	72	100
4	BPS	88	100
5	BA	28	88
6	DM	52	60
7	DN	84	88
8	FNS	68	96
9	IRK	92	100
10	IP	72	84
11	MFL	88	100
12	MA	56	64
13	MRA	92	96
14	NTA	48	84
15	NN	96	100
16	NAS	76	88
17	NHS	80	92
18	NAP	88	100
19	NHI	56	60
20	RSH	84	92

21	TAC	56	60
22	UUR	64	84
23	YR	72	100
24	YSR	16	65
25	YDS	72	96
26	ZZB	72	100
	Total	1824	2285
	Mean	70,15385	87,88462

APPENDIX VIII

Table of The Result of Pre-Test and Post-Test in Control Class

NO	Initial	Pre Test	Post Test
1	AAG	32	72
2	AJ	30	58
3	AJR	80	72
4	ATD	32	52
5	BRN	20	48
6	FF	76	72
7	FR	50	74
8	HHS	32	58
9	IA	32	62
10	KS	16	54
11	MRD	24	68
12	MA	28	68
13	MAA	12	72
14	MAD	16	52
15	MF	24	56
16	MFS	56	64
17	MKI	60	78
18	RD	72	78
19	MRW	84	72
20	MWS	24	64

21	OSA	16	72
22	RYN	12	56
23	RYP	52	72
24	SK	40	68
25	TDA	12	52
26	WSA	64	62
Tota	1	932	1676
Mea	n	35,84615	64,46154

# APPENDIX IX

# **Table of R Distribution**

				Probabil	itas 1 ekor	1000		
dk=n-2	0,10	0,05	0,025	0,001	p,0005			
dk=n-2				Probabil	itas 2 ekor			200
1	0,20	0,10	0,05	0,02	0,01	0,01	0,002	0,001
1	0,951	0,988	0,997	1,000	1,000	1,000	1,000	1,000
2	0,800	0,900	0,950	0,980	0,990	0,995	0,998	0,999
3	0,687	0,805	0,878	0,934	0,959	0,974	0,986	0,991
4	0,608	0,729	0,811	0,882	0,917	0,942	0,963	0,974
5	0,551	0,669	0,754	0,833	0,875	0,906	0,935	0,951
6	0,507	0,621	0,707	0,789	0,834	0,870	0,905	0,925
7	0,472	0,582	0,666	0,750	0,798	0,836	0,875	0,898
8	0,443	0,549	0,632	0,715	0,765	0,805	0,847	0,872
9	0,419	0,521	0,602	0,685	0,735	0,776	0,820	0,847
10	0,398	0,497	0,576	0,658	0,708	0,750	0,795	0,823
11	0,380	0,476	0,553	0,634	0,684	0,726	0,772	0,801
12	0,365	0,458	0,532	0,612	0,661	0,703	0,750	0,780
13	0,351	0,441	0,514	0,592	0,641	0,683	0,730	0,760
14	0,338	0,426	0,497	0,574	0,623	0,664	0,711	0,742
15	0,327	0,412	0,482	0,558	0,606	0,647	0,694	0,725
16	0,317	0,400	0,468	0,543	0,590	0,631	0,678	0,708
17	0,308	0,389	0,456	0,529	0,575	0,616	0,662	0,693
18	0,299	0,378	0,444	0,516	0,561	0,602	0,648	0,679
19	0,291	0,369	0,433	0,503	0,549	0,589	0,635	0,665
20	0,284	0,360	0,423	0,492	0,537	0,576	0,622	0,652
21	0,277	0,352	0,413	0,482	0,526	0,565	0,610	0,640
22	0,271	0,344	0,404	0,472	0,515	0,554	0,599	0,629
23	0,265	0,337	0,396	0,462	0,505	0,543	0,588	0,618
24	0,260	0,330	0,388	0,453	0,496	0,534	0,578	0,607
25	0,255	0,323	0,381	0,445	0,487	0,524	0,568	0,597
26	0,250	0,317	0,374	0,437	0,479	0,515	0,559	0,588
27	0,245	0,311	0,367	0,430	0,471	0,507	0,550	0,579
28	0,241	0,306	0,361	0,423	0,463	0,499	0,541	0,570
29	0,237	0,301	0,355	0,416	0,456	0,491	0,533	0,562
30	0,233	0,296	0,349	0.409	0,449	0,484	0,526	0,554

APPENDIX X

The Critical Value Liliefors Test

N	$\alpha = .20$	$\alpha = .15$	$\alpha = .10$	$\alpha = .05$	$\alpha = .01$
4	.3027	.3216	.3456	.3754	.4129
5	.2893	.3027	.3188	.3427	.3959
6	.2694	.2816	.2982	.3245	.3728
7	.2521	.2641	.2802	.3041	.3504
8	.2387	.2502	.2649	.2875	.3331
9	.2273	.2382	.2522	.2744	.3162
10	.2171	.2273	.2410	.2616	.3037
11	.2080	.2179	.2306	.2506	.2905
12	.2004	.2101	.2228	.2426	.2812
13	.1932	.2025	.2147	.2337	.2714
14	.1869	.1959	.2077	.2257	.2627
15	.1811	.1899	.2016	.2196	.2545
16	.1758	.1843	.1956	.2128	.2477
17	.1711	.1794	.1902	.2071	.2408
18	.1666	.1747	.1852	.2018	.2345
19	.1624	.1700	.1803	.1965	.2285
20	.1589	.1666	.1764	.1920	.2226
21	.1553	.1629	.1726	.1881	.2190
22	.1517	.1592	.1690	.1840	.2141
23	.1484	.1555	.1650	.1798	.2090
24	.1458	.1527	.1619	.1766	.2053
25	.1429	.1498	.1589	.1726	.2010
26	.1406	.1472	.1562	.1699	.1985
27	.1381	.1448	.1533	.1665	.1941
28	.1358	.1423	.1509	.1641	.1911

