

**THE EFFECT OF ANAGRAM GAME  
TO THE STUDENTS' VOCABULARY MASTERY  
AT GRADE VII MTs N 2 PADANGSIDIMPUAN**

**A THESIS**

*Submitted to the English Education Study Program of State Collage for Islamic  
Studies Padangsidimpuan in Partial Fulfillment of the Requirement for the  
Degree of Islamic Educational Scholar (S.Pd) in English Program*

**Written by :**

**WARDAH MUTIAH NASUTION**  
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**ENGLISH EDUCATIONAL DEPARTMENT**

**TARBIYAH AND TEACHER TRAINING FACULTY  
STATE INSTITUTE FOR ISLAMIC STUDIES  
PADANGSIDIMPUAN**

**2020**



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Therefore, we hope that the thesis will soon be examined in front of the Thesis Examiner Team of E. Dept. of Tarbiyah and Teacher Training Faculty IAIN Padangsidempuan. Thank you.

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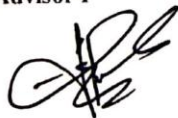
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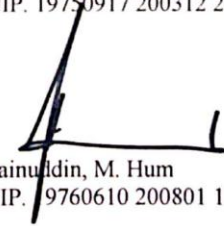
  
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### **ABSTRACT**

This research is focused on the effect of Anagram Game to the Students' Vocabulary Mastery at VII Grade MTs N 2 Padangsidempuan. The problems of this research were students get difficulty in memorizing vocabulary, the students get difficulties in understanding English language because lack of vocabulary, students feel bored when teaching and learning process, students feel uninterested when teaching and learning because the technique that is used, also the students lack of motivation. The objective of this research was to find out the effect of Anagram Game to the Students' Vocabulary Mastery at Grade VII MTs N 2 Padangsidempuan.

Solving those problems, the researcher conducted quantitative research with experimental method. This research used one group pre-test and post-test design. The instrument of this research was multiple choice test (pre-test and post-test). The population of this research was all of VII grade MTs N 2 Padangsidempuan consists of 191 students. Sample of this research was VII-2 (39 students) as experimental class and VII-3 (39 students) as control class. It was taken randomly after conducting normality and homogeneity. The researcher used test as instrument for collecting the data. T-test was used to analysis the data in this research.

The research result showed the students' vocabulary mastery mean score of pre-test in experimental class was higher than control class ( $51.72 > 47.40$ ). After using Anagram Game, the result of mean score post-test was increase, it was ( $62.09 > 53.84$ ), mean score of experimental class was higher than control class. It was also showed by  $t_{count}$  was higher than  $t_{tabel}$  ( $3.92 > 1.66691$ ). It means that the hypothesis alternative ( $H_a$ ) was accepted. It was concluded that there was a significant effect of Anagram Game to the Students' Vocabulary Mastery at Grade VII MTs N 2 Padangsidempuan.

*Key Words: Vocabulary Mastery, Noun, Anagram Game*

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## **CHAPTER I**

### **INTRODUCTION**

#### **A. Background of the Problem**

Vocabulary is one of the important aspects in English. It has an important role in English. By using vocabulary, it will be easier to understand what the conversation or writing of other people. It makes people be easier to express the thoughts in that language verbally or in writing.

Vocabulary is the main element to master English. It is one of the basic of the four skills in mastering English. Vocabulary is an essential skill for learning to read, speak, write and listen. Without vocabulary, someone will not be able to speak, read, write, listen, and will not understand. Has many vocabulary will make easier to understand the English in four skills. Many vocabularies also will help someone to be easier to express their thoughts orally or written forms. Conversely, fewer vocabularies will make difficult to understand the English also difficult to express the thoughts or ideas. If people have less vocabulary, it cannot only understand other' saying, but also cannot make sentences to transfer the messages to the other people. Thus, if someone has enough vocabularies will help to understand English expressions.

Vocabulary is one of the important things to teach a foreign language. Vocabulary is the proponent in language skills and grammar. In learning foreign language, vocabulary plays an important role. It is one element that links the four skills of speaking, listening, reading and writing all together. In order to communicate well in a foreign language, students should acquire an adequate number of words and should know how to use them accurately.



Vocabulary as one of the important aspect in English language will make students be easier to communicate each other. The students have to master vocabulary at least 1500 words and to develop pupil's vocabulary in junior high school.<sup>1</sup> To solve this problem, teachers should have many teaching techniques to help the students receive English easily. Such as giving total physical activity (example games), internalizing the concept through visual aids (example video, picture, tapes, music, flash card, and puppet toys), and explaining things with nonverbal language (facial features, gestures).<sup>2</sup> So, there are many techniques that can be used in teaching. Technique in teaching helps the teacher be easier to teach, also the students more motivated and interested in learning.

Teaching vocabulary is one of the main topics in teaching English in Junior High School. Teaching for students in Junior High School is not same with teaching for students in Senior High School or University students. Students in Junior High School have different characteristic and motivation with Senior High School or University students. They are not the same as adults, so the way of teaching must be different too. They love to play and like to think that what they are doing in real work. If the teachers cannot teach the students properly, they may not enjoy their learning. Consequently, the teaching learning process may fail.

Teaching vocabulary in Junior High School especially those up to the ages of eleven to fifteen learn differently from older learners, adolescents, and adults.

---

<sup>1</sup> Maya Tyas Lutfiana Rosyidah, "Teaching Vocabulary for the Second Grade Students of SMP A-Islam Kartasura in Academic Year 2017/2018," 2018, [eprints.iain-surakarta.ac.id](http://eprints.iain-surakarta.ac.id). p. 1.

<sup>2</sup> Irfan Wahyu Hidayat, "The Techniques for Teaching Vocabulary at SMP Muhammadiyah 10 Surakarta in 2016-2017 Academic Year," 2017, <http://eprints.ums.ac.id/51603/> p. 2-3.

The students easily feel bored in teaching and learning process. The students' boredom may come from the strategy or technique which is used in teaching vocabulary. The problems can make the teaching and learning process unsuccessful.

Based on the researcher's experience when did PPL at MTs N 2 Padangsidimpuan, one of the problems in this school is the students get difficulty to memorizing the vocabulary. They feel bored when teaching and learning English process. This situation happened from the techniques that used in teaching. The students' weakness of vocabulary mastery also occur due to a lack of motivation in learning English, the students are also poor of vocabulary. The same opinion comes from the English teacher in MTs N 2 Padangsidimpuan, the teacher said the students get difficulties in learning English and they are not interested in learning English. It makes the students feel bored when teaching and learning process.<sup>3</sup> Therefore, the researcher wants to know the using of suitable technique influences to what has been intended to the students' vocabulary mastery at seventh grade MTs N 2 Padangsidimpuan becomes its purpose.

In teaching vocabulary, the teachers should have many techniques to teach vocabulary to the students. They should be as creative as possible to teach vocabulary also creative to design techniques in the classroom that urge and motivate students to study English especially in learning vocabulary for beginner. Besides to urge and motivate students, it can help students to memorize the vocabulary. So, it will suppose the students to think that learning English is fun.

---

<sup>3</sup> Nila Suaidah, English Teacher at Grade VII of MTs N 2 Padangsidimpuan, *Private Interview*, (MTs N 2 Padangsidimpuan: Maret 2<sup>nd</sup>, 2019 at 10.00 a.m).

Based on the explanation and problems above, the researcher believes that technique will solve the students' problems in learning vocabulary. There are many techniques that can be used in teaching vocabulary. One of the techniques is using game. Games are advantageous and effective in learning vocabulary. They are motivating because they usually involve friendly competition and create cooperative learning environment. The students have an opportunity to work together. Vocabulary games bring real world context into the classroom, and enhance students' use of English in a flexible and communicative way.<sup>4</sup> Therefore, the researcher chooses game as the technique in teaching vocabulary to the students. The researcher believes that the games can be the way to minimize the students' boredom in learning vocabulary. One of them is anagram game.

Anagram game is rearranging the word or letters by the students to create the new word or phrase from the letters of another word. An anagram is a type of word play, the result of rearranging the letters of a word or phrase to produce a new word or phrase, using all the original letters exactly once.<sup>5</sup> Dale and O'Rourke in Richard stated one of the interesting ways for learning vocabulary is using word games exercises. There are several types of word games, such as puns, riddle, crossword puzzle, and anagram. One of the games is anagram game.<sup>6</sup>

Anagram game is very important to teach vocabulary. Anagram helps the students

---

<sup>4</sup> Ali Derakhshan and Elham Davoodi Khatir, "The Effects of Using Games on English Vocabulary Learning," *Journal of Applied Linguistics and Language Research* 2, no. 3 (2015): 39–47, <https://pdfs.semanticscholar.org/774c/2cae6b8aefbe2fdcf88c151d0441bebba857.pdf> p. 40.

<sup>5</sup> Jinal Patel, "Different Data Structures Used for Playing with Anagram," *International Journal of Advance Engineering and Research Development* 2, no. 5 (2015): 243–49, [http://www.ijaerd.com/papers/finished\\_papers/Different Data Structures Used For Playing With Anagram-53175.pdf](http://www.ijaerd.com/papers/finished_papers/Different%20Data%20Structures%20Used%20For%20Playing%20With%20Anagram-53175.pdf) p. 243.

<sup>6</sup> Richard Devara Candra Kumara, "The Use of Anagrams to Improve Students' Vocabulary Learning Strategy in XI IPA 1 Class , SMA Pangudi Luhur Sedayu," 2016, <https://repository.usd.ac.id>. p. 15.

more effective in learning and teachers easier to give the teaching of English.<sup>7</sup> It helps the students to form a new word based on letters, word or phrase given. Sartika said Anagram is an effective, enjoyable and interesting way to teach vocabulary because it can give the students enjoyment or challenge in studying language.<sup>8</sup> So, the students will know the new vocabulary after rearranging the word. Students can enrich their vocabulary mastery by using this game. The students also can learn vocabularies enjoy without any boredom. From those definitions and researches stated that anagram game is good to vocabulary mastery. It has the positive effect and influence to students' vocabulary mastery. Based on the above explanation the researcher wants to know the positive effect of anagram game to the students' vocabulary mastery.

The researcher expects by using anagram game can improve students' vocabulary mastery. This technique also expects to decrease and solve students' problems, make students are easier in learning vocabulary and make them more motivated in learning vocabulary. The researcher wants to make the interesting way in teaching and learning vocabulary to establish the enjoyable classroom in teaching and learning process.

In order to solve students' problems in learning vocabulary, the researcher is interested to propose the anagram game as the technique in teaching vocabulary. The researcher thinks that anagram game is one of the techniques that can teach vocabulary effectively also can improve students' vocabulary mastery.

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<sup>7</sup> Muhamad Arrofi Rahman, The Effectiveness of Anagram on Students' Vocanulary Size, *Journal of IAIN Palangkaraya*, issued December 2016, [digilib.iain-palangkaraya.ac.id](http://digilib.iain-palangkaraya.ac.id) p.130.

<sup>8</sup> Sartika Manurung, "Improving Students ' Vocabulary Achievement By Applying Anagram Plus Flashcards at the SMP Negeri 7 Pematangsiantar," *Journal of Unimed*, 2013, <https://jurnal.unimed.ac.id>. p. 4.



Therefore, the researcher wants to conduct a research about “The Effect of Anagram Game to The Students’ Vocabulary Mastery at Grade VII MTs N 2 Padangsidempuan”.

## **B. Identification of the Problem**

Based on the background above, there are some problems in students’ vocabulary mastery at VII grade MTs N 2 Padangsidempuan. There are:

1. The students get difficulty in memorizing vocabulary.
2. The students get difficulties in understanding English language because lack of vocabulary.
3. The students feel bored when teaching and learning process.
4. Students feel uninterested when teaching and learning because the technique that’s used.
5. The students lack of motivation.

## **C. Limitation of the Problem**

As mention above, there are many techniques that can be used in teaching vocabulary. In this research the researcher focuses on using anagram game only which is hoped can give positive effects to the teaching vocabulary to the students at VII grade MTs N 2 Padangsidempuan. The researcher focuses on part of speech especially on noun that is found in a classroom and things in a kitchen.

## **D. Formulation of the Problem**

Based on the background of the problem above, the researcher formulated the problems as follow:

1. How is the students' vocabulary mastery before using anagram game at grade VII MTs N 2 Padangsidempuan?
2. How is the students' vocabulary mastery after using anagram game at grade VII MTs N 2 Padangsidempuan?
3. Is there the significant effect of using anagram game on the students' vocabulary mastery at grade VII MTs N 2 Padangsidempuan?

#### **E. Objectives of the Research**

From the formulation above, the objectives of this research are:

1. To describe the students' vocabulary mastery before using anagram game at grade VII MTs N 2 Padangsidempuan.
2. To describe the students' vocabulary mastery after using anagram game at grade VII of MTs N 2 Padangsidempuan.
3. To know the significant effect of using anagram game on students' vocabulary mastery at grade VII MTs N 2 Padangsidempuan.

#### **F. Significances of the Research**

By doing this research, researcher hopes to contribute in the improvement of teaching in vocabulary. Researcher hopes that this research can be benefit for teacher, the students and researcher himself.

1. For the Head master

It is hoped to give more motivation to the English teacher to teach in various and good way.

2. For the teacher

Through this research hoped that this technique can help teacher to teach vocabulary effectively based on the students' characteristics.

3. For the students

The students hoped more comfortable and interest to learn, so teaching and learning activity more fun and it can increase students' vocabulary knowledge.

4. The future researchers

To who interested in the same research as the reference and as an additional consideration to solve the vocabulary problem when find the same problem for the research and the same research.

### **G. Definition of Operational Variables**

To restrain the ambiguity, this research consists of two variables, the definition of those two variables as follow:

1. Anagram game

Anagram is type of word game, the words made by transposing letters of one word to form another. It is a word or phrase created by rearranging the letter of another word or phrase, in which every letter in the original is used to create the new word or phrase. Anagram game is one of the techniques in teaching vocabulary.

2. Students' vocabulary mastery

Mastery is superiority something. It is the great understanding about something. Vocabulary mastery is one of the factors to master the English as foreign language. It means the students should have the ability in

understanding and using the word and meaning, the stock of words of a language in alphabetical order.

## **H. Outline of the Thesis**

This research is divided into five chapters. Each chapter consists of many sub chapters explained as follows:

Chapter I is introduction. This chapter consists of background of the problem, identification of the problems, limitation of the problems, formulation of the problems, objectives of the research, significances of the research, definition of operational variables, and the outline of the thesis.

Chapter II consists of theoretical description, which consists of theoretical of vocabulary and anagram game, review of related findings, conceptual framework, and hypothesis.

Chapter III consists of research methodology, time and place of the research, research design, population and sample, instrument of the research, the techniques of collecting data, validity and reliability, and the last is technique of data analysis.

Chapter IV consists of result of the research. It is talking about the analysis of the data. The result of the hypothesis that found in the research.

Chapter V consists of conclusion of the research that is the result of the research and suggestion.

## CHAPTER II

### THEORETICAL DESCRIPTION

#### A. Description of Vocabulary Mastery

##### 1. Definition of Vocabulary

Vocabulary is one of basic knowledge in language learning. It is used in every language as basic and to support in using language well. Vocabulary is an important aspect to be learnt when someone learns a language also one aspect which owned by every student to make them understand and master the language. The learners should master it firstly for mastering the language. Vocabulary is collection or list of words in particular language. It is all of list of words that someone used to communicate each other. Learning a language requires a lot of vocabulary to master language skills, namely speaking, listening, reading and writing because vocabulary is a factor that supports a person being able to speak.

Hornby said “vocabulary is all the words that person know or use, the words that people use when they are telling about particular subject”.<sup>1</sup> Language is arranged by many words that are produced by vocabulary which include in language component. It gives information or explanation in language terms.

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<sup>1</sup> A.S. Hornby, *Oxford Learner's Pocket Dictionary*, (Oxford: Oxford University Press, 2010), p. 1662.

Iman defines vocabulary as the knowledge of words and word meaning. He stated vocabulary as a list of words arranged in alphabetical order.<sup>2</sup> Vocabulary is list of words with meaning which create a language. Every word in the language has meaning which makes people communicate each other in good understanding.

Vocabulary refers to all of words in the whole language or the words or phrases used in particular variety. Vocabulary, as one of the knowledge areas in language, plays a great role for learners in acquiring a language.<sup>3</sup> It is one of the language component to supports the speaker in communication. It means vocabulary plays a very important role in developing and reaching the four language skills (listening, speaking, reading, and writing).

According to Jack C. Richard and Willy a Renandya, “Vocabulary is a core component of language proficiency and provides much of the basis for how well learners speak, listen, read and write”.<sup>4</sup> It means vocabulary is very important aspect in language. Someone can speak, listen, write and read by using a language because of mastering many vocabularies. By using vocabulary many things can be conveyed both in written or spoken form.

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<sup>2</sup> Iman Alizadeh, “Vocabulary Teaching Techniques : A Review of Common Practices” 1, no. 1 (2016): p. 22., <http://ijreeonline.com/article-1-25-en.pdf> .

<sup>3</sup> Mofareh Alqhatani, “The Importance of Vocabulary in Language Learning and How to Be Taught,” *International Journal of Teaching and Education* III, no. 3 (2015): 21–34, <https://doi.org/10.20472/TE.2015.3.3.002> p. 22.

<sup>4</sup> Jack C. Richard and Williy A. Renandya, *Methodology in Language Teaching and Anthology of Current Practice*, (USA: Cambridge University Press, 2000), p. 255.

Elfrieda H. Hiebert and Michael L. Kamil stated “vocabulary is the knowledge of meaning of words”.<sup>5</sup> The same definition is also delivered by Caroline T. Linse that Vocabulary is the individual’s knowledge about the collection of words.<sup>6</sup> Based on the both definitions, it means that vocabulary is someone knowledge and understanding about words.

Based on explanation above, the researcher concluded that vocabulary is a basic and the most important aspect in learning a language. Vocabulary is a group of word that used in human’s communication to give interaction each other. It refers to all of word that people use to communicate each other.