#### APPENDIX XI

# TABLE OF F DISTRIBUTION

(Bilangan Dalam Badan Daftar Menyatakaan:

 $Fp: Baris \ Atas \ untuk \ p=0.05 \ dan \ Baris \ Bawah \ untuk \ p=0.01)$ 

v 2 = dk												v, = dkpe	embilang											$\overline{}$
penyebut	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	- 00
1	161 4062	200 4999	216 5403	225	230	234 5859	237 5928	239 5981	241 6022	242	243 6082	244 6106	245 6142	246	248 6208	249 6234	250 6258	251 6286	252 6302	253 6323	253 6334	254 6352	254 6361	254 6366
2	18,51	19,00	19,16	5625 19,25	5764 19,30	19,33	19,36	19,37	19,38	6056 19,39	19,40	19,41	19,42	6169 19,43	19,44	19,45	19,46	19,47	19,47	19,48	19,49	19,49	19,50	19,50
*	98,49	99,01	99,17	99,25	99,30	99,33	99,34	99,36	99,38	99,40	99,41	99,42	99,43	99,44	99.45	99,46	99,47	99,48	99,48	99,49	99,49	99,49	99,50	99,50
3	10,13	9,55	'9,28	9,12	9,01	8,94	8,88	8,84	8,81	8,78	8,76	8,74	8,71	8,69	8,66	8,64	8,62	8,60	8,58	8,57	8,56	8,54	8,54	8,52
	34,12	30,81	29,46	28,71	28,24	27,91	27,67	27,49	27,34	27,23	27,13	27,05	26,92	26,83	26,69	26,69	26,50	26,41	26,30	26,27	26,23	26,18	26,14	26,12
4	7,17	6,94 18,00	16,59 16,69	6,39 15,98	6,26 15,52	6,16 15,21	6,09 14,98	6,04 14,80	6,00 14,66	5,96 14,54	5,93 14,45	5,91 14,37	5,87 14,24	5,84 14,15	5,80 14,02	5,77 13,93	5,74 13,83	5,71 13,74	5,70 13,69	5,68 13,61	5,66 13,57	5,65 13,52	5,64 13,48	5,63 13,46
5	6,61	5.79	:5,41	5,19	5,05	4,95	4,88	4,82	4,78	4,74	4,70	4,68	4,64	4,60	4:56	4,53	4,50	4,46	4,44	4,42	4.40	4,38	4.37	4,36
i 1	16,26	13,27	12,06	11,39	10,97	10,67	10,45	10,27	10,15	10,05	9,96	9,89	9,77	9,86	9;55	9,47	9,38	9,29	9,24	9,17	9,13	9,07	9,04	9.02
6	5,99	5,14	4,76	4,53	4,39	4,28	4,21	4,15	4,10	4,06	4,03	4,00	3,96	3,92	3,87	3,84	3,81	3,77	3,75	3,72	3,71	3,69	3,68	3,67
	13,74	10,92	9,78	9,15	8,75	8,47	8,26	8,10	7,98	7,87	7,79	7,72	7,60	7,52	7,39	7,31	7,23	7,14	7,09	7,02	6,99	6,94	6,90	6,88
7	5,59 12,25	4,74 9,55	4,35 8,45	4,12 7,86	3,97 7,46	3,87 7,19	3,79 7,00	3,73 6,84	3,68 6,71	3,63 6,62	3,60 6,54	3,57 6,47	3,52 6,35	3,49 6,27	3,44 6,15	3,41 6,07	3,38 5,98	3,34 5,90	3,32 5,85	3,29 5,78	3,28 5,75	3,25 5,70	3,24 5,67	3,23 5,65
	5,32	4,46	4,07	3,84	3,69	3,58	3,50	3,44	3,39	3,34	3,31	3,28	3,23	3,20	3.15	3,12	3,08	3,05	3,03	3,00	2,98	2,96	2,94	2,93
"	11,26	8,65	7,59	7,01	6,63	6,37	6,19	6,03	5,91	5,82	5,74	5,67	5,56	5,48	5,36	5,28	5,20	5,11	5,06	5,00	4,96	4,91	4,88	4,86
9	5,12	4,26	3,86	3,63	3,48	3,37	3,29	3,23	3,18	3,13	3,10	3,07	3,02	2,98	2,93	2,90	2,86	2,82	2,80	2,77	2,76	2,73	2,72	2,71
i i	10,56	8,02	6,99	6,42	6,06	5,80	5,62	5,47	5,35	5,26	5,18	5,11	5,00	4,92	4,80	4,73	4,64	4,56	4,51	4,45	4,41	4,36	4,33	4,31
10	4,96	4,80	3,71	3,48	3,33	5,22	3,14	3,07	3,02 4,95	2,97 4,85	2,94 4,78	2,91 4,71	2,86 4,60	2,82 4,52	2,77 4,41	2,74 4,33	2,70 4,25	2,67 4,17	2,64 4,12	2,61 4,05	2,59 4,01	2,56 3,96	2,55 3,93	2,54 3,91
1 11	10,04 4,84	7,56 3,98	3,59	5,99 3,36	5,64 3,20	3,39 3,09	5,21 3,01	5,06 2,95	2,90	2,86	2,82	2,79	2,74	2,70	2,65	2,61	2,57	2,53	2,50	2,47	2,45	2,42	2,41	2,40
1 11	9,65	7,20	16,22	5,67	5,32	5,07	4,88	4,74	4,63	4,54	4,46	4,40	4,29	4,21	4,10	4,02	3,94	3,86	3,80	3,74	3,70	3,86	3,62	3,50
12	4,75	3,88	3,49	3,26	3,11	3,00	2,92	2,85	2,80	2,76	2,72	2,69	2,64	2,60	2,54	2,50	2,46	2,42	2,40	2,36	2,35	2,32	2,31	2,30
	9,38	6,93	:5,95	5,41	5,06	4,82	4,65	4,50	4,39	4,30	4,22	4,16	4,05	3,98	3,86	3,78	3,70	3,61	3,56	3,49	3,46	3,41	3,38	3,36
13	4,67 9,07	3,80 6,70	3,41	3,18 5,20	3,02	2,92 4,62	2,84 4,44	2,77 4,30	2,72 4,19	2,67 4,10	2,63 4,02	2,60 3,96	2,55 3,85	2,51 3,78	2,46 3,67	2,42 3,60	2,38 3,51	2,34 3,42	2,32 3,37	2,28	2,26 3,27	2,24 3,21	2,22 3,18	2,21 3,15
14	-		3,34		4,86 2,96	2,85	2,77	2,70	2,65	2,60	2,56	2,53	2,48	2,44	2,39	2,35	2,31	2,27	2,24	2,21	2,19	2,16	2,14	2,13
14	4,60 8,86	3,74 6,51	5,56	3,11 5,03	4,89	H,46	4,28	4,14	4,03	3,94	3,86	3,80	3,70	3,62	3,51	3,43	3,34	3,26	3,21	3,14	3,11	3,06	3,02	3,00
15	4,54	3,68	.3,29	3,06	2,90	2,79	2,70	2,64	2,59	2,55	2,51	2,48	2,43	2,39	2,33	2,29	2,25	2,21	2,18	2,15	2,12	2,10	2,06	2,07
1 1	8,68	6,36	5,42	4,89	4,56	4,32	4,14	4,00	3,89	3,80	3,73	3,67	3,56	3,48	3,36	3,29	3,20	3,12	3,07	3,00	2,97	2,92	2,89	2,87
16	4,49	3,63	3,24	3,01	2,85	2,74	2,66	2,59	2,54	2,49	2,45	2,42 3,55	2,37 3,45	2,33 3,37	2,28 3,25	2,24 3,18	2,20 3,10	2,16 3,01	2,13 2,96	2,09 2,89	2,07	2,04	2,02	2,01
17	8,53 4,45	6,23 3,59	3,20	4,77	4,44	4,20 2,70	4,03 2,62	3,89 2,55	3,78 2,50	3,69 2,45	3,61 2,41	2,38	2,33	2,29	2,23	2,19	2,15	2,11	2,08	2,04	2,02	1,99	1,97	1,96
1 17	8,40	6,11	:5,18	2,96 4,67	2,81 4,34	4,10	3,93	3,79	3,68	3,59	3,52	3,45	3,35	3,27	3,16	3,08	3,00	2,92	2,86	2,79	2,76	2,70	2,67	2,65
18	4,41	3,55	3,16	2,93	2,77	2,66	2,58	2,51	2,46	2,41	2,37	2,34	2,29	2,25	2,19	2,15	2,11	2,07	2,04	2,00	1,98	1,96	1,93	1,92
}	8,28	6,01	5,09	4,58	4,25	4,01	3,85	3,71	3,60	3,51	3,44	3,37	3,27	3,19	3,07	3,00	2,91	2,88	2,78	2,71	2,68	2,62	2,59	2,57
19	4,38	3,52	3,13	2,90	2,74	2,63	2,55	2,48	2,43 3,52	2,38	2,34 3,36	2,31 3,30	2,26 3,19	2,21 3,12	2,15 3,00	2,11	2,07 2,84	2,02	2,00	1,96 2,63	1,94 2,60	1,91 2,54	1,90 2,51	1,88 2,49
1 1	8,18	5,93	:5,01	4,50 2,87	4,17	3,94 2,60	3,77 2,52	3,63 2,45	2,40	3,43 2,35	2,31	2,26	2,23	2,18	2,12	2,08	2,04	1,99	1,96	1,92	1,90	1,87	1,85	1,84
20	4,35 8,10	3,49 5,85	3,10	4,48	2,71 4,10	3,87	3,71	3,56	3,45	3,37	3,30	3,23	3,13	3,05	2,94	2,86	2,77	2,69	2,63	2,56	2,53	2,47	2,44	2,42
21	4,32	3,47	3,07	2,84	2,68	2,57	2,49	2,42	2,37	2,32	2,28	2,25	2,20	2,15	2,09	2,05	2,00	1,96	1,93	1,89	1,87	1,84	1,82	1,81
	8,02	5,78	4,87	4,37	4,04	3,81	3,65	3,51	3,40	3,31	3,24	3,17	3,07	2,99	2,88	2,80	2,72	2,63	2,58	2,51	2,47	2,42	2,38	2,36
22	4,30	3,44	3,05	2,82	2,66	2,55	2,47	2,40	2,35	2,30	2,26	2,23	2,18	2,13	2,07	2,03	1,98 2,67	1,93 2,58	1,91 2,53	1,87 2,46	1,84 2,42	1,81 2,37	1,80 2,33	1,78 2,31
i	7,94	5,72	4,82	4,31	3,99	3,76	3,59	3,45	3,35 2,32	3,26 2,28	3,18 2,24	3,12 2,20	3,02 2,14	2,94 2,10	2,83	2,75 2,00	1,96	1,91	1.88	1.84	1,82	1,79	1,77	1,76
23	4,28 7,88	3,42 5,66	4,76	2,80 4,26	2,64 3,94	2,53 3,71	2,45 3,54	2,38 3,41	3,30	3,21	3,14	3,07	2,14	2,10	2,78	2,70	2,62	2,53	2,48	2,41	2,37	2,32	2,28	2,26
24	4,26	3,40	3,01	2,78	2,62	2,51	2,43	2,36	2,30	2,26	2,22	2,18	2,13	2,09	2,02	1,98	1,94	1,89	1,86	1,82	1,80	1,76	1,74	1,73
-	7,82	5,61	4,72	4,22	3,90	3,67	3,50	3,36	3,25	3,17	3,09	3,03	2,93	2,85	2,74	2,66	2,58	2,49	2,44	2,36	2,33	2,27	2,23	2,21
25	4,24	3,38	2,99	2,76	2,60	2,49	2,41	2,34	2,28 3,21	2,24 3,13	2,20 3,05	2,16 2,99	2,11	2,06	2,00	1,96 2,62	1,92 2,54	1,87 2,45	1,84 2,40	1,80	1,77 2,29	1,74 2,23	1,72 2,19	1,71 2,17
L <b>_</b>	7,77	5,57	4,68	4,18	3,86	3,63	3,46	3,32	3,21	3,13	3,03	4,99	2,89	4,61	4,70	4,04	2,34	4,43	2,40		-,27	-,2.7		