## 2. Definition of Mastery

Mastering a language is very important. It can help someone to communicate and understand a language well. Mastery come from a verb “master” and suffix “y” become mastery (noun). Master as a verb is something to learn and understand completely. Mastery as a noun is a great knowledge or understanding of a particular thing.<sup>7</sup> Therefore, mastery is a good understanding of something completely.

According to Webster in Mofareh mastery refers to:

- 1) The authority of a master: dominion; the upper hand in a contest or competition; superiority, ascendancy;

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<sup>5</sup> Elfrieda H. Hiebert and Michael L. Kamil, *Teaching and Learning Vocabulary Bringing Research to Practice* (Mahwah, New Jersey: Lawrence Erlbaum, 2005), <https://b-ok.cc/book/667521/c3dae0> p. 3.

<sup>6</sup> Caroline T. Linse, “[Caroline Linse, David Nunan] Practical English La(BookFi).Pdf,” 2005, p.121. <https://b-ok.cc/book/813485/e83d66>

<sup>7</sup> A.S. Hornby, *Oxford Advanced Learners’ Dictionary of Current English*, (Oxford: Oxford University Press, 2010), p. 913-914.

2) Possession or display of great skill or technique; skill or knowledge that makes one master of a subject comment.<sup>8</sup>

Thus, mastery is a great knowledge or understanding of a subject. It is a complete skill or a complete knowledge. So, mastery is a great skill or understanding that makes someone master in a subject.

Swannel in Budi's thesis defines mastery as comprehensive knowledge or use of a subject or instrument. Meanwhile, Porter stated that mastery is learning or understanding something completely and having no difficulty in using it. Meanwhile, Porter stated that mastery is learning or understanding something completely and having no difficulty in using it.<sup>9</sup> Febriana says that "mastery is complete control of something".<sup>10</sup> It means, mastery is comprehending of something without any difficulties in using it.

It can be concluded that mastery is superiority of something. That is the comprehensive knowledge or skill in a subject. Someone has the great knowledge of a particular thing without any difficulties.

### **3. Definition of Vocabulary Mastery**

Vocabulary mastery refers to the number of words that someone knows. Mastery refers to having great skill at something or total dominance over something. The term mastery is not restricted to simply recognize the meaning

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<sup>8</sup> Mofareh Alqhatani, "The Importance of Vocabulary in Language Learning and How to Be Taught" p. 26.

<sup>9</sup> Budi Setiawan, "Improving the Students' Vocabulary Matery Through Direct Instruction," 2010, <https://eprints.uns.ac.id/4397/1/138511008201006411.pdf> p. 9.

<sup>10</sup> Febriana Eka Setyaningsih, "The Use of Word Clap Game to Improve Students' Vocabulary Mastery," 2015, <https://lib.unnes.ac.id/20598/1/2201411097-S.pdf> p. 15.



of certain word. Mastering vocabulary is crucial in language acquisition. It will be difficult to master a language without mastering vocabulary.

Vocabulary mastery is always being an essential part of English. Lewis and Hill said that vocabulary mastery is important for the students. It is more than grammar for communication purpose, particularly in the early stage when students are motivated to learn the basic words. Without having proportional English vocabulary, students will get some difficulties in using English.<sup>11</sup> Someone's vocabulary mastery can be measured by the requirements of generalization, that's being able to define words and application or selecting an appropriate use of it. Vocabulary mastery is one of the important aspects of languages learning, as well as English. It is the good understanding of English vocabulary.

The researcher points that vocabulary mastery is the complete skill or comprehension to understand the stock of words and their meanings of a particular language. Vocabulary mastery plays an important role in four language skills, it is also needed in components of language. It can be said vocabulary mastery is the good understanding about the words and the meaning of the words.

#### **4. Kinds of Vocabulary**

Vocabulary is the important part in learning English language because it is related to other skills, without vocabulary someone cannot learn English well. There are two kinds of vocabulary as stated by Nation, Aeborsold and

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<sup>11</sup> Budi Setiawan, "Improving the Students' Vocabulary Matery Through Direct Instruction" p. 10.

Field in Wahyu, they are active or productive vocabulary and passive or receptive vocabulary.<sup>12</sup> Productive vocabulary is words are used in writing and speaking form. While, receptive vocabulary is words are used in reading and listening form.

Productive vocabulary is the set of words that's an individual can use when writing or speaking. They are words that are well-known, familiar, and used frequently.<sup>13</sup> Productive vocabulary refers to the words that students can pronounce, spell and write. It involves how to use the words in grammatical pattern. In addition, the productive vocabulary is the words, which the learners understand, can pronounce correctly, and use constructively in speaking and writing. It involves what is needed for receptive vocabulary plus the ability to speak or write the appropriate time.<sup>14</sup> Therefore, productive vocabulary can be addressed as an active process, because the learners can produce the words to express their thought to others. It can be recognized and understood in speaking and writing context.

Receptive vocabulary is words that the learners recognize and understand when they occur in context, but which cannot produce correctly. Receptive or passive vocabulary refers to words that students assign some meaning, even if they do not know their full definitions. Receptive vocabulary refers to words

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<sup>12</sup> Wahyu Dwi Widhiastuti, "The Effect of English Pop Songs in Building Vocabulary to Seventh Grade Students of SMP Angkasa Adisutjipto Yogyakarta in the Academic Year of 2010 / 2011," 2012, p. 11, [https://Eprints.Uny.Ac.Id/44099/1/Wahyu Dwi Widhiastuti\\_05202244177.Pdf](https://Eprints.Uny.Ac.Id/44099/1/Wahyu_Dwi_Widhiastuti_05202244177.Pdf).

<sup>13</sup> Paul Meara, *Teaching and Learning Vocabulary, Effective Learning and Teaching in Modern Languages*, 2005, p. 3., <https://doi.org/10.4324/9780203023785>.

<sup>14</sup> Muhammad Fadrulrohman, "Improving Students' Vocabulary Mastery Using Song," 2017, p. 23. <http://eprints.iain-surakarta.ac.id/710/1/Muh%20Fadrulrohman%20A1%20Ihsani.pdf>

students understand, but they do not have to use them.<sup>15</sup> Receptive vocabulary refers to language items that can be recognized and understood in the context of reading or listening.

Lehr & Osborn in Fajar explain two kinds of vocabulary description as follow:

First, words come in two forms, oral and print.

- 1) Oral vocabulary includes the words that are recognized and used in listening and speaking.
- 2) Print vocabulary includes the words that are recognized and used in reading and writing.

Second, word knowledge is composed of two forms, receptive and productive.

- 1) Receptive vocabulary includes words that are recognized when we hear or see them. It is the ability to comprehend passive vocabulary which is used in reading and listening context.
- 2) Productive vocabulary includes words that are recognized when we speak or write. It is an active ability which is used in speaking or writing.<sup>16</sup>

In other hand, vocabulary consists of two kinds, they are oral and print vocabulary come in two forms, receptive and productive vocabulary are composed of two forms. Oral vocabulary includes the words that used in listening and speaking. While, print vocabulary includes the words that used in reading and writing form. Receptive vocabulary is recognized in listening and reading forms. Productive vocabulary is recognized in writing and speaking form.

It can be concluded that two types of vocabulary. They are productive and receptive vocabulary. Productive vocabulary is the set of word that an

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<sup>15</sup> Helena Fortes Ferreira et all., "How to Teach Vocabulary Effectively," 2007, p. 15., [Http://Www.Portaldoconhecimento.Gov.Cv/Bitstream/10961/2431/1/Lastversion.Pdf](http://www.portaldonhecimento.gov.br/bitstream/10961/2431/1/Lastversion.pdf).

<sup>16</sup> Fajar Furqon, "Correlation Between Students' Vocabulary Mastery and Their Reading Comprehension," *Journal of English and Education* 1, no. 1 (2013): 72., <https://media.neliti.com/media/publications/192696-EN-none.pdf>.

individual can use when writing or speaking. Whereas, the receptive vocabulary is language items that can be recognized and understood in the context of reading or listening.

## 5. Classification of Vocabulary

In learning vocabulary there were some kinds of vocabulary. Another ways, vocabulary is also classified into function of words and contents. Kinds of vocabulary are knowledge to know the level of someone, but classified of vocabulary is types of vocabulary itself. The classification of vocabulary intended of such as nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjection that called word classes. It is known as part of speech.

Word class is the classification of words to a language depending on its function in communication. The notion of word class may also be used to account for the structure of the vocabulary as whole. Following an approach that can be traced back to Latin and Greek, traditional grammars of English distinguish eight parts of speech. Eight Parts of speech can be divided into nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjection.<sup>17</sup> Each part of speech is explained as follow:

### 1) Noun

Noun is a word used as the name of a person, place, or thing. The word thing includes all of objects that we can see, hear, taste, touch, or smell, and something that we can think of, but cannot perceive by the

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<sup>17</sup> Howard Jackson, Etienne Ze Amvela, *Words, Meaning, and Vocabulary an Introduction to Modern Lexicology*, (London: Casell 2000), p.18.

sense.<sup>18</sup> According to Gabriele, noun is a word used to name a person, place, thing, or idea.<sup>19</sup> Noun is words refer to things such as people, objects, and creatures. Examples, it is a *book*.

From explanations above, noun is word that has function or used to name of things, such as person, place, or the name of the thing. Thing means anything that we can think of.

## 2) Verb

Verb is word that denotes action. Verbs that denote states rather than action seem less verb like. Verb is the word to show or state an action. “A verb is a word or set of words that shows action (runs, is going, has been painting); feeling (loves, envies); or state of being (am, are, is, have been, was, seem).”<sup>20</sup> Examples:

- a) Aisyah *reads* Al-Quran.
- b) The students are *studying*.

## 3) Adjective

Adjective is used to highlight qualities or attributes. Adjective is a word that used with a noun to describe or point out the person, animal, place or thing which the noun names, or to tell the number or quantity.

Examples:

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<sup>18</sup> Wren, Martin, *High School English Grammar and Composition Latest Edition* (1990), p. 3.

<sup>19</sup> Gabriele Stobbe, *Just Enough English Grammar Illustrated*, 2008, p.2-3., [http://static.ielts-fighter.com/uploads/Tai Lieu/Just Enough English Grammar Illustrated.pdf](http://static.ielts-fighter.com/uploads/Tai%20Lieu/Just%20Enough%20English%20Grammar%20Illustrated.pdf).

<sup>20</sup> Jane Straus, *The Blue Book of Grammar and Punctuation an Easy to Use Guide with Clear Rules, Real World Examples, and Reproducible Quizzes*, Eleventh E (United States: Bass A WileyImprint,2008AD),p.1.,[http://ngoangu.vimaru.edu.vn/wpcontent/uploads/documents/The\\_Blue\\_Book\\_of\\_Grammar\\_and\\_Punctuation-1.pdf](http://ngoangu.vimaru.edu.vn/wpcontent/uploads/documents/The_Blue_Book_of_Grammar_and_Punctuation-1.pdf).

- a) Aisyah is a *clever* girl.
- b) She is a *diligent* student.

4) Adverb

It is word to modify a verb, an adjective or other adverb or word use to explain how, where, when, and why an action. Examples:

- a) Ali goes *to* mosque
- b) She is teaching *in* the classroom.

5) Conjunction

Conjunction is word used to combine one word to another word, one sentence to another one. Examples:

- a) My father *and* my mother go to Makkah
- b) I read Al-Quran *after* prayed

6) Pronoun

It is the word which can take the place of a noun. Example:

- a) *She* is a teacher.
- b) They are *my* family.

7) Interjection

Interjection is word put into a sentence to express a sudden feeling of mind or emotion. Example:

- a) “Wow, it is great idea.”
- b) “Oh! Look at me!”

## 8) Preposition

Preposition is word that used to explain the relation between two grammatical words or a word use with a noun or pronoun to show their relation with some other word in the sentence.

a) We will go *in* June.

b) She is angry *with* me.

In this research, the researcher focuses on noun only (the word of noun or the things in the classroom and things in the kitchen).

Noun is one of the important parts of speech. It is names of person, place, animal or things. Noun is divided into eight kinds, they are: common noun, proper noun, concrete noun, abstract noun, countable, uncountable, collective and material noun. As described below:

### 1) Common Noun

Common noun is word for people, animals, places, or things.<sup>21</sup> It is given in common to every person or thing of the same class or kind. For example, girl, teacher, and country.

### 2) Proper Noun

Proper noun is name for particular people, things, or places. It is written in capital letter. Such as Aisyah, Fatimah, Ali, Padangsidimpuan, Indonesia, etc.

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<sup>21</sup> Anne Seaton and Y. H. Mew, *Basic English Grammar for English Language Learners*, 1st ed. (United States of America, 2007), <http://tbiuinmataram.files.wordpress.com> p. 8.

3) Concrete Noun

Concrete noun is noun that can be perceived through one of the five senses. It can be touched, seen and smell the object.

4) Abstract Noun

Abstract noun is a noun which names quality, action, virtue or state, which ones cannot perceive through one's five physical senses. It is a noun that refers to a thing that does not exist as a material object. Abstract noun is thing that cannot be seen or touched. Such us, kindness, friendship, love, etc.

5) Countable Noun

Countable noun is noun that can be counted. It refers to something that can be counted. Countable noun can be modified by a numeral and that occurs in both singular and plural forms. For example, book, pencil, table, etc.

6) Uncountable Noun

Uncountable noun is noun that cannot be counted. It refers to the thing that cannot be counted or divided into singular or plural. For example, rice, money, water, air, etc.

7) Material Noun

Material noun is the name of a material or substance from which things are made. Such as, silver, gold, iron, diamond, plastic, etc.



### 8) Collective Noun

Collective noun is word for group of people, animals and things. It is refers to group of individuals. For examples, family, team, group, etc.

## 6. Aspect of Vocabulary

Vocabulary is list of words with the meaning that obvious components of language. Vocabulary is an important part of language should be taught. It should be learnt and mastered by students. Some aspects of vocabulary that should be taught and mastered, there are:<sup>22</sup>

### 1) Pronunciation and spelling

The students have to know what a word sounds like (how is pronunciation) and what is look like (it is spelling).

### 2) Grammar

The grammatical rules should be understood by the students when learn a set of new words. The grammar of a new item will need to be taught if this is not obviously covered by general grammatical rules. When teaching a new verb, for example, it might give also its past form, if this is irregular (think, thought), and it might note if it is transitive or intransitive. The same as when teaching a noun, it may wish to present its plural form, if irregular (mouse, mice).

### 3) Collocation

The collocation typical of particular item is another factor that makes a particular combination sound “right” or “wrong” in a given content. It is

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<sup>22</sup> Penny Ur, *A Course in Language Teaching Practice and Theory*, ed. Marion Williams and Tony Wright (United Kingdom, 1996), 60–62., <https://www.pdfdrive.com>.

another piece of information about a new item which it may be worth teaching.

4) Aspect of meaning: denotation, connotation, appropriateness

Denotation is the meaning of a word is primarily what it refers to in the real world, it is often the sort of definition that is given in dictionary. For example, cat denotes as a kind of animal, more specifically, a common, domestic carnivorous mammal.

Connotation is a less obvious component of the meaning of an item. The associations, or positive or negatives feelings it evokes, which may or may not be indicated in dictionary definition. Such as, the word dog, as understood by most British people has positive connotation of friendship and loyalty. While, in Arabian people has negative associations of dirt and inferiority.

A more subtle aspect of meaning that often needs to be taught is whether a particular item is the appropriate one to use in a certain context or not. So, it useful for learners to know that a certain word is very common or relatively rare in polite conversation. For example, the word weep is virtually synonymous in denotation with cry, but it is more formal, tends to be used in writing more than in speech, and is in general much less common.

5) Aspect meaning relationships

How the meaning of one item relates to the meaning of others can be also be useful in teaching. There are various such relationship, they are:

## a) Synonym

Synonym is a word that has same meaning or nearly the same. For example, almost: nearly.

## b) Antonym

Antonym is word that has the opposite meaning of another word. Example, poor: rich.

## c) Hyponym

That's the items that serve as specific example of general concept. For example, lion, cat, rabbit is hyponym of animal.

## d) Co-hyponym

It is other item that is the same kind of thing. Example, red, brown, green are co-hyponym. Co-hyponym also called co-ordinate.

## e) Superordinate

It is a general concept that cover specific items. Example, animal is superordinate of: cat, zebra, and lion.

## f) Translation

Word or expression learners' mother tongue that are more or less equivalent in meaning to item being taught.

## 6) Word formation

The other way vocabulary item is built is by combining to words (two nouns or a gerund and a noun, or a noun and a verb) to make an item. In learning vocabulary, it is needed to learn the process of prefixes and suffixes.

## 7. Importance of Vocabulary

Vocabulary is very important to learn. Vocabulary is one of language components which have an important role in learning English. It is a basic and a foundation to learn English. Vocabulary is list of word that construct a content of discussion both of orally or written. It is the main tools for students to attempt in using English effectively.

The quality of someone's language skill can be seen from quantity and quality of vocabulary. If someone master in vocabulary, it can be easy to make communication with other. Someone does not get confused to use vocabulary in sharing the idea or understanding. Mastering vocabulary is needed to make someone be easier to communicate each other. It can be easier to communicate each other by mastering vocabulary.

Wallace mentions two main reasons about the importance of vocabulary:

- 1) Language exists in two forms, spoken and written, both of them need vocabulary to develop the existence itself.
- 2) Vocabulary is needed for production in learning English as a foreign language rather than only needed for recognition it.<sup>23</sup>

Lewis in Prashant summed up the importance of vocabulary learning, "without grammar very little can be conveyed, without vocabulary nothing can be conveyed".<sup>24</sup> It means that if someone has little grammar, he still can

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<sup>23</sup> Fajar Furqon, "Correlation between Students' Vocabulary Mastery and Their Reading Comprehension," *Journal of English and Education* 1, No. 1 (2013): 71–72., <https://media.neliti.com/media/publications/192696-en-none.pdf>.