26	4,22 7,72	3,37 5,53	2,89 4,64	2,74 4,14	2,59 3,82	2,47 3,59	2,39 3,42	2,32 3,29	2,27 3,17	2,22 3,09	2,18 3,02	2,15 2,96	2,10 2,86	2,05 2,77	1,99 2,66	1,95 2,58	1,90 2,50	1,85 2,41	1,82 2,36	1,78 2,28	1,76	1,72 2,19	1,70 2,15	1,69 2,13
27	4,21 7,68	3,35	2,96	2,73	2,57	2,46	2,37	2,30	2,25	2,20	2,16	2,13	2,08	2,03	1,97	1,93	1,88	1,84	1,80	1,76	1,74	1,71	1,68	1,67
28	4,20	5,49 3,34	4,60 2,95	4,11 2,71	3,79 2,56	3,56 2,44	3,39 2,36	3,26 2,29	3,14 2,24	3,06 2,19	2,98 2,15	2,93 2,12	2,83 2,06	2,74	2,63 1,96	2,55 1,91	2,47 1,87	2,38 1,81	2,33 1,78	2,25 1,75	2,21 1,72	2,16 1,69	2,12 1,67	2,10 1,65
29	7,64	5,45	4,57	4,07	3,76	3,53	3,36	3,23	3,11	3,03	2,95	2,90	2,80	2,71	2,60	2,52	2,44	2,35	2,30	2,22	2,18	2,13	2,09	2,06
29	4,18 7,60	3,33 5,52	2,93 4,54	2,70 4,04	2,54 3,73	2,43 3,50	2,35 3,33	2,28 3,20	2,22 3,08	2,18 3,00	2,14 2,92	2,10 2,87	2,05 2,77	2,00 2,68	1,94 2,57	1,90 2,49	1,85 2,41	1,80 2,32	1,77 2,27	1,73 2,19	1,71 2,15	1,68	1,65 2,06	1,64 2,03
30	4,17 7,56	3,32 5,39	2,92	2,69 4,02	2,53 3,70	2,42 3,47	2,34 3,30	2,27 3,17	2,21 3,06	2,16	2,12	2,09	2,04	1,99	1,93	1,89	1,84	1,79	1,76	1,72	1,69	1,66	1,64	1,62
32	4,15	3,30	29,00	2,67	2,51	2,40	2,32	2,25	2,19	2,98 2,14	2,90	2,84 2,07	2,74 2,02	2,66 1,97	2,55 1,91	2,47 1,86	2,38 1,82	2, <b>2</b> 9 1,76	2,24 1,74	2,16 1,69	2,13 1,67	2,07 1,64	2,03 1,61	2,01 1,59
34	7,50 4,13	5,34 3,28	4,46 2,88	3,97 2,65	3,66 2,49	3,42 2,38	3,25 2,30	3,12 2,23	3,01 2,17	2,94 2,12	2,86 2,08	2,80 2,05	2,70	2,62 1,95	2;51 1,89	2,42 1,84	2,34 1,80	2,25 1,74	2,20	2,12	2,08	2,02	:,98	1,96
	7,44	5,29	4,42	3,93	3,61	3,38	3,21	3,08	2,97	2,89	2,82	2,76	2,66	2,58	2,47	2,38	2,30	2,21	1,71 2,15	1,67 2,08	1,64 2,04	1,61 1,98	1,59 1,94	1,57 1,91
36	4,11 7,39	3,26 5,25	2,86	2,63 3,89	2,48 3,58	2,36 3,35	2,28 3,18	2,21 3,04	2,15 2,94	2,10 2,86	2,06 2,78	2,03 2,72	1,89 2,62	1,93 2,54	1,87 2,43	1,82 2,35	1,78 2,26	1,72 2,17	1,69 2,12	1,65 2,04	1,62 2,00	1,59 1,94	1,56 1,90	1,55 1,87
38	4,10 7,35	3,25 5,21	2,85	2,62 3,86	2,46	2,35 9,32	2,26	2,19	2,14	2,09	2,05	2,02	1,96	1,92	1,85	1,80	1,76	1.71	1,67	1,63	1,60	1,57	1,54	1,53
40	4,08	3,23	2,84	2,61	3,84 2,45	2,34	3,15 2,25	3,02 2,18	2,91 2,12	2,82 2,07	2,75 2,04	2,69	2,59 1,95	2,51 1,90	2,40 1,84	2,32 1,79	2,22 1,74	2,14 1,69	2,08 1,66	2,00 1,61	1,97	1,90	1,86	1,84
42	7,31 4,07	5,18 3,22	-4,31 :2,83	3,83 2,59	3,51 2,44	3,29 2,32	3,12 2,24	2,99	2,88	2,80	2,73	2,66 1,99	2,56	2,49	2,37	2,29	2,20	2,11	2,05	1,97	1,94	1,88	1,84	1,81
	7,27	5,15	4,29	3,80	3,49	3,26	3,10	2,96	2,11 2,86	2,77	2,70	2,64	1,94 2,54	1,89 2,46	1,82 2,35	1,78 2,26	1,73 2,17	1,68 2,08	1,64 2,02	1,60 1,94	1,57 1,91	1,54 1,85	1,51 1,80	1,49 1,78
44	4,06 7,24	3,21 5,12	4,26	2,58 3,78	2,43 3,46	2,31 3,24	2,23 3,07	2,16 2,94	2,10 2,84	2,05 2,75	2,01	1,98 2,62	1,92 2,52	1,88 2,44	1,81 2,32	1,76 2,24	2,17 1,72	1,66 2,06	1,63 2,00	1,58 1,92	1,56 1,88	1,52 1,82	1,50 1,78	1,48 1,75
46	4,05	3,20	2,81	2,57	2,42	2,30	2,22	2,14	2,09	2,04	2,00	1,97	1,91	1,87	1,80	1,75	2,15	1,65	1,62	1,57	1,54	1,51	1,48	1,46
48	7,21 4,04	5,10 3,19	2,80	3,76 2,56	3,44 2,41	3,22 2,30	3,05 2,21	2,92 2,14	2,82	2,73 2,03	2,66 1,99	2,60 1,96	2,50 1,90	2,42 1,86	2,32 1,79	2,22 1,74	1,71 2,13	2,04 1,64	1,98 1,61	1,90 1,56	1,86	1,80	1,76	1,72