<sup>24</sup> Prashant Subhash Mothe, "Innovative Techniques of Teaching Vocabulary at the Intermediate Level in the Second Language Classroom," 2002, 377–90, [http://litu.tu.ac.th/FLLT2013/www.flit2013.org/private\\_folder/Proceeding/377.pdf](http://litu.tu.ac.th/FLLT2013/www.flit2013.org/private_folder/Proceeding/377.pdf) p. 377.

convey something, but if someone hasn't vocabulary, he can't convey anything, can't communicate with other, and can't understand what the people convey. It shows that how vocabulary important for the students in mastering the language.

Santiago stated four importance of vocabulary. The importances of vocabulary. There are:

- 1) Vocabulary as the basic for communication. Nothing can be done without the vocabulary. It is the basis for communication.
- 2) Vocabulary as the reflection of social reality. Having believed that the language is symbols representing human thoughts and feelings, the meaning the reality of the human thought, seems to be only grasped through the language
- 3) Vocabulary as an emotion booster. Common sense views that emotion is physical type that has little association with words used to name it. It is thought the words are instruments to label the emotion with the linguistic symbols.
- 4) Vocabulary as an academic ability predictor. Believing science and technology are widely spread using academic discourses and academic discourses are composed by the string of structured words, it can be concluded that vocabulary is tightly related to the spread of scientific findings.<sup>25</sup>

From the quotation above, it can be summed up vocabulary is very important in language. It is basic for communication. Someone can communicate by using vocabulary. By using vocabulary also make someone be able to share the thoughts or the ideas through the language.

So, the researcher concludes that vocabulary is an important aspect of language. It is very important to the students. It can help the students to acquire the considerable understanding of a large number of words. Vocabulary also creates the communication each other in either oral or written form.

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<sup>25</sup> Santiago Dakhi, "The Principles and the Teaching of English Vocabulary : A Review," *Journal of English Teaching* 5, no. February 2019 (2019): 15–25, <http://ejournal.uki.ac.id>. p.16-17.

## **B. Technique in Teaching Vocabulary**

### **1. Definition of Technique in Teaching**

Teaching is a set of events, outside the learners which are designed to support internal process of learning. Teaching defined as helping others learn to do a particular things, is an everyday activity in which many people engage regularly. Teaching is helping others learn to do a particular thing. Professional classroom teaching, on the other hand is specialized work that is distinct from informal, common place showing, telling, or helping.<sup>26</sup> In education context, teaching is a highly complexion process to deliver knowledge. It means that teaching is an activity or the process of sharing the knowledge and helping others to learn something.

In teaching and learning process, teachers need to have a good ways to share or give the materials to students. Technique is the ways to doing something that need skill or thought. Technique means the way which is used to do a certain activity. Technique in teaching is the teacher's method to convey the lesson material to students. There are some teaching techniques can be used in teaching. There are:

#### **a. Flipped classroom (inverting the class)**

The flipped classroom model basically involves motivate students to prepare or study before the class started. Students prepare a topic at home, so the students can master the topic. It makes students be able to answer the questions about the topic they have already studied.

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<sup>26</sup> Deborah Loewenberg Ball and Francesca M. Forzani, "The Work of Teaching and the Challenge for Teacher Education," *Journal of Teacher Education*, no. january 11 (2010), <https://doi.org/10.1177/0022487109348479> p. 498.

b. Design thinking (case method)

Design thinking or case method prepare the students for the real world and arouses the students' curiosity, analytical skills and creativity. Design thinking for educators also provides teacher with online toolkit with instruction to explore design thinking in any classrooms.

c. Self-learning

The key in self-learning is let the students focus on exploring an area which is interest them and learn about it for themselves. Use mind map is a common example of self-learning.

d. Gamification

Gamification is learning through the use of games. It is one of the teaching techniques that have already been explored. Gamification or learning through play is a learning technique that can be very effective in any ages. It is also useful to keep the students motivation.

e. Social media

A variant of the previous section is to utilize social media in classroom. Nowadays, students are always connected to their social media network and need little motivation to get them engaged with social media in the classroom.

f. Free online learning tools

Teacher can create an interactive and dynamic classroom environment. There is an array of free online learning tools available which

teacher can use to encourage the students to learn, and create a fun in the classroom.<sup>27</sup>

So, teaching technique is the ways that teacher use to present a subject to students. Teaching technique can help the students be easier in teaching and learning proses. It makes students enjoy and help the students to be easier in understanding the lesson subject.

## **2. Techniques in Teaching Vocabulary**

Vocabulary has an important role in learning languages. As in English learning it has the good impact on the language skills (listening, speaking, reading, and writing). In fact, learning English is not easy as we know. The students often find the difficulties in learning. They usually do not understand what the teacher said. This case happens because the students poor of vocabulary. It makes them be bored and lack of motivation.

To solve the students' problem in learning English, the teacher should have many ideas to update the students' way in learning. It can also to increase the students English achievement. Teaching vocabulary is not an easy to work. Teacher should find the best or the effective technique to teach English vocabulary. In real teaching and learning process, vocabulary is still being a problem for both of teacher and the students. It means before the teacher going to teach the students in mastering English vocabulary, the teacher should be knowledgeable or master in English vocabulary first. Many students fail in learning English because they have less English vocabulary. Technique is the

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<sup>27</sup> Diego santos, "6 Techniques You Should Know!", (<https://www.goconqr.com>, accessed at August 23, 2019 retrieved on 12:00 pm).



ways to presenting a subject to the students. Technique in teaching vocabulary can help students to learn English vocabulary easily. By using technique also can help the students enjoy in teaching and learning process.

In teaching vocabulary, the teacher should use the best way or technique to teach the students to make students easier in understanding the vocabulary. This technique also aims to create the more effective and efficient in teaching and learning process. Some techniques that can be used in teaching vocabulary as follows:

1) Using objects.

It refers to bringing objects, use visual aids, demonstration into the classroom or using the things existing in the classroom in teaching vocabulary. This technique also is known as realia. In other words students are shown a book if teacher wants to teach them the word “book”. Moreover he can ask students: What is this? The answer would be: This is a book!

2) Mime, expressions, and gestures

Refer to actions that are better explained by gesture. Teaching using this technique is relevant for students’ memorization. The students will receive word easily by this technique. For example, adjectives, “sad”, “happy” mime and taking hat off your head to teach hat.

3) Contrast

Contrast shows that some words can be taught in relation with their opposite meaning. For example the word good has the opposite bad, big has the opposite small.

#### 4) Enumeration

Enumeration is used when referring to general or specific words. An enumeration is a collection of items complete, ordered listing of all the items in that collection. For example the general term “fruit” has a sense relation with its specific terms such as: apple, pear, cherry, etc.

#### 5) Translation

Not all words can be translated and furthermore students are not encouraged to interact with the new words. In some situation, it will help the teacher.

#### 6) Drawing

Drawing can be done in the black or whiteboard also drawn on flashcard. It can help the students understand easily.

#### 7) Eliciting

This technique is motivating and memorable by simply giving pupils a list of words to learn.<sup>28</sup>

In addition, the other techniques in teaching vocabulary are:

##### 1) The dictionary

Dictionary is one of the students’ learning AIDS in learning English. Teacher can ask the students to look up the dictionary to find out the word that needed. This way makes students practice in dictionary using.

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<sup>28</sup> Mofareh Alqhatani, “The Importance of Vocabulary in Language Learning and How to Be Taught” p. 26-29.

## 2) Word Games

There are some varieties of word games. The word games are useful for practicing and build the vocabulary. For example, crossword puzzle, anagram, and scrabble.

## 3) Description or Definition

In building or improving students' vocabulary, teacher can describe and define the objects.<sup>29</sup>

From those various techniques above, there are some techniques or ways in teaching vocabulary. There are, realia, mime, contrast, explanation, enumeration, translation, the dictionary, word games and definition. Those techniques can be used in teaching vocabulary.

### **3. The purpose of Teaching Vocabulary**

The purpose of mastering English vocabulary for the students is to make them easier and be able to learn English. Learning a language is learning its vocabulary. Purpose of vocabulary is to increase learners' ability in language and to have knowledge about words and its element. We cannot learn language without vocabulary. It is impossible because vocabulary is all the words that we use in language.

According to Allen in Julie teachers in each content area should implement purposeful vocabulary instruction to:

- 1) Increase reading comprehension,
- 2) Develop knowledge of new concepts,
- 3) Improve range and specificity in writing,

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<sup>29</sup> Dewi Nur Halimah, "Improving the Students' Vocabulary Mastery By Using Story Telling," 2017, p. 34–35., <http://www.eprints.iain.surakarta.ac.id>.

- 4) Help students communicate more effectively,
- 5) Develop deeper understanding of words and concepts with which students are only nominally familiar.<sup>30</sup>

Thus, vocabulary also makes someone be able in four language skills, listening, speaking, reading and writing. Not only be able in those skills, it makes someone comprehend in those skills. Develop someone's understanding of words becomes a purpose of vocabulary.

Inbaraj stated the objectives of teaching and learning vocabulary is to know a word in a target language may mean the ability to recognize it in its spoken or written form, recall it when needed, relate it to an appropriate objective or concept, use it in the appropriate grammatical form, pronounce it, speak in a recognizable way, spell it clearly and correctly, use it with words that correctly goes with it.<sup>31</sup> Vocabulary is needed to make someone understand about the language. It is needed also to make someone be able in four language skills (listening, speaking, reading, and writing).

It can be concluded that teaching vocabulary purpose is to make someone be able in learning English and good in four language skills. The purpose also to creates the relation by each other through the good communication. Moreover, making someone have a great or deep understanding of words is also the objectives of teaching vocabulary.

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<sup>30</sup> Julie Meltzer, Edmund T Hamann, *Meeting the Literacy Development Needs of Adolescent English Language Learners Through Content-Area Learning -PART TWO: Focus on Classroom Department of Teaching, Learning and Teacher Education Faculty Publications: Department Of Teaching, Learning An*, Ed. Sherri Miles And Elizabeth Devaney, *The Education Alliance*, 2015, p.55., [https://www.researchgate.net/publication/266099749\\_meeting\\_the\\_literacy\\_development\\_needs\\_of\\_adolescent\\_english\\_language\\_learners\\_through\\_contentarea\\_learning\\_part\\_two\\_focus\\_on\\_classroom\\_teaching\\_and\\_learning\\_strategies/download](https://www.researchgate.net/publication/266099749_meeting_the_literacy_development_needs_of_adolescent_english_language_learners_through_contentarea_learning_part_two_focus_on_classroom_teaching_and_learning_strategies/download).

<sup>31</sup> Inbaraj, *English Language Teaching*, (Chennai, India: Tamilnadu Textbook Corporation, 2008), p. 156. <https://www.thesisscientist.com/docs/Study%20Notes/dae3aa37-d69b-41ef-86ff-87bd224adf0f>.

## C. The Concept of Anagram Game

### 1. Description of Game

Teaching vocabulary must be interesting and the teacher should be creative to create fun and meaningful learning because vocabulary is very essential in a language. A game is an activity with rules, a goal and an element of fun.<sup>32</sup> El Shamy in Ibrahim defines a game as a “competitive activity played according to rules within a given context, where players meet a challenge to achieve an objective and win”.<sup>33</sup> Blanka states that game is perceived as a meaningful fun activity governed by rules.<sup>34</sup> According to these definitions, it means game is an activity that has player also the rules to play it.

Kablan in Husam stated that the game activities, which may have an important teaching role, contribute teacher and students in the class.<sup>35</sup> It is claimed that the game applications which are well organized. It can increase the learning process, strengthen the retention, and improve the students’ motivation becomes the aims of the game activity technique. So, game is an activity with the rules and goal. Games help and encourage many learners to sustain their interest and work. Games also help the teacher to create contexts in which the language is useful and meaningful.

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<sup>32</sup> Jill Hadfield, *Elementary Vocabulary Games A Collection of Vocabulary Games and Activities for Elementary Students of English* (Longman: Pearson Education, 1998), p. 4., [http://elibrary.bsu.az/books\\_250/N\\_20.pdf](http://elibrary.bsu.az/books_250/N_20.pdf).

<sup>33</sup> Abdelrazig Ibrahim, “Advantages of Using Language Games in Teaching English as a Foreign Language in Sudan Basic Schools,” *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)* 37, no. 1 (2017), <https://asrjetsjournal.org>. p. 141.

<sup>34</sup> Blanka Frydrychova, “Games in the Teaching of English,” *Procedia - Social and Behavioral Sciences* 191 (2015): 1157–60, <https://doi.org/10.1016/j.sbspro.2015.04.312> p. 1158.

<sup>35</sup> Husam Rushdi Ishtawi, “The Effects of Game Strategy on the Learning of English Grammar for the Twelfth Grade Students,” 2011, p. 41., <http://library.iugaza.edu.ps/thesis/93881.pdf>.

Game helps teaching and learning process easier and fun. Ali stated that games are advantageous and effective in learning vocabulary. It is motivating because it usually involves friendly competition and create cooperative learning environment. Game can improve students' communicative skills and they have a chance to use the target language.<sup>36</sup> Game makes students motivate and enjoy in learning process because it a fun ways in learning. It will sustain the students' interest and motivate.

Chen in Ibrahim summed up the benefit of using games in learning classrooms can be summed up in nine main points which are the following:

- 1) Games are learner-centered (the student is always in focus).
- 2) Games promote a communicative competence.
- 3) Games create a meaningful context for language use.
- 4) Games increase learning motivation
- 5) Games reduce learning anxiety.
- 6) Games integrate many various linguistic skills.
- 7) Games encourage creativity and spontaneous usage of the language.
- 8) Games construct a cooperative learning environment.
- 9) Games foster participatory attitudes of the students.<sup>37</sup>

Based on above explanation it shows that game has the advantages in learning vocabulary in the classroom. Playing game in classroom can improve students interest and motivation in learning. Game keeps students concentration in learning because the students enjoy to playing game.

In summary, game is a fun activity with the rules and goal. It is an enjoyable activity to enrich students' interest in learning. Students' enthusiasm

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<sup>36</sup> Ali Derakhshan and Elham Davoodi Khatir, "The Effects of Using Games on English Vocabulary Learning," *Journal of Applied Linguistics and Language Research* 2, no. 3 (2015): P. 40., <https://pdfs.semanticscholar.org/774c/2cae6b8aefbe2fdcf88c151d0441bebba857.pdf>.

<sup>37</sup> Ibrahim, "Advantages of Using Language Games in Teaching English as a Foreign Language in Sudan Basic Schools," p. 142.

and confidence can grow through playing a game because it is motivate and enjoyable.

## 2. Definition of Anagram Game

Game is an easy way to apply in process of learning. It is interesting and gives the easy way to the students to recall and memorize vocabulary. Therefore, the teacher should be creative to create fun and meaningful learning because vocabulary is very essential in language. The role of games in teaching and learning vocabulary cannot be denied. However in order to achieve the most from vocabulary games, it is important that suitable games are chosen. Whenever a game is to be conducted, the number of students, proficiency level, cultural context, timing, learning topic, and classroom settings are factors that should be taken into account. The suitable game helps and encourages many learners to sustain their interest and work. Games also help the teacher to create contexts in which the language is useful and meaningful.<sup>38</sup> It means the suitable game is very important. The game chosen should be appropriate the proficiency of the students, learning topic, time and classroom management. The appropriate game helps the students enjoy the condition and situation in teaching and learning process. So, the game should be appropriate.

The appropriate game in teaching vocabulary can help in teaching. It helps students to be interested in learning. According to Wright, Betteridge and Buckby in Sokhira divided games based on their general characters and spirits

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<sup>38</sup> Amaal Al Masri ; Majeda Al Najar, "The Effect of Using Word Games on Primary Stage Students Achievement in English Language Vocabulary in Jordan," *American International Journal of Contemporary Research* 4, no. 9 (2014): p. 144., [http://www.ajcnet.com/journals/Vol\\_4\\_No\\_9\\_September\\_2014/17.pdf](http://www.ajcnet.com/journals/Vol_4_No_9_September_2014/17.pdf).

as, picture games, psychology games, caring and sharing games, sound games, story games, word games, true and false games, memory games, question and answer games, guessing and speculating games.<sup>39</sup> It means word games is one of the game that can be applied in teaching vocabulary.

Dale and O'Rourke in Richard stated one of the interesting ways for learning vocabulary is using word games exercises. There are several types of word games, such as puns, riddle, crossword puzzle, and anagram. One of the games is anagram game.<sup>40</sup> Anagram is the first type of word game popular in Europe during the middle ages. Anagram art created by the Greek poet Lycophron. Before the era of computerization, anagram built using pen and paper from a combination of letters and experiment with variations. Anagram comes from the Greek "ana," meaning "after" and "gramma," means "letter or writing". According to Collins Cobuild English Dictionary in Ahdian, it is a word or phrase created by rearranging the letters of another word or phrase, in which every letter in the original is used in the creation of word and the new phrase.<sup>41</sup> This definition related with Maimunah that anagram technique is a type of word play, the result of rearranging the letters of a word or phrase to produce a word or new word or phrase, using all the original letters exactly once, for example orchestra can be rearranged into carthorse. Someone who

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<sup>39</sup> Sokhira Linda Vinde Rambe, "Fostering Lecturers' Teaching Creativity through Games," *English Education Journal* 07, no. 01 (2019): 95–112, <http://jurnal.iain-padangsidiimpunan.ac.id/index.php/EEJ/article/view/1656/1410> p. 104.

<sup>40</sup> Richard Devara Candra Kumara, "The Use of Anagrams to Improve Students' Vocabulary Learning Strategy in XI IPA 1 Class, SMA Pangudi Luhur Sedayu," 2016, <https://repository.usd.ac.id>, p. 15.

<sup>41</sup> Ahdian Rosadi, "The Effectiveness of Anagram Technique in Teaching Vocabulary," *Voices of English Language Education Society* 1, no. 1 (2017): 43., <http://e-journal.hamzanwadi.ac.id/index.php/veles/article/view/392>.



creates anagrams is called an anagrammatist. The original word or phrase is known as the subject of the anagram.<sup>42</sup> The same thing also delivered in Oxford dictionary, anagram is word made by changing the order of the letters of another word.<sup>43</sup> It means that anagram is a type of word play to rearrange the letter into new word or created the word.

In addition, Menelaos and Chris stated that the goal in solving an anagram is to rearrange a set of given letters into an orthographically correct order that follows the orthotactic rules of the language. Solving anagrams tasks had been used to assess aspects of word recognition processes.<sup>44</sup> From that definition, it means anagram is ordered to rearrange the word or phrase or set of letters to form a new word.

In conclusion, anagram game is a type of word game or word play. The game aims to rearranging the words or phrase, to create a new word or phrase. This game is one of the interesting games that can motivate and increase the students' vocabulary mastery. Anagram can enrich students' vocabulary because anagram aims to arrange and create a new word from the randomized letters or words.

### **3. The Advantages of Anagram Game**

Game is one of the fun ways in teaching vocabulary. It makes students more active and interested in learning. Game is also appropriate to be used in

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<sup>42</sup> Maimunah, Bachtiar, "Improving Students' Vocabulary Achievement In Reading Recount Text through Anagram Technique," *Journal of Unimed*, 2016, 1–13, <https://jurnal.unimed.ac.id>. p. 5.

<sup>43</sup> A.S. Hornby, *Oxford Learner's Pocket Dictionary*, p. 14.

<sup>44</sup> Menelaos E. Sarris, Chris T. Panagiotakopoulos, "Playing With Words": Effects of an Anagram Solving Game-Like Application for Primary Education Students" 6, no. 2 (2013): 111., <https://doi.org/10.5539/ies.v6n2p110>.

teaching vocabulary.<sup>45</sup> It helps teaching and learning process more enjoyable and interesting.

David Betteridge and Michael Buckby in Diyan say that some advantages of games are applied in teaching English classroom. One of the games is anagram game. The advantages are:

- 1) Game makes students more enjoy the subject material.
- 2) It will encourage students to communicate and do interaction each other.
- 3) Game provides motivation to students to keep learning.
- 4) By using game, the teacher will teach the students more than if the teacher uses conventional method.
- 5) It doesn't need more action and material to give game in the classroom.<sup>46</sup>

Anagram technique very important to teach vocabulary, there are benefits of anagram. Anagram helps the students more effective in learning and helps the teachers to give material in teaching English.<sup>47</sup> Meanwhile anagram technique is a type of word play. Many words will be got through this technique. Automatically, this technique will increase students' vocabulary. By using this technique, the students will not be bored because this technique is appropriate to their characteristics which is they incline more interested to play.<sup>48</sup> So, anagram game is affective in teaching vocabulary because this game

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<sup>45</sup> Nur Hidayat, "November 2016, 2016 Published: 19," *Journal of English Educators Society* 1, no. October (2016): 96., <https://doi.org/10.21070/jees.v1i2.446>.

<sup>46</sup> David Betteridge and Michael Buckby in Diyan Yulianto, *Mahir Bahasa Inggris dengan Ragam Permainan Kata*, (Yogyakarta: Diva Press, 2016), p. 12.

<sup>47</sup> Muhamad Arrofi Rahman, "The Effectiveness of Anagram on Students' Vocabulary Size," *Journal of IAIN Palangkaraya*, December (2016): <http://digilib.iain-palangkaraya.ac.id/990/>. p. 130.

<sup>48</sup> Ahdian Rosadi, "The Effectiveness of Anagram Technique in Teaching Vocabulary" p. 43.

exercises the students to playing the word that can improve the students' vocabulary.

According to Sartika, some advantages of anagram, there are:

- 1) Anagram is an effective, enjoyable and interesting way to teach vocabulary because it can give the students enjoyment or challenge in studying language.
- 2) Encourage students to look carefully at words.
- 3) Students can practice to form other words from the given clues, match words with definition.
- 4) Provide spelling practice.
- 5) Show the students how the letters of many words can be manipulated to form other words.
- 6) Emphasize the importance of letter position in relation to word meaning.
- 7) Increase someone's vocabulary.
- 8) Motivate and encourage the students' interest learning vocabulary.<sup>49</sup>

Thus, anagram technique is one of the word games that have many advantages. It is a fun ways to teach vocabulary through playing a word. Using anagram game technique can decrease students' boredom. It can improve students' learning motivation.

Based on the explanations above the researcher concludes that anagram game is one of technique of teaching vocabulary that has a good effect to students' vocabulary mastery. It can increase students' vocabulary mastery. In

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<sup>49</sup> Sartika Manurung, "Improving Students' Vocabulary Achievement By Applying Anagram Plus Flashcards at the SMP Negeri 7 Pematangsiantar," 2014, p. 4.

other hand, it can motivate students in learning vocabulary, and decrease students' boredom when teaching and learning process.

#### 4. Teaching Vocabulary Using Anagram Game

There are many ways in applying anagram to the students in teaching vocabulary by using anagram game, such as:

1) The students form other word from the key word given. For examples:

a) Grandmother : mother, other, her, ear, etc.

b) Learning : earn, lean, liar, etc.

c) Reader : dear, read, ear, red, etc.

d) Handsome : dome, hand, some, name, etc.

e) Weather : her, tea, hat, eat, etc.

2) The students rearrange the letters in bracket after that fill in each blank with the appropriate anagram to complete the sentence. For example:

Thecare	Bftaueilu	Ldouyl
Pnhuis		Shlcoo

a) Please speak loudly, so I can hear your voice

b) You are very beautiful wearing that gown

c) My English teacher is very friendly

d) The teacher will punish us if we don't do our homework

e) My school is in front of my house

3) The students omit one or some letters of the key word and transpose rest.

Example:

a) Key word: perceive

Definition: got or accept something

New word: receive

b) Key word: apple

Definition: whiter than usual because of illness, not bright

New word: pale.

4) The students match the scramble word on the left to its arrangement on the right.<sup>50</sup>

Gab	Pencil
Lciepn	Book
Okbo	Bag

From the above quotation, there are many ways to applying anagram game. In this research the researcher focus on the fourth way. That is the students match the scramble word on the left to its arrangement in the right.

## 5. Procedures of Anagram Game in Teaching Vocabulary

The procedures of applying anagram game as below:

- 1) Divided the students into seven groups. Every group consist of 5 students.
- 2) Give the anagram list to every group.
- 3) Students get some words consist of few random words, 3 until 6 words.
- 4) Asking the students to arrange and form the randomized words given into a new word correctly.
- 5) Asking the students to match the random word on the left to its arrangement on the right.<sup>51</sup>

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<sup>50</sup> Insan Bara Rosada, "Improving Vocabulary Mastery By Using Anagram Game at the First Grade Students of MTsN Karanganyar in Academic Year 2015/2016," p. 28–29.

#### D. Conventional Strategy

Conventional strategy is the strategy used by the teacher based on mutual agreement in a school. It is a traditional way that is used by a teacher in teaching and learning process. Conventional is the strategy or the way that usually used by the teachers to teach the vocabulary to students.<sup>52</sup> Based on above explanation, the researcher concluded that conventional strategy is the strategy used by the teacher to teach material based on agreement at school. The procedure used by the English teacher at MTs N 2 Padangsidempuan is explaining, memorizing and give the homework to the students.

#### E. Review of Related Findings

In this sub chapter the researcher provides five previous studies related to this research. There are three previous related studies that will be described.

The First, the research by Fanti Maria Fifah with the research result is improve, the score before using anagram is 68.294, after doing treatment the mean score is 77.647. It means that anagram game has the significant effect to students' vocabulary mastery. The improvement also seen from  $t_{count}$  is higher than  $t_{table}$ , that is  $6.291 > 2.120$ .<sup>53</sup>

The second, performed by Sartika Manurung, this study was conducted by using classroom action research. The result of the research showed that the mean

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<sup>51</sup> Insan Bara Rosada, "Improving Vocabulary Mastery By Using Anagram Game at the First Grade Students of MTs N Karanganyar in Academic Year 2015/2016" p. 33.

<sup>52</sup> Jhon Denden, Conventional Strategy, Available at <http://www.britisnis.com/EBchecked/topic/421797/nuclear-strategy/52993/conventional-strategy>, (Accessed on January 08<sup>th</sup>, 2020 at 08.00 P. M.)

<sup>53</sup> Fanti Maria Fifah, "The Effectiveness of Using Anagram Technique Toward Students' Vocabulary Achievement of The Eight Grade at MTs Wahid Hasyim Setinggal-Wonodadi," 2016, <http://repo.iain-tulungagung.ac.id/eprint/4337>.

of students' score in pre-test I was 56.41, the mean of students' score in post-test I was 69.22. The mean of students' score in post-test II was 76.72. There were the improvement of students' achievement, that's  $56.41 > 76.72$ .<sup>54</sup>

The third is from Siti Nurjanah, the research point the positive effect in using anagram game to students' vocabulary. It can be seen from the  $p < \alpha$ . If  $p < \alpha$  means  $H_a$  is accepted, sig. 2 tailed ( $p$ ) was lower than alpha ( $\alpha$ ) 0.05. It means anagram game technique has the significant effect to students' vocabulary.<sup>55</sup>

The fourth, the research by Mirwana Siska found the improvement of the students' vocabulary mastery. It can be stated from the result of pre-test and post-test I until II. Mean of pre-test I was 46.04 and post-test I was 68.54, means post-test I was higher than pre-test I. The mean of students' score in post-test II was 78.12. The score improvement from pre-test to post-test I was 22.5 point. While, the improvement from post-test I to II was 10.18 point.<sup>56</sup>

The last is performed by Kartini, this study found that using anagram was effective in teaching vocabulary. It can be known from the increased of students' achievement. It was the obtained "t" (5.132) was higher than critical value (1.13).<sup>57</sup>

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<sup>54</sup> Sartika Manurung, "Improving Students' Vocabulary Achievement By Applying Anagram Plus Flashcards at the SMP Negeri 7 Pematangsiantar." 2014, (Universitas Negeri Medan).

<sup>55</sup> Siti Nurjanah, "The Effect of Anagram Technique on Students' Vocabulary (a Quasi-Experiment Research of the Eight Grade Students at MTs N 13 Jakarta in the Academic Year 2017/2018)," 2018, <http://repository.uinjkt.ac.id>. (Syarif Hidayatullah State Islamic University), <http://repository.uinjkt.ac.id>.

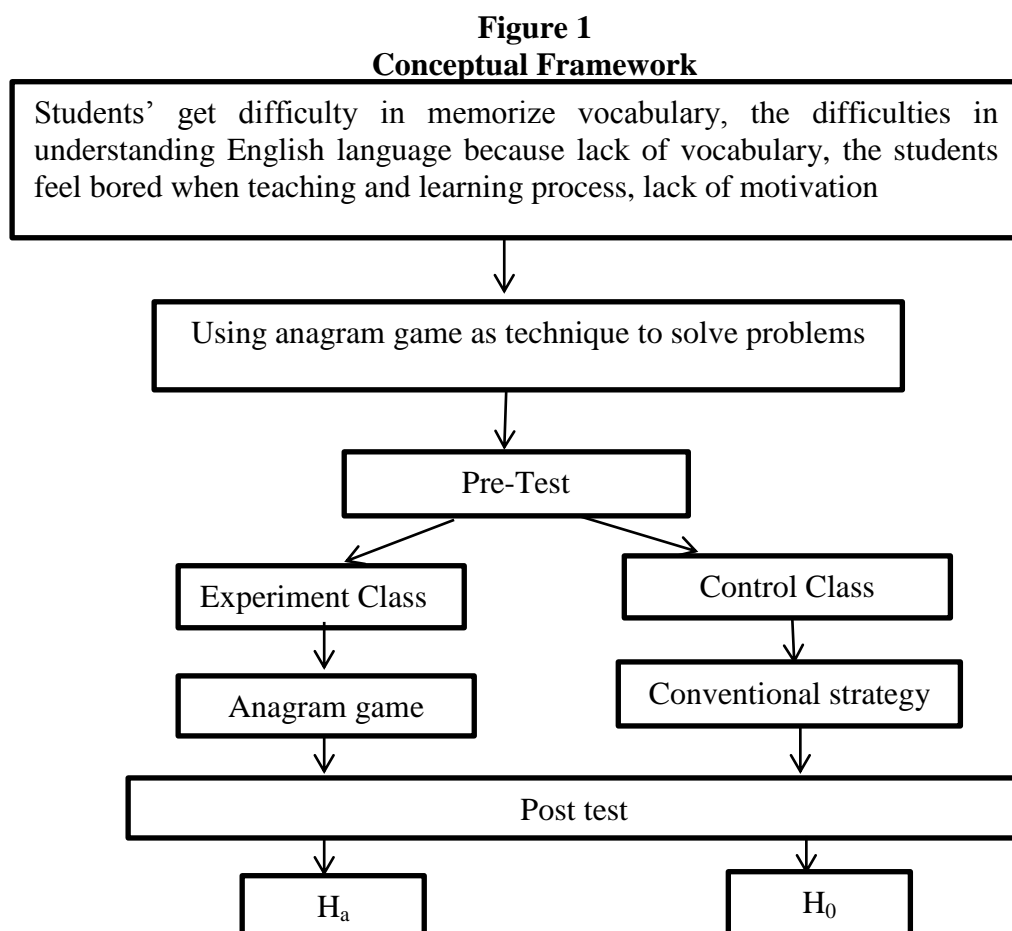
<sup>56</sup> Mirwana Siska, "Improving Students' Vocabulary Achievement by Applying Anagram Plus Flashcard in the First Grade of MTs Persatuan Amal Bakti (PAB) 1 Helvetia," 2017, [http://repository.uinsu.ac.id/2646/1/Mirwana Siska Ready upload.pdf](http://repository.uinsu.ac.id/2646/1/Mirwana%20Siska%20Ready%20upload.pdf).

<sup>57</sup> Kartini, "Teaching Vocabulary By Using Anagram to The Fifth Grade Students of SD Negeri 42 Palembang," no. August (2010), <http://repository.um-palembang.ac.id/id/eprint/1156/1/SKRIPSI963-1706225934.pdf>.

In summary, from the above description, anagram game technique has the good effect to students' vocabulary. It known from above related findings that showed the positive result of the research. So, the researcher hopes anagram game has the effect and can improve students' vocabulary mastery.

## F. Conceptual Framework

The students have to have many vocabularies. To have and master vocabulary the teacher should has the good technique in teaching vocabulary, also students need the fun, enjoyable and easier technique to help them understand. By using anagram game as the technique in teaching vocabulary, it can help teacher to teach vocabulary mastery interesting and easier. The conceptual framework can be seen as the picture below:





From the draft above, the researcher will try anagram game as technique to solve the students' problem in vocabulary mastery. Before doing the technique the researcher will give pre-test to experiment and control class. Then the researcher will teach by using anagram game in experiment class. While, in control class, the researcher will not doing the technique (use the conventional learning method). Then the researcher will give post-test to both of class, and compare the result of the post-test.

### **G. Hypothesis**

The hypothesis of the research as follow:

1.  $H_a$ : There is the significant effect of anagram game to the students' vocabulary mastery at grade VII MTs N 2 Padangsidimpuan.
2.  $H_0$ : There is no the significant effect of anagram game to the students' vocabulary mastery at grade VII MTs N 2 Padangsidimpuan.

### **CHAPTER III**

#### **RESEARCH METHODOLOGY**

##### **A. Place and Time of the Research**

The research conducted in MTs N 2 Padangsidempuan. It is located at H.T. Rizal Nurdin Km. 6, 5 PAL-IV Pijorkoling, Padangsidempuan. It was started from March until December 2019.

##### **B. Research Design**

This research used quantitative with experimental method. It is a research that can test hypothesis based on cause and effect relationship between one variable to other variable. This research was design which is pre-test and post-test design. So, experimental research is research aims to looking for the effect of each variable.

In this research, the researcher used two classes, as an experimental and control class. The experiment class is the class teaches by using anagram game as treatment. The control class is the class teaches by using conventional way or without treatment. The research design can be seen as table below:

**Table 1**  
**Research Design**

<b>Class</b>	<b>Pre-test</b>	<b>Treatment</b>	<b>Post-test</b>
Experimental class	√	Anagram game	√
Control class	√	Conventional	√

Based on the above table, both class experiment and control class get pre-test. Experiment and control class also get post-test with the same question. The difference between experiment and control class is in the treatment that had given.

Experimental class used anagram game as the technique in teaching vocabulary.

Meanwhile, control class used conventional technique in teaching vocabulary.

## C. Population and Sample

### 1. Population

Population is the whole object or students at grade VII of MTs N 2 Padangsidimpuan. The population of this research was all the seventh grade students of MTs N 2 Padangsidimpuan consist of five classes. It can be seen as:

**Table 2**  
**Population**

No	Class	Total Students
1	VII-1	39
2	VII-2	39
3	VII-3	39
4	VII-4	37
5	VII-5	37
Total		191

*Source:* school administration data of MTs N 2 Padangsidimpuan

### 2. Sample

The researcher used random sampling in this research. The researcher used two classes as sample from all population in this research. Those two classes were VII-2 and VII-3. The experimental class was VII-2 consist of 39 students and VII-3 consist of 39 students as control class. So, total number of sample of this research was 78 students. To know the homogeneity of the sample before using random sampling, the researcher did normality and homogeneity test as follows:

a. Normality test

The normality test aims to know whether the data of research is normal not. The data can be tested by using *Chi-Quadrate*, as follow:<sup>1</sup>

$$x^2 = \sum \left( \frac{f_o - f_h}{f_h} \right)$$

Where:

$x^2$  = Chi-Quadrate

$f_o$  = frequency is gotten from the sample or result of observation (questioner)

$f_h$  = frequency is gotten from the sample as image from frequency is hoped from the population

To calculate the result of *Chi-Quadrate*, it is used significant level 5% (0.05) and degree of freedom as big as total of frequency is lessened 3 (dk = k-3), if result  $x^2_{\text{count}} < x^2_{\text{table}}$ . So, it concluded that data is distributed normal.

b. Homogeneity test

Homogeneity test is used to know whether control class and experimental class have the same variant or not. If both of classes are same, it called homogenous. Homogeneity test is used to find out whether the data is homogeny or not. To test homogeneity uses Harley test, as:

$$F = \frac{\textit{The biggest variant}}{\textit{The smallest variant}}$$

Where:

Hypothesis is accepted if  $F_{(\text{count})} \leq F_{(\text{table})}$

Hypothesis is not accepted if  $F_{(\text{count})} \geq F_{(\text{table})}$

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<sup>1</sup> Mardalis, *Metode Penelitian: Suatu Pendekatan Proposal*, (Jakarta: Bumi Aksara, 2003), p.85.