50	7,19 4,03	5,08 3,18	2,79	3,74 2,56	3,42 2,40	3,20 2,29	3,04 2,20	2,90	2,80	2,71	2,64 1,98	2,58 1.95	2,48 1,90	2,40 1,85	2,28	2,20 1,74	1,70	2,02	1,96	1,88	1,84	1,78	1,73	1,70
1 "	7,17	5,06	4,20	3,72	3,44	3,18	3,02	2,88	2,78	2,70	2,62	2,56	2,46	2,39	2,26	2,13	1,69 2,10	1,63 2,00	1,60 1,94	1,55 1,86	1,52 1,82	1,48 1,76	1,46	1,44
55	4,02 7,12	3,17 5,01	4,16	2,54 3,65	2,38 3,37	2,27 3,15	2,18 2,98	2,11	2,05 2,75	2,00 2,66	1,97 2,59	1,93 2,53	1,88 2,43	1,83 2,35	1,76 2,23	1,72 2,15	1,67 2,00	1,61 1,96	1,58	1,52 1,82	1,50 1,78	1,46 1,71	1,43 1,66	1,41
60	4,00	3,15	:2,76	2,52	2,37	2,25	2,17	2,10	2,04	1,99	1,95	1,92	1,86	1,81	1,75	1,70	1,65	1,59	1,56	1,50	1,48	1,44	1,41	1,39
65	7,08 3,99	4,98 3,14	-4,13 :2,75	3,65 2,51	3,34 2,36	5,12 2,21	2,95 2,15	2,82	2,72	2,03 1,98	2,56 1.94	2,50 1,90	2,40 1,85	2,32 1.80	2,20 1,73	2,12 1,68	2,03 1.63	1,93 1,57	1,87 1,54	1,79 1,49	1,74 1,46	1,68	1,63	1,60
	7,01	4,95	4,10	3,62	3,31	3,09	2,93	2,79	2,70	2,61	2,54	2,47	2,37	2,30	2,18	2,09	2,00	1,90	1,84	1,76	1,71	1,64	1,60	1,56
70	3,98 7,01	3,13 4,92	4,08	2,50 3,60	2,35 3,29	2,32 3,07	2,14 2,91	2,07 2,77	2,01 2,67	1,97 2,59	1,93 2,51	1,89 2,45	1,84 2,35	1,79 2,28	1,72 2,15	1,67 2,07	1,62 1,98	1,56 1, <b>8</b> 8	1,53 1,82	1,47	1,45 1,69	1,40 1,63	1,37 1,56	1,35
80	3,96 6,96	3,11 4,88	4,01	2,48 3,58	2,33 3,25	2,21 3,04	2,12 2,87	2,05 2,74	1,99 2,64	1,95 2,55	1,91 2,48	1,88 2,44	1,82 2,32	1,77 2,24	1,70 2,11	1,65 2,03	1,60 1,94	1,54 1,84	1,51 1,78	1,45 1,70	1,42 1,65	1,38 1,57	1,35 1,52	1,32
100	3,94	3,09	2,70	2,46	2,30	2,19	2,10	2,03	1,97	1,92	1,88	1,85	1,79	1,75	1,68	1,63	1,57	1,51	1,48	1,42	1,39	1,34	1,30	1,28
125	6,90 3,92	4,82 3,07	:3,98 :2,68	3,51 2,44	3,20 2,29	2,99	2,82 2,08	2,69	2,59 1,95	2,51 1.90	2,43 1.86	2,36 1,83	2,26 1,77	2,19 1,72	2,06 1,65	1,98	1,89	1,79 1,49	1,73 1.45	1,64	1,59 1,36	1,51 1,31	1,46 1,27	1,43
	6,84	4,78	3,94	3,47	3,17	2,95	2,79	2,65	2,56	2,17	2,40	2,33	2,23	2,15	2,03	1,94	1,85	1,75	1,68	1,59	1,54	1,46	1,40	1,25
150	3,91 6,81	3,06 4,75	3,91	2,43 3,44	2,27 3,13	2,16 2,92	2,07 2,76	2,00 2,62	1,94 2,53	1,89 2,44	1,85 2,37	1,82 2,30	1,76 2,20	1,71 2,12	1,64 2,00	1,59 1,91	1,54 1,82	1,47 1,72	1,44 1,66	1,37 1,56	1,34	1,29 1,43	1,25	1,22
200	3,89 6,76	3,01 4,71	2,65 3,88	2,41 3,41	2,26 3,11	2,14 2,90	2,05 2,73	1,98	1,92 2,50	1,87 2,41	1,83 2,34	1,80 2,28	1,74	1,69 2,09	1,62	1,57	1,52 1,79	1,45	1,42 1,62	1,35	1,32	1,26 1,39	1,22 1,33	1,19
400	3,86	3,02	2,62	2,39	2,23	2,12	2,03	1,96	1,90	1,85	1,81	1,78	1,72	1,67	1,60	1,54	1,49	1,42	1,38	1,32	1,28	1,22	1,16	1,13
1000	6,70 3,85	4,66 3,00	3,83	3,36 2,38	3,06	2,85	2,69	2,55 1,95	2,16 1,89	2,37 1,81	2,29 1,80	2,23 1,76	2,12 1,70	2,04 1,65	1,92	1,84	1,74	1,64	1,57	1,47	1,42	1,32	1,24	1,19
1	6,68	4,62	3,80	3,34	3,04	2,82	2,66	2,53	2,43	2,34	2,26	2,20	2,09	2,01	1,89	1,81	1,71	1,61	1,54	1,44	1,38	1,28	1,19	1,14
œ	3,84 6,64	2,99 4,60	3,78	2,37 3,32	2,21 3,02	2,09 2,80	2,01 2,64	1,94 2,51	1,88 2,41	1,83 2,32	1,79 2,24	1,75 2,18	1,69 2,07	1,64 1,99	1,57	1,52	1,46	1,40 1,59	1,35 1,52	1,28	1,24 1,36	1,17 1,25	1,11 1,12	1,00
																<del></del>								