After comparing normality and homogeneity test of the all classes, the researcher found that all classes were homogenous. So, the researcher concluded that VII-2 and VII-3 were the sample of this research. The researcher chose VII-2 and VII-3 as the sample because both of class has the same right to be chosen.

#### **D. Instrument for Collecting the Data**

The instrument which used in this research was test. Test is some questions to measure someone's knowledge, ability and intelligence to know it is already mastered and not yet the learning material. It is used to know how far the students' knowledge about vocabulary mastery. In this research, the researcher uses multiple choice tests as the instrument for collecting the data. It can be seen as indicator below:

**Table 3**  
**Indicators of Vocabulary Mastery (Pre Test)**

<b>No</b>	<b>Indicators</b>	<b>Items</b>	<b>Number of Item</b>	<b>Score</b>	<b>Total Score</b>
1	Students are able to identifying the name of the things in the classroom	10	1, 2, 3, 5, 8, 10, 11, 14, 16, 17	5	50
2	Students are able to identifying the name of the things in the kitchen	10	4, 6, 7, 9, 12, 13, 15, 18, 19, 20	5	50
Total		20			100

**Table 4**  
**Indicators of Vocabulary Mastery (Post Test)**

No	Indicators	Items	Number of Item	Score	Total Score
1	Students are able to identifying the name of the things in the classroom	10	1, 3, 5, 7, 8, 10, 11, 13, 15, 16	5	50
2	Students are able to identifying the name of the things in the kitchen	10	2, 4, 6, 9, 12, 14, 17, 18, 19, 20	5	50
Total		20			100

There were 50 items multiple choice test in this research. Where 25 items for pre-test and post-test before validated. The test consists of 20 items after validated for pre-test and post-test for both of experimental and control class.

The level of score of the result students test interpreted as very good, good, enough, less, fail:<sup>2</sup>

**Table 5**  
**Level of the Score**

Interval	Predicate	Description
80-100	A	Very Good
66-79	B	Good
56-65	C	Enough
40-55	D	Low
0-39	E	Fail

The level of students' score can be seen from the table. If students' mean score 80-100 it means students get very good category. Meanwhile, if students' mean score 0-39 it means students fail. So, the level of students' mastery can be seen from the table after get the mean score.

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<sup>2</sup> Joko Widiyanto, *Evaluasi Pembelajaran (Sesuai Dengan Kurikulum 2013) Konsep, Prinsip Dan Prosedur*, ed. Asri Musandi, 1st ed. (Madiun-Jawa Timur: UNIPMA Press, 2018), [https://www.academia.edu/38465760/Buku\\_Evaluasi\\_Pembelajaran.pdf](https://www.academia.edu/38465760/Buku_Evaluasi_Pembelajaran.pdf) p. 234.

## E. Validity and Reliability

### 1. Validity

Validity is defined as the degree to which the researcher has measured what he has set out to measure.<sup>3</sup> In this research, the researcher uses item validity to get validity of instrumentation. Item validity is a part of the test as a totality to measure the test by items. The test consists of 50 tests before validity test, 25 for pre-test and 25 for post-test.

To know the validity of each question will be refer to list  $r$  product moment with  $r_t$  in 5% significant: 0,388 and 1% significant: 0.496.

So, if  $r_{\text{count}} > t_{\text{table}}$  the test is classified valid. To get the validity of the test, researcher used the formula of product moment:

$$rpb_i = \frac{Mp - Mt}{SDt} \sqrt{\frac{p}{q}}$$

Where:

$r_{pbi}$  : Coefficient Item validity

$Mp$  : Mean Score of total score

$Mt$  : Re-Average of total score that achieved success by member of test

$St$  : Standard deviation of total score

$P$  : Presentation of right answer of item tested validity

$q$  : Presentation of right wrong of item tested validity

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<sup>3</sup> Ranjit Kumar, *Research Methodology a Step By Step Guide For Beginners*, Third Edition (London: Sage, 2011), P, 167. <https://books.google.co.id>.

## 2. Reliability

Reliability refers to consistency throughout a series of measurements. An instrument of the research has to be reliable. To obtain the reliability of the data, the researcher uses KR- 20. The formula is:

$$R_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S_t^2 - \sum pq}{S_t^2} \right)$$

Where:

$R_{11}$  : Reliability of the instrument

$n$  : total of question

$S_t^2$  : varians total

$P$  : Proporsi subject who is correct answer (1)

$q$  : proporsi subject who is incorrect answer (0)

The test is reliable if  $r_{count} > r_{tabel}$  by using KR-20,  $r_{tabel} : 0.70$ . The criteria of test reliable as state above:

$R_{11} = 0.70$  high correlation (reliable)

$R_{11} > 0.70$  high correlation (reliable)

$R_{11} < 0.70$  low correlation (unreliable)

## F. Procedures of the Research

In data collection technique the researcher used test. Test is used to measure the competence of a person and also to achieve the objective. The data was collected by giving vocabulary test. The test was conducted twice.

### 1. Pre-test

The pre-test is given before starting research. The test is conducted to know the homogeneity the sample. It is to find out the mean score of the experimental and control class before giving treatment. Some steps that researcher did in pre-test were:



- a. The researcher prepared 20 items test for pre-test.
- b. The researcher distributed the test to students in experimental and control class.
- c. The researcher explained what the students have to do.
- d. Giving time to the students to answer the questions.
- e. The researcher collected the students' task.
- f. Checked the test result and made the score.
- g. Then, the researcher found the mean score both of experimental and control class.

## 2. Treatment

Both experimental and control class have the same material. But, the experimental class received treatment by learning vocabulary through anagram technique and the control class was taught by conventional technique or without treatment. The procedures of the treatment in experimental class were:

- a. For the beginning, the researcher opened the class with greeting. Asked students took pray. Then, started the class with short explanation.
- b. Introduced anagram game and divided students into group.
- c. Gave anagram list to each group.
- d. Asked students to arrange and formed the randomized words to a new correctly.
- e. Asked students to match the random word.

### 3. Post-test

Post-test is given after doing the treatment in experimental class. The type of test will be the same as the pre-test but different questions. Then, the score of the post-test will be compared with the pre-test before. The researcher did some steps in post-test, those were:

- a. The researcher prepared 20 items test for post-test.
- b. The researcher distributed the test to students in experimental and control class.
- c. The researcher explained what the students have to do.
- d. Giving time to the students to answer the questions.
- e. The researcher collected the students' task.
- f. Checked the test result and made the score.
- g. Then, the researcher found the mean score both of experimental and control class for post-test.

## **G. Technique of Analysing the Data**

The technique of analysis the data as follows:

### 1. Requirement Test

#### a. Mean score

To know the mean score, the researcher used:

$$M_x = \frac{\sum FX}{N}$$

Where:

$M_x$  : mean score

$\sum fx$  : total score

$N$  : number of class

b. Normality test by using *Chi-Quadrate*, the formula:

$$x^2 = \sum \left( \frac{f_0 - f_h}{f_h} \right)$$

Where:

$x^2$  = Chi-Quadrate

$f_0$  = frequency is gotten from the sample or result of observation (questioner)

$f_h$  = frequency is gotten from the sample as image from frequency is hoped from the population

c. Homogeneity test

$$F = \frac{\text{The biggest variant}}{\text{The smallest variant}}$$

Where:

Hypothesis is accepted if  $F_{(\text{count})} \leq F_{(\text{table})}$

Hypothesis is not accepted if  $F_{(\text{count})} \geq F_{(\text{table})}$

## 2. Hypothesis Test

Hypothesis is the provisional result of the research, the researcher used

T-test formula to analyse the data. The formula is:

$$Tt = \frac{X_1 - X_2}{\sqrt{\left( \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \right) \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where:

$t$  = the value which the statistical significance

$\bar{x}_1$  = the average score of the experimental class

$\bar{x}_2$  = the average score of the control class

$s_1^2$  = deviation of the experimental class

$s_2^2$  = deviation of control class

$n_1$  = number of experimental class

$n_2$  = number of control class

## CHAPTER IV

### RESEARCH FINDINGS AND DISCUSSION

This chapter aims to analyse the data, the data was collected from the test given to the sample. The sample of this research was VII-2 as experimental class and VII-3 as control class. The test was pre-test and post-test. Pre-test was given before did the treatment and post-test was done after conducted the treatment. To find out the effect of anagram game on vocabulary mastery at grade VII MTs N 2 Padangsidempuan the researcher calculated the data by using quantitative analysis. The researcher used t-test formula to test the hypothesis. Next, the researcher described the data as follows:

#### A. The Description of Data

##### 1. Description of Data before Using Anagram Game

###### a. Score Pre Test of Experimental Class

The researcher calculated the result that gotten by the students in answering multiple choice test in experimental class. The score pre-test experimental class could be seen in the following table:

**Table 6**  
**The score of Experimental Class in Pre-Test**

Total score	1890
Highest score	75
Lowest score	20
Mean	51.72
Median	54.42
Modus	81.15
Range	55
Interval	9
Standard Deviation	14.31
Variant	182.82

Based on the above table, the total score of experimental class in pre-test was 1890, mean score was 51.72, standard deviation was 14.31, variant was 182.82, median was 54.42, range was 55, modus was 81.15, and interval was 9. The highest score was 75, and the lowest score was 20.

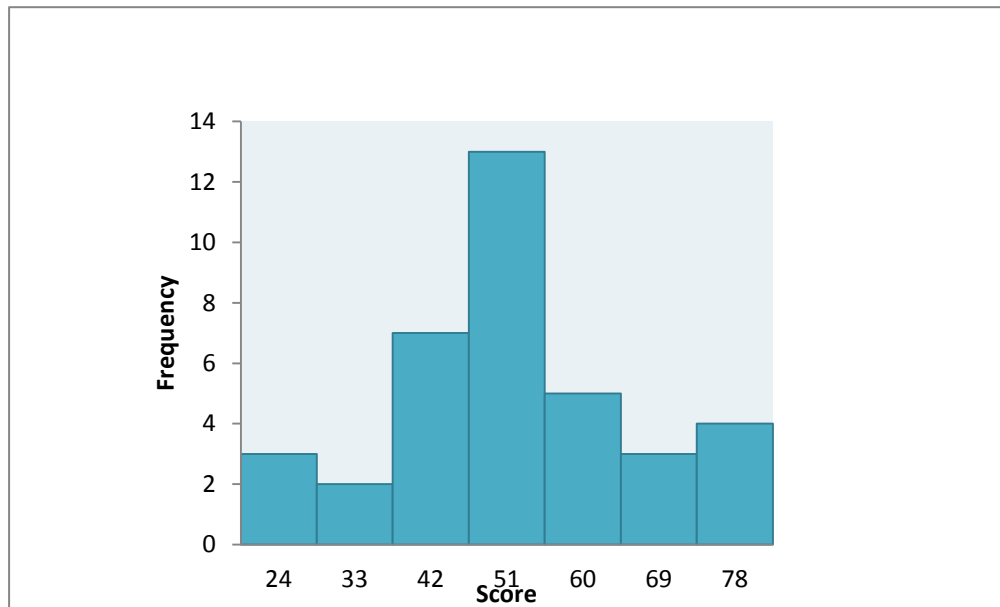
Then, the computed of the frequency distribution of the students' score of experiment class could be applied into the table frequency distribution as follow:

**Table 7**  
**Frequency Distribution of Students' Score**

No	Interval	Mid-Point	Frequency	Percentages
1	20 – 28	24	3	8.10 %
2	29 – 37	33	2	5.40 %
3	38 – 46	42	7	18.91%
<b>4</b>	<b>47 – 55</b>	<b>51</b>	<b>13</b>	<b>35.13 %</b>
5	56 – 64	60	5	13.51%
6	65 – 73	69	3	8.10%
7	74 – 82	78	4	10.81%
	<i>i</i> = 9		37	100%

From the above table, the students' score in class interval between 20 – 28 was 3 students (8.10%), class interval between 29 – 37 (5.40%) was 2 students, class interval between 38 – 46 in 7 students was (18.91%), class interval between 47 – 55 (35.13%) was 13 students, interval class between 56 – 64 (13.51%) was 5 students, class interval between 65 – 73 (8.10%) was 3 students, and class interval between 74 – 82 (10.81%) was 4 students.

In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:



**Figure 2: Description Data Pre Test of Experimental Class**

From the above histogram, the students who got score 24 was 3 students, the students' score 33 was 2 students, who got score 42 was 7 students, the students' score 51 was 13 students, the students who got score 60 was 5 students, the students' score 69 was 3 students, and the last the students who got score 78 was 4 students.

#### **b. Score Pre Test of Control Class**

The researcher calculated the result that had been gotten by the students in answering the question (test) pre-test in control class. The score of pre-test control class can be seen in the following table:

**Table 8**  
**The Score of Control Class in Pre-Test**

Total score	1625
Highest score	75
Lowest score	20
Mean	47.40
Median	59
Modus	49.77
Range	55
Interval	9
Standard Deviation	17.73
Variant	296.42

Based on the above table, the total score of experimental class in pre-test was 1625, mean score was 47.40, standard deviation was 17.73, variant was 296.42, median was 59, range was 55, modus was 49.77, and interval was 9. The highest score was 75, and the lowest score was 20.

Then, the computed of the frequency distribution of the students' score of experiment class could be applied into the table frequency distribution as follow:

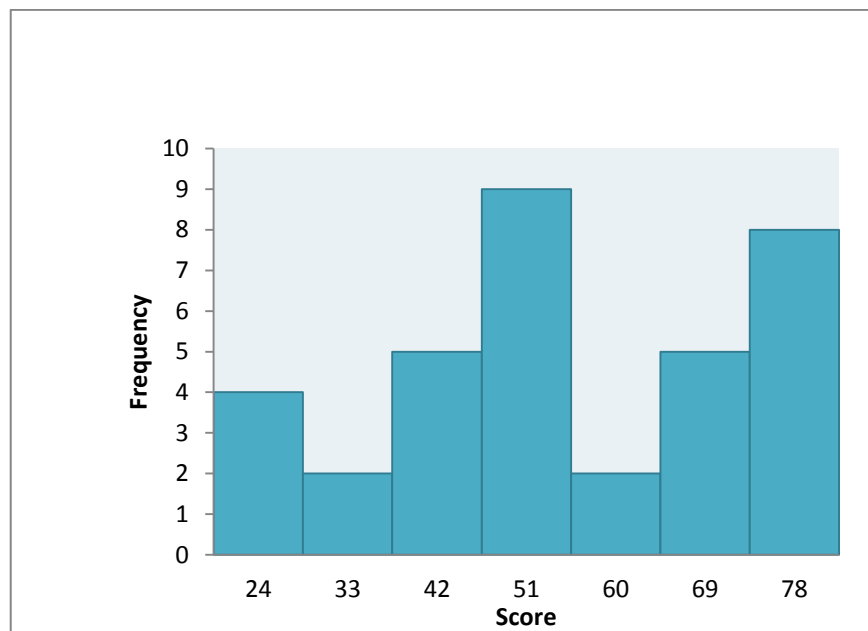
**Table 9**  
**Frequency Distribution of Students' Score**

No	Interval	Mid-Point	Frequency	Percentages
1	20 – 28	24	4	11.42 %
2	29 – 37	33	2	5.71 %
3	38 – 46	42	5	14.28 %
4	47 – 55	<b>51</b>	<b>9</b>	<b>25.71 %</b>
5	56 – 64	60	2	5.71 %
6	65 – 73	69	5	14.28 %
7	74 – 82	78	8	22.85 %
	<i>i</i> = 9		35	100%

From the above table, the students' score in class interval between 20 – 28 was 4 students (11.42%), class interval between 29 – 37

(5.71%) was 2 students, class interval between 38 – 46 (14.28%) was 5 students, class interval between 47 – 55 (25.71%) was 9 students, interval class between 56 – 64 (5.71%) was 2 students, class interval between 65 – 73 (14.28%) was 5 students, and class interval between 74–82 (22.85%) was 8 students.

In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:



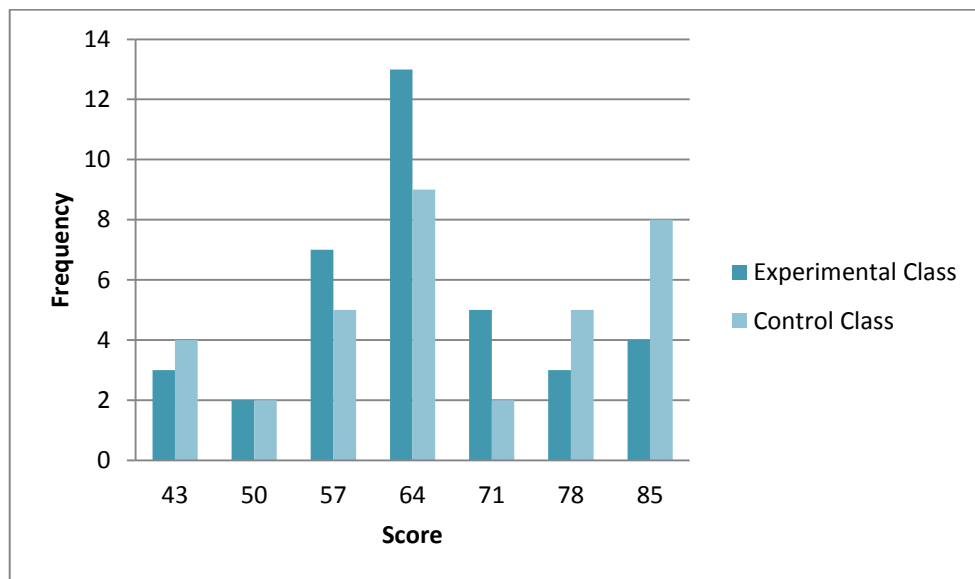
**Figure 3: Description Data Pre Test of Control Class**

From the above histogram, the students who got score 24 was 4 students, the students' score 33 was 2 students, who got score 42 was 5 students, the students' score 51 was 9 students, the students who got score 60 was 2 students, the students' score 69 was 5 students, and the last the students who got score 78 was 8 students.



### c. The Comparison between Data Pre-Test of Experimental Class and Control Class

Based on above histogram, researcher compared between description data pre-test of experimental class and description data of control class on the following figure:



**Figure 4: Description Data Pre-Test of Experimental Class and Control Class**

From the histogram above, the students' scores of experimental class was same with the students' scores of control class. It is categorize in low category.

## 2. Description of Data after Using Anagram Game

### a. Score Post Test of Experimental Class

In post-test of experimental class, the researcher calculated the result that had been gotten by the students in answering the test after the researcher did the treatment by using Anagram Game Technique. The score of post-test experimental class can be seen in the following table:

**Table 10**  
**The score of Experimental Class in Post-Test**

Total score	2645
Highest score	95
Lowest score	50
Mean	62.09
Median	72.09
Modus	81.15
Range	45
Interval	7
Standard Deviation	11.90
Variant	150.64

Based on the above table, the total score of experimental class in post-test was 2645, mean score was 62.09, standard deviation was 11.90, variant was 150.64, median was 72.09, range was 45, modus was 81.15, and interval was 7. The highest score was 95, and the lowest score was 50.

The computed of the frequency distribution of the students' score of experiment class could be applied into the table frequency distribution as follow:

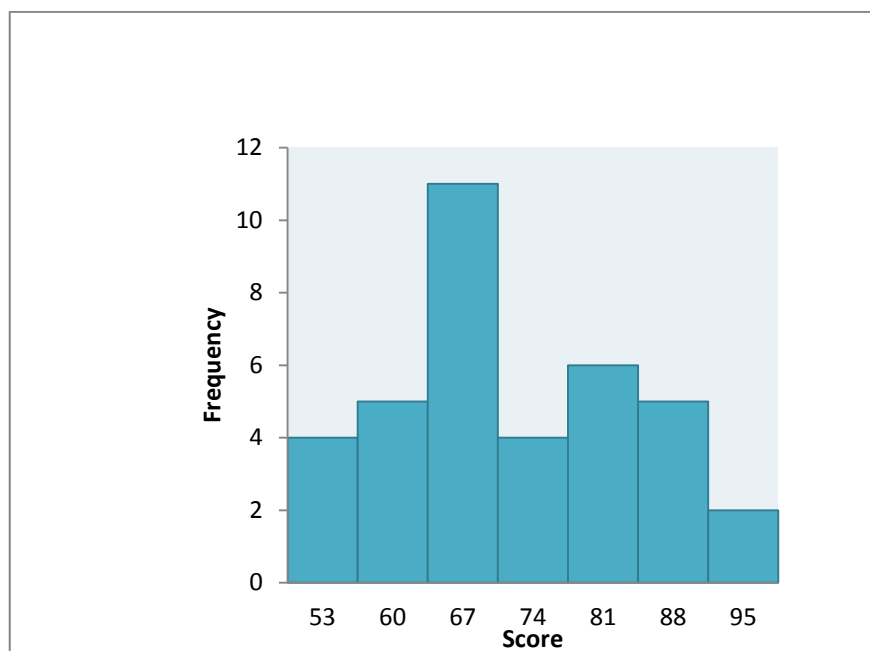
**Table 11**  
**Frequency Distribution of Students' Score**

No	Interval	Mid-Point	Frequency	Percentages
1	50 – 56	53	4	10.81 %
2	57 – 63	60	5	13.51 %
3	<b>64 – 70</b>	<b>67</b>	<b>11</b>	<b>29.72 %</b>
4	71 – 77	74	4	10.81 %
5	78 – 84	81	6	16.21 %
6	85 – 91	88	5	13.51 %
7	92 – 98	95	2	5.40 %
	<i>i</i> = 7		37	100 %

From the above table, the students' score in class interval between 50 – 56 was 4 students (10.81%), class interval between 57 – 63

(13.51%) was 5 students, class interval between 64 – 70 (29.72%) was 11 students, class interval between 71 – 77 (10.81%) was 4 students, interval class between 78 – 84 (16.21%) was 6 students, class interval between 85 – 91 (13.51%) was 5 students, and class interval between 92 – 98 (5.40%) was 2 students.

In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:



**Figure 5: Description Data Post Test of Experimental Class**

From the above histogram, the students who got score 53 was 4 students, the students who got 60 was 5 students, who got score 67 was 11 students, the students' score 74 was 4 students, the students who got score 81 was 6 students, the students' score 88 was 5 students, and the last the students who got score 95 was 2 students.

### b. Score Post Test of Control Class

The calculation result that had been gotten by the students in answering the question (test) in post-test can be seen as following table below:

**Table 12**  
**The Score of Control Class in Post-Test**

Total score	2290
Highest score	95
Lowest score	50
Mean	53.84
Median	63.15
Modus	59.3
Range	45
Interval	7
Standard Deviation	19.95
Variation	168.92

Based on the above table, the total score of control class in post-test was 2290, mean score was 53.84, standard deviation was 19.95, variation was 168.92, median was 63.15, range was 45, modus was 59.3, and interval was 7. The highest score was 95, and the lowest score was 50.

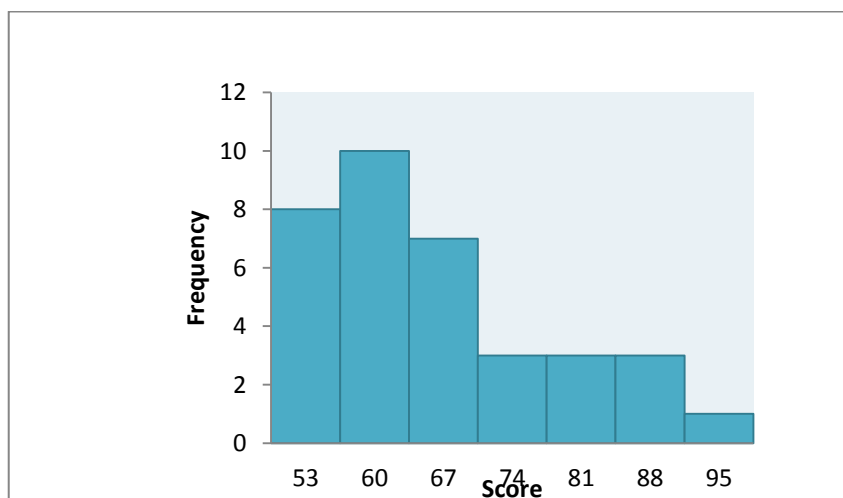
The computed of the frequency distribution of the students' score of experiment class could be applied into the table frequency distribution as follow:

**Table 13**  
**Frequency Distribution of Students' Score**

No	Interval	Mid-Point	Frequency	Percentages
1	50 – 56	53	8	22.85 %
2	<b>57 – 63</b>	<b>60</b>	<b>10</b>	<b>28.57 %</b>
3	64 – 70	67	7	20 %
4	71 – 77	74	3	8.57 %
5	78 – 84	81	3	8.57 %
6	85 – 91	88	3	8.57 %
7	92 – 98	95	1	2.85 %
	<i>i</i> = 7		35	100 %

From the above table, the students' score in class interval between 50 – 56 was 8 students (22.85%), class interval between 57 – 63 (28.57%) was 10 students, class interval between 64 – 70 (20%) was 7 students, class interval between 71 – 77 (8.57%) was 3 students, interval class between 78 – 84 (8.57%) was 3 students, class interval between 85 – 91 (8.57%) was 3 students, and class interval between 92 – 98 (2.85%) was 1 student.

In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:

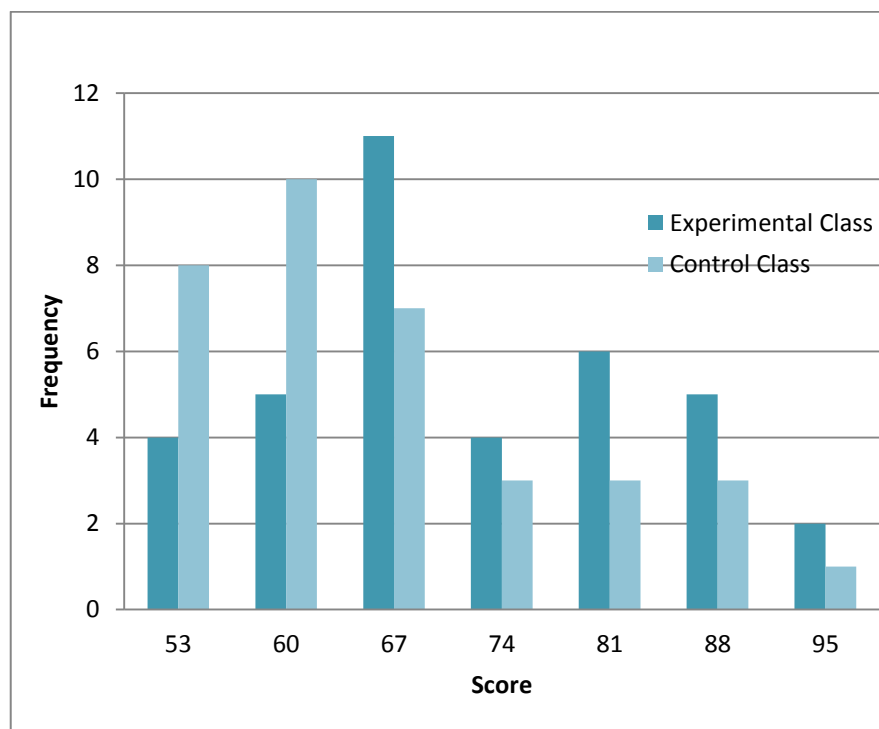


**Figure 6: Description Data Post Test of Control Class**

From the above histogram, the students who got score 53 was 8 students, the students who got 60 was 10 students, who got score 67 was 7 students, the students' score 74 was 3 students, the students who got score 81 was 3 students, the students' score 88 was 3 students, and the last the students who got score 95 was 1 student.

**d. The Comparison between Data Post-Test of Experimental Class and Control Class**

Based on above diagram, researcher compared between description data post-test of experimental class and description data of control class on the following figure:



**Figure 7: Description Data Pre-Test of Experimental Class and Control Class**

From the histogram above, the students' scores of experimental class was higher than the students' scores of control class.

## B. Technique of Data Analysis

### 1. Requirement Test

#### a. Normality and Homogeneity Pre-Test

##### 1) Normality of Experimental Class and Control Class in Pre-test

**Table 14**  
**Normality and Homogeneity in Pre-Test**

Class	Normality Test		Homogeneity Test	
	$X_{count}$	$X_{table}$	$f_{count}$	$f_{table}$
Experiment Class	7.33	12.592	1.62 < 2.42	
Control Class	9.34	12.592		

Based on the above table researcher calculation, the score of experimental class  $Lo = 7.33 < Lt = 12.592$  with  $n = 37$  and control class  $Lo = 9.34 < Lt = 12.592$  with  $n = 35$ , and real level  $\alpha 0.05$ . Cause  $Lo < Lt$  in the both class. So,  $H_a$  was accepted. It means that experimental class and control class were distributed normal. It can be seen in appendix 21 and 23.

##### 2) Homogeneity of Experimental and Control Class in Pre-Test

The coefficient of  $F_{count} = 1.62$  was compared with  $F_{table}$ . Where  $F_{table}$  was determined at real  $\alpha 0.05$ , and the different numerator  $dk-1$   $n_1 = 36$  and  $n_2 dk-1 = 34$ . So, by using the list of critical value at F distribution is got  $F_{0.05} = 2.42$ . It showed that  $F_{count} 1.62 < F_{table} 2.42$ . So, the researcher concluded that the variant from the data of the Students' vocabulary mastery at MTs Negeri 2 Padangsidempuan by experimental class and control

class was homogenous. The calculation can be seen on the appendix 24.

**b. Normality and Homogeneity Post-Test**

**1) Normality of Experimental Class and Control Class in Post-Test**

**Table 15**  
**Normality and Homogeneity in Post-Test**

Class	Normality Test		Homogeneity Test	
	$x_{\text{count}}$	$x_{\text{table}}$	$f_{\text{count}}$	$f_{\text{table}}$
Experimental Class	4.51	9.488	1.12 < 2.42	
Control Class	4.85	9.488		

Based on the table above researcher calculation, the score of experiment class  $Lo = 4.51 < Lt = 9.488$  with  $n = 37$  and Control Class  $Lo = 4.85 < Lt = 9.488$  with  $n = 35$ , and real level  $\alpha 0.05$ . Cause  $Lo < Lt$  in the both class. So,  $H_a$  was accepted. It means that experimental class and Control Class were distributed normal. It can be seen in appendix 21 and 22.

**2) Homogeneity of Experimental and Control Class in Post-test**

The coefficient of  $F_{\text{count}} = 1.12$  was compared with  $F_{\text{table}}$ . Where  $F_{\text{table}}$  was determined at real  $\alpha 0.05$ , in the different numerator  $dk-1$ ,  $n_1 = 36$  and  $n_2 dk-1 = 34$ . So, by using the list of critical value at F distribution is got  $F_{0.05} = 2.42$ . It showed that  $F_{\text{count}} 1.12 < F_{\text{table}} 2.42$ . So, the researcher concluded that the variant from the data of the Students vocabulary mastery at MTs Negeri 2



Padangsidimpuan by experimental class and Control Class were homogenous. The calculation can be seen on the appendix 24.

## 2. Hypothesis Test

After calculating the data of post-test, researcher found that post-test result of experimental class and Control Class is normal and homogenous. Based on the result, researcher used parametric test by using T-test to analyze the hypothesis. Hypothesis alternative ( $H_a$ ) of this research was “There was the significant effect of using Anagram Game to the students’ vocabulary mastery at grade VII MTs Negeri 2 Padangsidimpuan”. The calculation can be seen on the appendix 25 and 26.

**Table 16**  
**Result of T-test from the Both Averages**

Pre-test		Post-test	
$t_{count}$	$t_{table}$	$t_{count}$	$t_{table}$
1.40	1.66691	3.92	1.66691

$$H_a: \mu_1 \neq \mu_2$$

Where:

$H_a: \mu_1 \neq \mu_2$  “There was the significant effect of using Anagram Game to the students’ vocabulary mastery at grade VII MTs Negeri 2 Padangsidimpuan”.

Based on researcher calculation, researcher found that  $t_{count}$  3.92 while  $t_{table}$  1.66691 with opportunity  $(1 - \alpha) = 1 - 5\% = 95\%$  and  $dk = n_1 + n_2 - 2 = 37 + 35 - 2 = 70$ . Cause  $t_{count} > t_{table}$  ( $3.92 > 1.66691$ ), it means that hypothesis  $H_a$  was accepted and  $H_0$  was rejected. So, there was the

significant effect of using Anagram Game to the Students' Vocabulary mastery. In this case, the mean score of experimental class by using Anagram Game was 62.09 and mean score of Control Class was 53.84. The calculation can be seen on the appendix 25 and 26.

### C. Discussion

Based on the result of this research, the researcher found that anagram game has the significant effect to teach vocabulary. The researcher discussed the result of this research and compared with related findings. The First, the research by Fanti Maria Fifah<sup>1</sup> with research result anagram has the significant effect to the students' vocabulary mastery. The second, performed by Sartika Manurung<sup>2</sup> result of the research showed that anagram game can improve students' vocabulary mastery, than Siti Nurjanah<sup>3</sup> points the positive effect in using anagram game to students' vocabulary. Moreover, Mirwana Siska<sup>4</sup> also found the improvement of the students' vocabulary mastery by using anagram game in teaching vocabulary. The last is performed by Kartini<sup>5</sup> this study found that using anagram was effective in teaching

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<sup>1</sup> Fanti Maria Fifah, "The Effectiveness of Using Anagram Technique Toward Students' Vocabulary Achievement of The Eight Grade at MTs Wahid Hasyim Setinggil-Wonodadi," 2016, <http://repo.iain-tulungagung.ac.id/eprint/4337>.

<sup>2</sup> Sartika Manurung, "Improving Students' Vocabulary Achievement By Applying Anagram Plus Flashcards at the SMP Negeri 7 Pematangsiantar." 2014, (Universitas Negeri Medan).

<sup>3</sup> Siti Nurjanah, "The Effect of Anagram Technique on Students' Vocabulary (a Quasi-Experiment Research of the Eight Grade Students at MTs N 13 Jakarta in the Academic Year 2017/2018)," 2018, <http://repository.uinjkt.ac.id>. (Syarif Hidayatullah State Islamic University), <http://repository.uinjkt.ac.id>.

<sup>4</sup> Mirwana Siska, "Improving Students' Vocabulary Achievement by Applying Anagram Plus Flashcard in the First Grade of MTs Persatuan Amal Bakti (PAB) 1 Helvetia," 2017, [http://repository.uinsu.ac.id/2646/1/Mirwana Siska Ready upload.pdf](http://repository.uinsu.ac.id/2646/1/Mirwana%20Siska%20Ready%20upload.pdf).

<sup>5</sup> Kartini, "Teaching Vocabulary By Using Anagram to The Fifth Grade Students of SD Negeri 42 Palembang," no. August (2010), <http://repository.um-palembang.ac.id/id/eprint/1156/1/SKRIPSI963-1706225934.pdf>.

vocabulary. It can be known from the increased of students' achievement. As mention by Dale and O'Rourke in Richard stated one of the interesting ways for learning vocabulary is using word games exercises. One of the games is anagram game. Dale and O'Rourke in Richard summarized that students are able to enjoy game and exercise when using anagram.<sup>6</sup> In other hand, Ahdian<sup>7</sup> and Rahman<sup>8</sup> stated that anagram is type of word play that can give effect to students' vocabulary mastery also helps students more effective in learning.