Source: Sudjana. *Metoda Statistika*. Bandung: Tarsito, 2002

APPENDIX XII

# PERCENTAGE POINTS OF T DISTRIBUTION

DF	A	0.80	0.90	0.95	0.98	0.99	0.995	0.998	0.999
	P	0.20	0.10	0.05	0.02	0.01	0.005	0.002	0.001
1		3.078	6.314	12.706	31.820	63.657	127.321	318.309	636.619
2		1.886	2.920	4.303	6.965	9.925	14.089	22.327	31.599
3		1.638	2.353	3.182	4.541	5.841	7.453	10.215	12.924
4		1.533	2.132	2.776	3.747	4.604	5.598	7.173	8.610
5		1.476	2.015	2.571	3.365	4.032	4.773	5.893	6.869
6		1.440	1.943	2.447	3.143	3.707	4.317	5.208	5.959
7		1.415	1.895	2.365	2.998	3.499	4.029	4.785	5.408
8		1.397	1.860	2.306	2.897	3.355	3.833	4.501	5.041
9		1.383	1.833	2.262	2.821	3.250	3.690	4.297	4.781
10		1.372	1.812	2.228	2.764	3.169	3.581	4.144	4.587
11		1.363	1.796	2.201	2.718	3.106	3.497	4.025	4.437
12		1.356	1.782	2.179	2.681	3.055	3.428	3.930	4.318
13		1.350	1.771	2.160	2.650	3.012	3.372	3.852	4.221
14		1.345	1.761	2.145	2.625	2.977	3.326	3.787	4.140
15		1.341	1.753	2.131	2.602	2.947	3.286	3.733	4.073
16		1.337	1.746	2.120	2.584	2.921	3.252	3.686	4.015
17		1.333	1.740	2.110	2.567	2.898	3.222	3.646	3.965
18		1.330	1.734	2.101	2.552	2.878	3.197	3.610	3.922
19		1.328	1.729	2.093	2.539	2.861	3.174	3.579	3.883
20		1.325	1.725	2.086	2.528	2.845	3.153	3.552	3.850
21		1.323	1.721	2.080	2.518	2.831	3.135	3.527	3.819
22		1.321	1.717	2.074	2.508	2.819	3.119	3.505	3.792
23		1.319	1.714	2.069	2.500	2.807	3.104	3.485	3.768