From the result of the research that is previously stated. It was proved that the students who were taught by anagram game got better result. In summary, the researcher found all the related findings support this research. It can be concluded from the above explanation that anagram game is appropriate in teaching vocabulary to the students. It was found the significant effect of anagram game to the students' vocabulary mastery in this research. It can be seen from the mean score of experimental class was 62.09 and control class 53.84. It means the result and hypothesis testing showed anagram game had the effect, and the hypothesis alternative ( $H_a$ ) was accepted and hypothesis zero ( $H_0$ ) was rejected. It was indicated that score of experimental class was higher than control class ( $62.09 > 53.84$ ), and also indicated  $t_{count} > t_{table}$  ( $3.92 > 2.617$ ). Based on the above explanation, the

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<sup>6</sup> Richard Devara Candra Kumara, "The Use of Anagrams to Improve Students' Vocabulary Learning Strategy in XI IPA 1 Class , SMA Pangudi Luhur Sedayu," 2016, <https://repository.usd.ac.id>. p. 4.

<sup>7</sup> Ahdian Rosadi, "The Effectiveness of Anagram Technique in Teaching Vocabulary," *Voices of English Language Education Society* 1, no. 1 (2017): 41–50, <http://e-journal.hamzanwadi.ac.id/index.php/veles/article/view/392> p. 43.

<sup>8</sup> Muhammad Arrofi, "The Effectiveness of Anagram On Students' Vocabulary Size," December (2016) p. 130.

researcher concluded that hypothesis alternative was accepted and there was a significant effect of Anagram Game to the students' vocabulary mastery.

#### **D. Threats of the Research**

The researcher found some threats of the research as follows:

1. The students were not serious in answering the pre-test and post-test. Some of them still were cheating. It made the answer of the test was not pure because they did not do it by themselves.
2. The students were not focused when answering the test because noisy and annoyed each other.
3. Some of them were not interested in learning English and give the impact to their answer.
4. The students were noisy while the learning process. They were not concentrating in following the learning process. Some of them talked to their friends and some of them did something outside the teacher's rule. Clearly, it made them can't get the teacher's explanation well and gave the impact to the post-test answer.
5. The students were too enthusiastic in doing the game. It made them be not followed the rule of treatment and made them in hurried, the students feel confused to understand the rules that teacher was explained.
6. The instrument used may not reach all of the students' abilities.

## CHAPTER V

### CONCLUSION AND SUGGESTION

#### A. Conclusion

Based on the result of the research, the conclusions of this research are:

1. The students' vocabulary mastery at grade VII MTs Negeri 2 Padangsidimpuan before using anagram game was low. It can be seen from the students' mean score of pre-test was 54.42 in experimental class.
2. The students' vocabulary mastery at the grade VII MTs Negeri 2 Padangsidimpuan after using anagram game had higher score. It can be seen from the students' score of post-test, the higher score of post-test by using anagram game (experimental class) is 95 and the lowest score is 50 and the mean score rised became 62.09.
3. The result of the research showed that anagram game give good effect to students' vocabulary mastery. The researcher found that the result of T-test where  $t_{count}$  was higher than  $t_{table}$  ( $3.92 > 1.66691$ ). It means that  $H_a$  was accepted and  $H_0$  was rejected. In other words, there was significant effect of anagram game to students' vocabulary mastery at grade VII MTs N 2 Padangsidimpuan. It can be seen from mean score of experimental class in post test was 62.09, it was higher than control class ( $62.09 > 53.84$ ).

## **B. Suggestion**

After finishing this research, the researcher got much information in English teaching and learning process. Therefore, the researcher has suggestion to:

1. The head master of MTs Negeri 2 Padangsidimpuan to motivated the teacher, especially English teacher to teach as well as possible by using apporiate strategy for every skill like teaching vocabulary mastery by using Anagram Game.
2. The English teacher, the researcher suggests to use the appropriate technique to teach or explain English subject to the students so the students will not be bored in learning English, interested, can enjoy and increase their skill in learning English.
3. To students' of MTs Negeri 2 Padangsidimpuan, the researcher suggests when the teacher explain in front of you, you should concentrate, listen to your teacher, do what the teacher ask you to, and do not cheat with your friends. Also you can use any technique for learning that can make you more enjoyable.
4. Other researcher, the researcher hopes that the others researchers who want to conduct a research related to this research to find the others influence of these technique deeply.

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## **CURRICULUM VITAE**

### **A. Identity**

Name : Wardah Mutiah Nasution  
NIM : 15 203 00024  
Place and Birthday : Sibanggor Tonga, July 27<sup>th</sup>, 1997  
Gender : Female  
Religion : Islam  
Address : Sibanggor Tonga, Kec. Puncak Sorik Marapi,  
Kab. Mandailing Natal

### **B. Parent**

1. Father's name : Miswar Nasution
2. Mother's name : Mardiyah Rangkuti

### **C. Educational Background**

1. Elementary School : SD N No 146960 Sibanggor Tonga (2009)
2. Junior High School : SMP N 1 Puncak Sorik Marapi (2012)
3. Senior High School : SMA N 1 Panyabungan Selatan (2015)
4. College : IAIN Padangsidempuan (2019)

## Appendix 1

### Experiment Class

#### RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

Sekolah	: MTs N 2 Padangsidempuan
Mata Pelajaran	: Bahasa Inggris
Kelas	: VII - 2
Materi Pokok	: Noun (things in the classroom, things in the kitchen)
Tahun Pelajaran	: 2019/2020
Alokasi Waktu	: 2 x 40 menit

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#### A. Kompetensi Inti

KI 1: Menghargai dan menghayati ajaran agama yang dianutnya

KI 2: Menghargai dan menghayati perilaku jujur, disiplin, tanggung jawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan sosial dan alam dalam jangkauan pergaulan dan keberadaannya.

KI 3: Memahami pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.

KI 4: Mencoba, mengolah, dan menyaji dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.

#### B. Kompetensi Dasar

3.4 Mengidentifikasi fungsi sosial, struktur teks dan unsur kebahasaan teks interaksi transaksional lisan dan tulis yang melibatkan tindakan memberi dan meminta informasi terkait nama benda yang ada di ruangan kelas dan dapur yang terkait dengan kehidupan sehari-hari.

4.4 Menyusun teks interaksi transaksional lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan memberi dan meminta informasi terkait dengan nama-nama benda yang berada di ruangan kelas dan di dapur.

### C. Indikator Pencapaian Kompetensi (IPK)

3.4.1 Mengidentifikasi noun

3.4.2 Menemukan kosakata dalam bentuk noun

4.4.1 Mengidentifikasi dan menyusun kata acak dalam bentuk noun

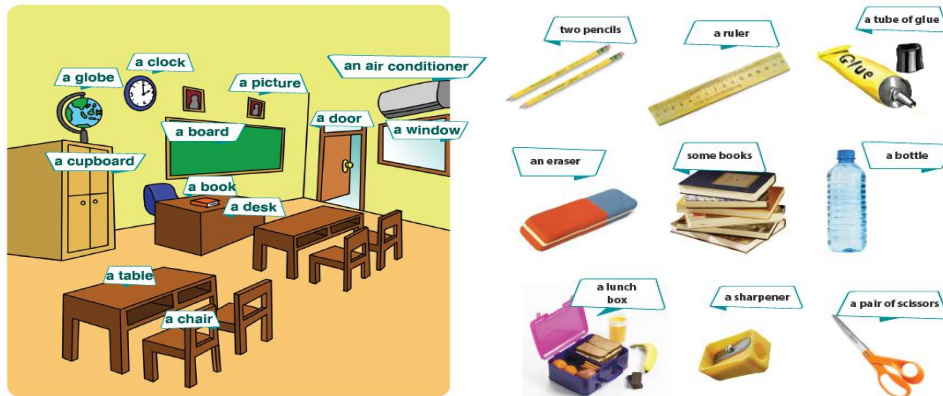
### D. Tujuan Pembelajaran

1. Siswa mampu mengidentifikasi nama-nama benda yang berada di dalam ruangan kelas.
2. Siswa mampu mengidentifikasi nama-nama benda yang ada di dapur.
3. Siswa mampu menyusun huruf acak yang berhubungan dengan nama benda yang ada di ruangan kelas dan di dapur dengan benar.

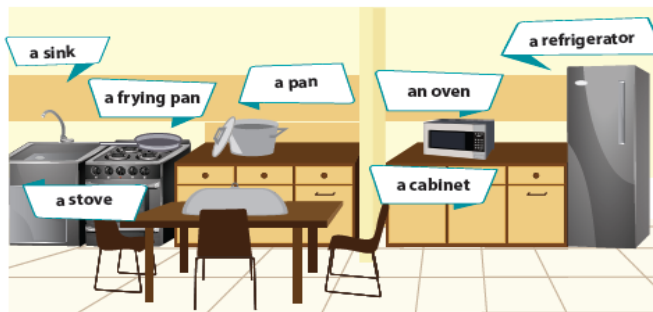
### E. Materi Pembelajaran

Things in the classroom	Things in the kitchen
Book : buku	Plate : piring
Chalk : kapur	Spoon : sendok
Chair : kursi	Fork : garpu
Clock : jam dinding	Bowl : mangkok
Marker : spidol	Pan : panik
Notebook : buku catatan	Cup : cangkir
Pencil case : kotak pencil	Kettle : ceret
Table : meja	Stove : kompor
Pencil : pensil	Frying pan : wajan
Lamp : lampu	Oven : oven
Pen : pulpen	Refrigerator : kulkas
Eraser : penghapus	Knife : pisau
Ruler : penggaris	Kitchen sink : tempat cuci
Scissors : gunting	Glass : gelas

Things in the classroom



### Things in the kitchen



### F. Teknik Pembelajaran

Teknik pembelajaran: Anagram Game Technique

### G. Media dan Sumber Belajar

#### 1. Media

- Anagram list table

#### 2. Sumber Belajar

- Buku bahasa inggris kelas VII: *When English Rings a Bell SMP/MTs Kelas VII.*
- Internet, [http://www. Belajar Bahasa Inggris Online.com.](http://www.BelajarBahasaInggrisOnline.com)
- Permendikbud Nomor 24 Tahun 2016

### H. Langkah-langkah Pembelajaran

<p><b>Pertemuan pertama</b> Pendahuluan (10')</p>	<ol style="list-style-type: none"> <li>1) Guru memasuki kelas dengan mengucapkan salam serta menyapa siswa dalam Bahasa Inggris.</li> <li>2) Guru memeriksa kehadiran siswa.</li> <li>3) Guru membuka pelajaran dengan mengajak siswa berdoa.</li> <li>4) Guru menjelaskan secara ringkas materi yang akan dipelajari.</li> </ol>
<p>Kegiatan Inti (60')</p>	<p><b>Mengamati</b> Dengan bimbingan guru siswa mengamati beberapa langkah langkah dalam permainan anagram game</p> <ol style="list-style-type: none"> <li>1) Guru membagi siswa ke dalam beberapa kelompok.</li> <li>2) Guru mengajak siswa bermain kata dengan anagram game dengan membagikan list of anagram kepada setiap kelompok.</li> <li>3) Setiap kelompok mendapatkan beberapa kata acak, terdiri dari 3 sampai 6 kata.</li> <li>4) Guru meminta siswa untuk menyusun dan membentuk huruf acak yang diberikan ke dalam kata baru dengan benar.</li> <li>5) Guru meminta siswa menyusun huruf acak disebelah kiri dengan susunan kata disebelah kanan.</li> </ol> <p><b>Menanya</b> Dengan bimbingan guru siswa menggali informasi dengan mengajukan pertanyaan mengenai hal-hal yang berhubungan dengan noun.</p> <p><b>Mengumpulkan Informasi</b> Dengan bimbingan guru siswa berlatih menggunakan huruf acak yang terkait dengan noun.</p>
	<p><b>Mengomunikasikan</b> Siswa mencari kosa kata tentang noun dengan menyusun huruf yang diberikan.</p>
<p>Kegiatan Penutup</p>	<ol style="list-style-type: none"> <li>1) Guru dan siswa melakukan refleksi pembelajaran.</li> <li>2) Membuat ringkasan secara bersamaan pada materi yang</li> </ol>



(10')	<p>telah disampaikan.</p> <p>3) Guru melaksanakan tindak lanjut dengan memberikan arahan kegiatan berikutnya.</p> <p>4) Melakukan do'a bersama diakhir pelajaran</p> <p>5) Guru menutup kegiatan pembelajaran</p>
<b>Pertemuan ke 2</b> Pedahuluan (10)	<p>1) Guru menyapa siswa dalam Bahasa Inggris</p> <p>2) Guru memeriksa kehadiran siswa</p> <p>3) Guru membuka pelajaran dengan mengajak siswa untuk berdoa</p>
Kegiatan inti (60)	<p>1) Guru mengulang kembali pelajaran sebelumnya</p> <p>2) Guru memberikan soal.</p> <p>3) Siswa menjawab soal yang diberikan</p>
Kegiatan Penutup (10)	<p>1) Guru mengumpulkan hasil kerja siswa</p> <p>2) Guru menutup pertemuan dengan hamdalah dan salam</p>

### I. Penilaian

1. Teknik : Merespon Pertanyaan Secara Tertulis
2. Bentuk : Pertanyaan Tertulis
3. Instrumen : Terlampir

### J. Pedoman Penilaian

1. Jumlah Skor Maksimal x 5 : 20
2. Nilai Maksimal : 100
3. Nilai Siswa :  $\frac{\text{Skor Perolehan}}{\text{Skor Maksimum}} \times 100$

Mengetahui,

Guru b.inggris

**Nila Suaidah Lubis, S. Pd**

Mahasiswa peneliti

**Wardah Mutiah Nasution**  
**NIM. 15 203 00024**

## Appendix 2

### Control Class

#### RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

Sekolah	: MTs N 2 Padangsidempuan
Mata Pelajaran	: Bahasa Inggris
Kelas	: VII - 3
Materi Pokok	: Noun (things in the classroom, things in the kitchen)
Tahun Pelajaran	: 2019/2020
Alokasi Waktu	: 2 x 40 menit

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#### **K. Kompetensi Inti**

KI 1: Menghargai dan menghayati ajaran agama yang dianutnya

KI 2: Menghargai dan menghayati perilaku jujur, disiplin, tanggung jawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan sosial dan alam dalam jangkauan pergaulan dan keberadaannya.

KI 3: Memahami pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.

KI 4: Mencoba, mengolah, dan menyaji dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.

#### **L. Kompetensi Dasar**

3.4 Mengidentifikasi fungsi sosial, struktur teks dan unsur kebahasaan teks interaksi transaksional lisan dan tulis yang melibatkan tindakan memberi dan meminta informasi terkait nama benda yang ada di ruangan kelas dan dapur yang terkait dengan kehidupan sehari-hari.

4.4 Menyusun teks interaksi transaksional lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan memberi dan meminta informasi terkait dengan nama-nama benda yang berada di ruangan kelas dan di dapur.

**M. Indikator Pencapaian Kompetensi (IPK)**

3.4.1 Mengidentifikasi noun

3.4.2 Menemukan kosakata dalam bentuk noun

4.4.1 Mengidentifikasi dan menyusun kata acak dalam bentuk noun

**N. Tujuan Pembelajaran**

4. Siswa mampu mengidentifikasi nama-nama benda yang berada di dalam ruangan kelas.

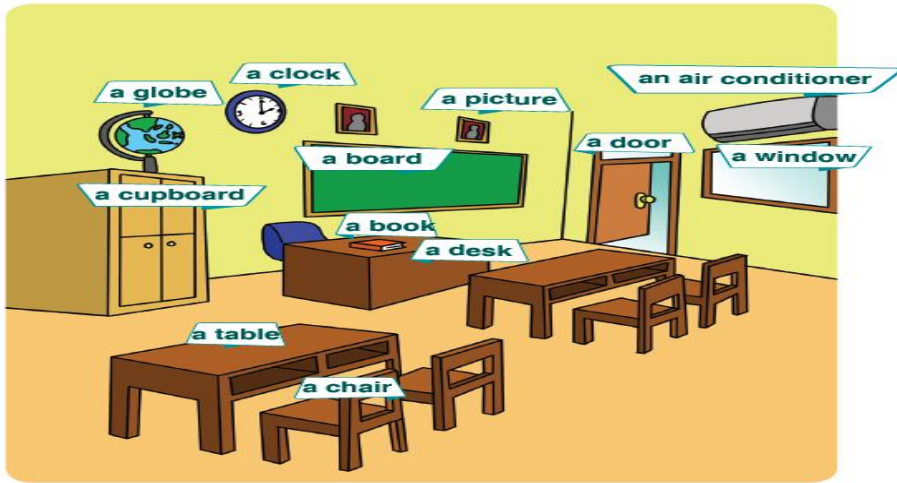
5. Siswa mampu mengidentifikasi nama-nama benda yang ada di dapur.

6. Siswa mampu menyusun huruf acak yang berhubungan dengan nama benda yang ada di ruangan kelas dan di dapur dengan benar.