24         1.318         1.711         2.064         2.492         2.797         3.090         3.467         3.745           25         1.316         1.708         2.060         2.485         2.787         3.078         3.450         3.725           26         1.315         1.706         2.056         2.479         2.779         3.067         3.435         3.707           27         1.314         1.703         2.052         2.473         2.771         3.057         3.421         3.690           28         1.313         1.701         2.048         2.467         2.763         3.047         3.408         3.674           29         1.311         1.699         2.042         2.457         2.750         3.030         3.356         3.659           30         1.300         1.695         2.040         2.453         2.744         3.022         3.375         3.633           31         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.032         2.441         2.728         3.002         3.348         3.601           35			I	I	1	1	1	1	I
26         1.315         1.706         2.056         2.479         2.779         3.067         3.435         3.707           27         1.314         1.703         2.052         2.473         2.771         3.057         3.421         3.690           28         1.313         1.701         2.048         2.467         2.763         3.047         3.408         3.674           29         1.311         1.699         2.045         2.462         2.756         3.038         3.396         3.659           30         1.310         1.697         2.042         2.457         2.750         3.030         3.385         3.646           31         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.633           32         1.308         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.690         2.032         2.441         2.728         3.002         3.348         3.601           34         1.306         1.680         2.028         2.434         2.719         2.991         3.333         3.582           37	24	1.318	1.711	2.064	2.492	2.797	3.090	3.467	3.745
27         1.314         1.703         2.052         2.473         2.771         3.057         3.421         3.690           28         1.313         1.701         2.048         2.467         2.763         3.047         3.408         3.674           29         1.311         1.699         2.045         2.462         2.756         3.038         3.396         3.659           30         1.310         1.697         2.042         2.457         2.750         3.030         3.385         3.646           31         1.309         1.695         2.040         2.453         2.744         3.022         3.375         3.633           32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.680         2.028         2.434         2.719         2.991         3.333         3.582           37	25	1.316	1.708	2.060	2.485	2.787	3.078	3.450	3.725
28         1.313         1.701         2.048         2.467         2.763         3.047         3.408         3.674           29         1.311         1.699         2.045         2.462         2.756         3.038         3.396         3.659           30         1.310         1.697         2.042         2.457         2.750         3.030         3.385         3.646           31         1.309         1.695         2.040         2.453         2.744         3.022         3.375         3.633           32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.306         1.690         2.030         2.438         2.724         2.996         3.340         3.591           35         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38	26	1.315	1.706	2.056	2.479	2.779	3.067	3.435	3.707
29         1.311         1.699         2.045         2.462         2.756         3.038         3.396         3.659           30         1.310         1.697         2.042         2.457         2.750         3.030         3.385         3.646           31         1.309         1.695         2.040         2.453         2.744         3.022         3.375         3.633           32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.689         2.023         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.313         3.558           40	27	1.314	1.703	2.052	2.473	2.771	3.057	3.421	3.690
30         1.310         1.697         2.042         2.457         2.750         3.030         3.385         3.646           31         1.309         1.695         2.040         2.453         2.744         3.022         3.375         3.633           32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.441         2.728         3.002         3.348         3.601           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.680         2.020         2.438         2.724         2.996         3.340         3.591           36         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42	28	1.313	1.701	2.048	2.467	2.763	3.047	3.408	3.674
31         1.309         1.695         2.040         2.453         2.744         3.022         3.375         3.633           32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.690         2.030         2.438         2.724         2.996         3.340         3.591           36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.51           42         <	29	1.311	1.699	2.045	2.462	2.756	3.038	3.396	3.659
32         1.309         1.694         2.037         2.449         2.738         3.015         3.365         3.622           33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.690         2.030         2.438         2.724         2.996         3.340         3.591           36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.313         3.556           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.682         2.018         2.418         2.698         2.963         3.296         3.538           41	30	1.310	1.697	2.042	2.457	2.750	3.030	3.385	3.646
33         1.308         1.692         2.035         2.445         2.733         3.008         3.356         3.611           34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.688         2.028         2.434         2.719         2.996         3.340         3.591           36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.286         3.526           46	31	1.309	1.695	2.040	2.453	2.744	3.022	3.375	3.633
34         1.307         1.691         2.032         2.441         2.728         3.002         3.348         3.601           35         1.306         1.690         2.030         2.438         2.724         2.996         3.340         3.591           36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           48	32	1.309	1.694	2.037	2.449	2.738	3.015	3.365	3.622
35         1.306         1.690         2.030         2.438         2.724         2.996         3.340         3.591           36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48	33	1.308	1.692	2.035	2.445	2.733	3.008	3.356	3.611
36         1.306         1.688         2.028         2.434         2.719         2.991         3.333         3.582           37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48         1.299         1.676         2.009         2.403         2.678         2.937         3.261         3.496           50	34	1.307	1.691	2.032	2.441	2.728	3.002	3.348	3.601
37         1.305         1.687         2.026         2.431         2.715         2.985         3.326         3.574           38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48         1.299         1.677         2.011         2.407         2.682         2.943         3.269         3.505           50         1.299         1.676         2.009         2.403         2.678         2.937         3.261         3.496           60	35	1.306	1.690	2.030	2.438	2.724	2.996	3.340	3.591
38         1.304         1.686         2.024         2.429         2.712         2.980         3.319         3.566           39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48         1.299         1.677         2.011         2.407         2.682         2.949         3.269         3.505           50         1.299         1.676         2.009         2.403         2.678         2.937         3.261         3.496           60         1.296         1.671         2.000         2.390         2.660         2.915         3.232         3.460           70	36	1.306	1.688	2.028	2.434	2.719	2.991	3.333	3.582
39         1.304         1.685         2.023         2.426         2.708         2.976         3.313         3.558           40         1.303         1.684         2.021         2.423         2.704         2.971         3.307         3.551           42         1.302         1.682         2.018         2.418         2.698         2.963         3.296         3.538           44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48         1.299         1.677         2.011         2.407         2.682         2.949         3.269         3.505           50         1.299         1.676         2.009         2.403         2.678         2.937         3.261         3.496           60         1.296         1.671         2.000         2.390         2.660         2.915         3.232         3.460           70         1.294         1.667         1.994         2.381         2.648         2.899         3.211         3.435           80	37	1.305	1.687	2.026	2.431	2.715	2.985	3.326	3.574
40       1.303       1.684       2.021       2.423       2.704       2.971       3.307       3.551         42       1.302       1.682       2.018       2.418       2.698       2.963       3.296       3.538         44       1.301       1.680       2.015       2.414       2.692       2.956       3.286       3.526         46       1.300       1.679       2.013       2.410       2.687       2.949       3.277       3.515         48       1.299       1.677       2.011       2.407       2.682       2.943       3.269       3.505         50       1.299       1.676       2.009       2.403       2.678       2.937       3.261       3.496         60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.183       3.402	38	1.304	1.686	2.024	2.429	2.712	2.980	3.319	3.566
42       1.302       1.682       2.018       2.418       2.698       2.963       3.296       3.538         44       1.301       1.680       2.015       2.414       2.692       2.956       3.286       3.526         46       1.300       1.679       2.013       2.410       2.687       2.949       3.277       3.515         48       1.299       1.677       2.011       2.407       2.682       2.943       3.269       3.505         50       1.299       1.676       2.009       2.403       2.678       2.937       3.261       3.496         60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	39	1.304	1.685	2.023	2.426	2.708	2.976	3.313	3.558
44         1.301         1.680         2.015         2.414         2.692         2.956         3.286         3.526           46         1.300         1.679         2.013         2.410         2.687         2.949         3.277         3.515           48         1.299         1.677         2.011         2.407         2.682         2.943         3.269         3.505           50         1.299         1.676         2.009         2.403         2.678         2.937         3.261         3.496           60         1.296         1.671         2.000         2.390         2.660         2.915         3.232         3.460           70         1.294         1.667         1.994         2.381         2.648         2.899         3.211         3.435           80         1.292         1.664         1.990         2.374         2.639         2.887         3.195         3.416           90         1.291         1.662         1.987         2.369         2.632         2.878         3.183         3.402	40	1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
46       1.300       1.679       2.013       2.410       2.687       2.949       3.277       3.515         48       1.299       1.677       2.011       2.407       2.682       2.943       3.269       3.505         50       1.299       1.676       2.009       2.403       2.678       2.937       3.261       3.496         60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	42	1.302	1.682	2.018	2.418	2.698	2.963	3.296	3.538
48       1.299       1.677       2.011       2.407       2.682       2.943       3.269       3.505         50       1.299       1.676       2.009       2.403       2.678       2.937       3.261       3.496         60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	44	1.301	1.680	2.015	2.414	2.692	2.956	3.286	3.526
50       1.299       1.676       2.009       2.403       2.678       2.937       3.261       3.496         60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	46	1.300	1.679	2.013	2.410	2.687	2.949	3.277	3.515
60       1.296       1.671       2.000       2.390       2.660       2.915       3.232       3.460         70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	48	1.299	1.677	2.011	2.407	2.682	2.943	3.269	3.505
70       1.294       1.667       1.994       2.381       2.648       2.899       3.211       3.435         80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	50	1.299	1.676	2.009	2.403	2.678	2.937	3.261	3.496
80       1.292       1.664       1.990       2.374       2.639       2.887       3.195       3.416         90       1.291       1.662       1.987       2.369       2.632       2.878       3.183       3.402	60	1.296	1.671	2.000	2.390	2.660	2.915	3.232	3.460
<b>90</b> 1.291 1.662 1.987 2.369 2.632 2.878 3.183 3.402	70	1.294	1.667	1.994	2.381	2.648	2.899	3.211	3.435
	80	1.292	1.664	1.990	2.374	2.639	2.887	3.195	3.416
<b>100</b>   1.290   1.660   1.984   2.364   2.626   2.871   3.174   3.391	90	1.291	1.662	1.987	2.369	2.632	2.878	3.183	3.402
	100	1.290	1.660	1.984	2.364	2.626	2.871	3.174	3.391

120	1.289	1.658	1.980	2.358	2.617	2.860	3.160	3.373
150	1.287	1.655	1.976	2.351	2.609	2.849	3.145	3.357
200	1.286	1.652	1.972	2.345	2.601	2.839	3.131	3.340
300	1.284	1.650	1.968	2.339	2.592	2.828	3.118	3.323
500	1.283	1.648	1.965	2.334	2.586	2.820	3.107	3.310
∞	1.282	1.645	1.960	2.326	2.576	2.807	3.090	3.291

# **APPENDIX XIII: DOCUMENTATIONS**



Doing Pre Test in Experimental Class



Giving material Using Frayer Model in Experimental Class



Giving Material with conventional strategy in Control Class



Doing Pre Test in Control Class



Ice Breaking in Experimental Class



Make a Presentation by Using Frayer Model in Experimental Class



All of Students in Experimental Class and a Teacher English



Giving Post Test in Control Class



With the Principal of SMP IT Al Ihya Tanjung Gading



Doing Post Test in Experimental Class