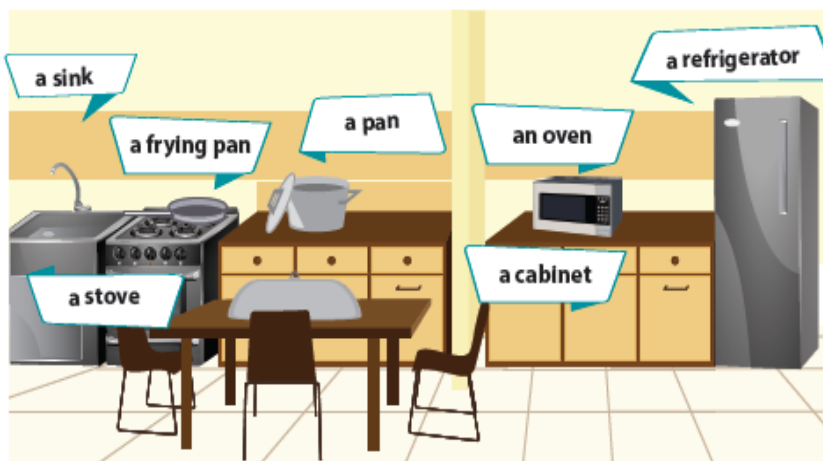
**O. Materi Pembelajaran**

Things in the classroom	Things in the kitchen
Book : buku	Plate : piring
Chalk : kapur	Spoon : sendok
Chair : kursi	Fork : garpu
Clock : jam dinding	Bowl : mangkok
Marker : spidol	Pan : panci
Notebook : buku catatan	Cup : cangkir
Pencil case : kotak pencil	Kettle : ceret
Table : meja	Stove : kompor
Pencil : pensil	Frying pan : wajan
Lamp : lampu	Oven : oven
Pen : pulpen	Refrigerator : kulkas
Eraser : penghapus	Knife : pisau
Ruler : penggaris	Kitchen sink : tempat cuci
Scissors : gunting	Glass : gelas

Things in the classroom



Things in the kitchen



**P. Teknik Pembelajaran**

Teknik pembelajaran: Conventional Strategy

## Q. Media dan Sumber Belajar

### 3. Media

- Papan tulis
- Spidol

### 4. Sumber Belajar

- Buku bahasa Inggris kelas VII: *When English Rings a Bell SMP/MTs Kelas VII* dan kamus Bahasa Inggris.
- Internet, [http://www. Belajar Bahasa Inggris Online.com](http://www.BelajarBahasaInggrisOnline.com).
- Permendikbud Nomor 24 Tahun 2016

## R. Langkah-langkah Pembelajaran

<b>Pertemuan pertama</b> Pendahuluan (10')	<ol style="list-style-type: none"><li>1) Guru memasuki kelas dengan mengucapkan salam serta menyapa siswa dalam Bahasa Inggris</li><li>2) Guru memeriksa kehadiran siswa</li><li>3) Guru membuka pelajaran dengan mengajak siswa untuk berdoa</li></ol>
<b>Kegiatan Inti</b> (60')	<p><b>Mengamati</b></p> <ol style="list-style-type: none"><li>1) Guru memberikan materi <i>noun (things in the classroom and things in the kitchen)</i> dengan bantuan object gambar dari buku pelajaran dan sekitar ruangan kelas secara ringkas.</li><li>2) Guru memberikan penjelasan mengenai materi tersebut.</li></ol> <p><b>Menanya</b></p> <ol style="list-style-type: none"><li>1) Dengan bimbingan guru siswa menggali informasi dengan mengajukan pertanyaan mengenai hal-hal yang berhubungan dengan noun</li></ol> <p><b>Mengumpulkan Informasi</b></p> <ol style="list-style-type: none"><li>1) Siswa mencari mengumpulkan kosa kata tentang noun (<i>things in the classroom and kitchen</i>).</li><li>2) Dengan bimbingan guru siswa berlatih menghafalkan</li></ol>

	vocabulary tersebut.
Kegiatan Penutup (10')	<p>3) Guru dan siswa melakukan refleksi pembelajaran.</p> <p>4) Membuat ringkasan secara bersamaan pada materi yang telah disampaikan.</p> <p>5) Guru melaksanakan tindak lanjut dengan memberikan arahan kegiatan berikutnya.</p> <p>6) Melakukan do'a bersama diakhir pelajaran.</p> <p>7) Guru menutup kegiatan pembelajaran.</p>
<b>Pertemuan ke 2</b> Pedahuluan (10')	<p>1) Guru menyapa siswa dalam Bahasa Inggris.</p> <p>2) Guru memeriksa kehadiran siswa.</p> <p>3) Guru membuka pelajaran dengan mengajak siswa berdo'a.</p>
Kegiatan inti (60')	<p>1) Guru mengulang kembali pelajaran sebelumnya dan melanjutkan ke materi selanjutnya.</p> <p>2) Guru memberikan soal.</p> <p>3) Siswa menjawab soal yang diberikan</p>
Kegiatan Penutup (10')	<p>1) Guru mengumpulkan hasil kerja siswa.</p> <p>2) Guru menutup pertemuan dengan hamdalah dan salam</p>

### S. Penilaian

1. Teknik : Merespon Pertanyaan Secara Tertulis
2. Bentuk : Pertanyaan Tertulis
3. Instrumen : Terlampir

### T. Pedoman Penilaian

4. Jumlah Skor Maksimal x 5 : 20
5. Nilai Maksimal : 100
6. Nilai Siswa :  $\frac{\text{Skor Perolehan}}{\text{Skor Maksimum}} \times 100$

Padangsidempuan,

2019

Mengetahui,

Guru b.inggris

**Nila Suaidah Lubis, S. Pd**

Mahasiswa peneliti

**Wardah Mutiah Nasution**  
**NIM. 15 203 00024**



## Appendix 3

### Instrument for Pre-Test

Answer the questions below by giving cross (X) in the correct answer! (jawablah pertanyaan dibawah ini dengan tanda (X) pada jawaban yang benar)!

1. What is the name of the room to study in school?
  - a. Bathroom
  - b. Classroom
  - c. Market
  - d. Kitchen
2. "Penggaris" in English is....
  - a. Ruler
  - b. Blackboard
  - c. Eraser
  - d. Pencil
3. These are things in the classroom, except...
  - a. Desk
  - b. Marker
  - c. Book
  - d. Plate
4. A room where food is kept, prepared and cooked and where the dishes are washed is....
  - a. Living room
  - b. Bedroom
  - c. Bathroom
  - d. Kitchen
5. Something that you can find in the classroom is a....
  - a. Whiteboard
  - b. Bed
  - c. Frying pan
  - d. Soap
6. What is "kompor" in English.....
  - a. Glass
  - b. Stove
  - c. Refrigerator
  - d. Fork
7. My father makes coffee in a....
  - a. Spoon
  - b. Plate
  - c. Bowl
  - d. Cup
8. I save my book and pencil case on....
  - a. Bag
  - b. Chair
  - c. Pencil case
  - d. School

9. My mother asks my sister to put the eggs, vegetables, fruit and meat in....
- |                 |          |
|-----------------|----------|
| a. Stove        | c. Mixer |
| b. Refrigerator | d. Oven  |
10. I need a ..... for writing
- |           |              |
|-----------|--------------|
| a. Eraser | c. Pen       |
| b. Ruler  | d. Sharpener |
11. It is usually on the roof. It can be found in your classroom. It is used to light the room. It is ....
- |                |                  |
|----------------|------------------|
| a. Pencil case | c. Pencil colour |
| b. Lamp        | d. Wall          |
12. We use ..... and ..... to eat.
- |                    |                    |
|--------------------|--------------------|
| a. Knife and spoon | c. Plate and spoon |
| b. Spoon and bowl  | d. Knife and fork  |
13. I mince the onion with....
- |          |          |
|----------|----------|
| a. Knife | c. Plate |
| b. Fork  | d. Cup   |
14. Arrange these letters to be a word! M-E-R-K-A-R (tools to write on whiteboard)
- |           |           |
|-----------|-----------|
| a. Karrem | c. Merkam |
| b. Marker | d. Merrak |
15. Transpose the letter to a correct word! T-H-I-C-K-E-N (place to cook)
- |            |            |
|------------|------------|
| a. Khentic | c. Chikent |
| b. Chentik | d. Kitchen |
16. My teacher needs..... to write on blackboard.
- |           |           |
|-----------|-----------|
| a. Marker | c. Pen    |
| b. Chalk  | d. Pencil |
17. The shape is usually square. You save your pen, pencil, eraser and other tools to write in it. It is ....
- |                   |                   |
|-------------------|-------------------|
| a. Pencil case    | c. Basket         |
| b. Correction pen | d. Correction pen |

18. My sister bakes cake on.....
- a. Mixer
  - b. Cup
  - c. Refrigerator
  - d. Oven
19. Something that you can find in the kitchen, except.....
- a. Rice cooker
  - b. Stove
  - c. Whiteboard
  - d. Dispenser
20. You need a ..... to fry an egg.
- a. Kettle
  - b. Fork
  - c. Frying pan
  - d. Pan
21. The thing that students used to erase their writing is....
- a. Book
  - b. Eraser
  - c. Pen
  - d. Map
22. What can we find in a kitchen?
- a. A ruler, a sharpener, and scissors
  - b. A knife, sofa, and carpet
  - c. A pan, stove, and car
  - d. A pan, an oven, and spoon
23. What can we find in the classroom?
- a. Chairs, tables, and marker
  - b. Book, pan, and plate
  - c. Car, book, and pencil
  - d. Spoon, fork, and plate
24. There are many things in the classroom. The students sit on these things.  
What is it....
- a. Tables
  - b. Whiteboard
  - c. Chairs
  - d. Desks
25. You can serve food on a....
- a. Spoon
  - b. Frying pan
  - c. Plate
  - d. Glass

## Appendix 4

### Instrument for Pre-Test

Answer the questions below by giving cross (X) in the correct answer! (jawablah pertanyaan dibawah ini dengan tanda (X) pada jawaban yang benar)!

26. What is the name of the room to study in school?
- |              |            |
|--------------|------------|
| c. Bathroom  | c. Market  |
| d. Classroom | d. Kitchen |
27. "Penggaris" in English is....
- |               |           |
|---------------|-----------|
| c. Ruler      | c. Eraser |
| d. Blackboard | d. Pencil |
28. These are things in the classroom, except...
- |           |          |
|-----------|----------|
| c. Desk   | c. Book  |
| d. Marker | d. Plate |
29. A room where food is kept, prepared and cooked and where the dishes are washed is....
- |                |             |
|----------------|-------------|
| c. Living room | c. Bathroom |
| d. Bedroom     | d. Kitchen  |
30. Something that you can find in the classroom is a....
- |               |               |
|---------------|---------------|
| c. Whiteboard | c. Frying pan |
| d. Bed        | d. Soap       |
31. What is "kompor" in English.....
- |          |                 |
|----------|-----------------|
| c. Glass | c. Refrigerator |
| d. Stove | d. Fork         |
32. My father makes coffee in a....
- |          |         |
|----------|---------|
| c. Spoon | c. Bowl |
| d. Plate | d. Cup  |
33. I save my book and pencil case on....
- |          |                |
|----------|----------------|
| c. Bag   | c. Pencil case |
| d. Chair | d. School      |

34. My mother asks my sister to put the eggs, vegetables, fruit and meat in....
- |                 |          |
|-----------------|----------|
| c. Stove        | c. Mixer |
| d. Refrigerator | d. Oven  |
35. I need a ..... for writing
- |           |              |
|-----------|--------------|
| c. Eraser | c. Pen       |
| d. Ruler  | d. Sharpener |
36. It is usually on the roof. It can be found in your classroom. It is used to light the room. It is ....
- |                |                  |
|----------------|------------------|
| c. Pencil case | c. Pencil colour |
| d. Lamp        | d. Wall          |
37. We use ..... and .... to eat.
- |                    |                    |
|--------------------|--------------------|
| c. Knife and spoon | c. Plate and spoon |
| d. Spoon and bowl  | d. Knife and fork  |
38. I mince the onion with....
- |          |          |
|----------|----------|
| c. Knife | c. Plate |
| d. Fork  | d. Cup   |
39. Arrange these letters to be a word! M-E-R-K-A-R (tools to write on whiteboard)
- |           |           |
|-----------|-----------|
| c. Karrem | c. Merkam |
| d. Marker | d. Merrak |
40. Transpose the letter to a correct word! T-H-I-C-K-E-N (place to cook)
- |            |            |
|------------|------------|
| c. Khentic | c. Chikent |
| d. Chentik | d. Kitchen |
41. What can we find in the classroom?
- |                               |                           |
|-------------------------------|---------------------------|
| c. Chairs, tables, and marker | c. Car, book, and pencil  |
| d. Book, pan, and plate       | d. Spoon, fork, and plate |
42. There are many things in the classroom. The students sit on these things. What is it....
- |               |           |
|---------------|-----------|
| c. Tables     | c. Chairs |
| d. Whiteboard | d. Desks  |

43. My sister bakes cake on.....
- |          |                 |
|----------|-----------------|
| c. Mixer | c. Refrigerator |
| d. Cup   | d. Oven         |
44. Something that you can find in the kitchen, except.....
- |                |               |
|----------------|---------------|
| c. Rice cooker | c. Whiteboard |
| d. Stove       | d. Dispenser  |
45. You need a ..... to fry an egg.
- |           |               |
|-----------|---------------|
| c. Kettle | c. Frying pan |
| d. Fork   | d. Pan        |

Padangsidempuan,

2019

Mengetahui,

Validator

Mahasiswa Peneliti

Nila Suaidah Lubis, S.Pd

Wardah Mutiah Nasution

## Appendix 5

### Instrument for Post Test

Answer the questions below by giving cross (X) in the correct answer! (jawablah pertanyaan dibawah ini dengan tanda (X) pada jawaban yang benar)!

1. Arrange these letters to be a correct word! G-A-B (thing that you use to save your school tools)
    - e. Bga
    - f. Gba
    - c. Abg
    - d. Bag
  2. It has many colours. It is similar to pencil. Students use this thing to make their drawing is colourful. What is it....
    - e. Pencil case
    - f. Colour pencil
    - c. Pen
    - d. Pencil sharpener
  3. Transpose the letter to a correct word! V-O-T-E-S (a kitchen tools to cooking food)
    - e. Stove
    - f. Vetos
    - c. Evots
    - d. Setov
  4. My mother adds (L-A-S-T) to her cooking. Transpose the letters in the bracket into correct word.
    - a. Salt
    - b. Tals
    - c. Slat
    - d. Last
  5. Arrange these letters into the correct word B-L-O-W (thing in the kitchen as place to serve stew food and other).
    - a. Blow
    - b. Bowl
    - c. Lowb
    - d. Bwol
  6. There are pencil, pen, eraser and sharpener in the.....
    - e. Pan
    - f. Stove
    - c. Pencil case
    - d. Plate
  7. Arrange to the correct word! P-A-L-M (it is used to light the room in the classroom)
    - a. Malp
    - b. Lapm
    - c. Lamp
    - d. Palm
  8. Arrange these letters to be a word! M-E-R-K-A-R (tools to write on whiteboard)
    - g. Karrem
    - h. Marker
    - c. Merkam
    - d. Merrak
- Arrange the letters to answer number 9 until 14 based on the clues!
9. P-E-L-A-T (to put food or rice)
    - a. Pelat
    - b. Palet
    - c. Telap
    - d. Plate
  10. R-E-L-U-R (to make straight line)

- a. Ruler  
b. Relur
- c. Lurer  
d. Rurel
11. C-L-I-P-E-N (instrument to write on the book)
- a. Clipen  
b. Pencil
- c. Cilpen  
d. Clepin
12. P-O-O-N-S (to eat with)
- a. Noops  
b. Poons
- c. Spoon  
d. Snoop
13. M-E-R-K-A-R-B-A-O-D-R (to write on a whiteboard)
- a. Boardmarker  
b. Merkarboard
- c. Markerboard  
d. Markerboadr
14. There are books on the (B-A-L-E-T)
- a. Balet  
b. Batle
- c. Tebal  
d. Table
15. The students are reading a.....
- e. Book  
f. Chair
- c. Eraser  
d. Ruler
16. We use this thing when we want to drink. You can find in the kitchen.  
What is it.....
- e. Kettle  
f. Bowl
- c. Plate  
d. Cup
17. Fatih always drinks a ..... of milk in the morning.
- e. Bowl  
f. Glass
- c. Spoon  
d. Dispenser
18. The students write their lesson in the....
- e. Bag  
f. Chair
- c. Note book  
d. Table
19. My mother always asks me to wash our dirty plates on.....
- a. Toilet  
b. Stove
- c. Kitchen sink  
d. Oven
20. My mother serves soup on a.....
- a. Cup  
b. Bottle
- c. Kettle  
d. Bowl
21. My mother cooks fried rice in a....
- e. Frying pan  
f. Plate
- c. Kettle  
d. Oven
22. The thing can be black or white. It is square. It can be found in the  
classroom. Teacher usually explains the lesson in this thing. What is it.....
- a. Chair  
b. Table
- c. Board  
d. Desk



23. Transpose the letter to a correct word! T-H-I-C-K-E-N (place to cook)
- a. Khentic
  - b. Chentik
  - c. Chikent
  - d. Kitchen
24. Transpose these letters into correct word! H-O-E-S (Students use on their foot to school)
- a. Shoe
  - b. Hose
  - c. Hoes
  - d. Sheo
25. Do not play with a .... In the kitchen. It can cut your finger. What is it....
- e. Spoon
  - f. Fork
  - c. Plate
  - d. Knife

## Appendix 6

### Instrument for Post Test

Answer the questions below by giving cross (X) in the correct answer! (jawablah pertanyaan dibawah ini dengan tanda (X) pada jawaban yang benar)!

26. Arrange these letters to be a correct word! G-A-B (thing that you use to save your school tools)
- |        |        |
|--------|--------|
| i. Bga | c. Abg |
| j. Gba | d. Bag |
27. Transpose the letter to a correct word! V-O-T-E-S (a kitchen tools to cooking food)
- |          |          |
|----------|----------|
| g. Stove | c. Evots |
| h. Vetos | d. Setov |
28. Arrange these letters to be a word! M-E-R-K-A-R (tools to write on whiteboard)
- |           |           |
|-----------|-----------|
| k. Karrem | c. Merkam |
| l. Marker | d. Merrak |
29. My mother adds (L-A-S-T) to her cooking. Transpose the letters in the bracket into correct word.
- |         |         |
|---------|---------|
| c. Salt | c. Slat |
| d. Tals | d. Last |
30. Arrange to the correct word! P-A-L-M (it is used to light the room in the classroom)
- |         |         |
|---------|---------|
| c. Malp | c. Lamp |
| d. Lapm | d. Palm |
31. Arrange these letters into the correct word B-L-O-W (thing in the kitchen as place to serve stew food and other).
- |         |         |
|---------|---------|
| c. Blow | c. Lowb |
| d. Bowl | d. Bwol |
32. There are pencil, pen, eraser and sharpener in the.....
- |        |                |
|--------|----------------|
| g. Pan | c. Pencil case |
|--------|----------------|

h. Stove

d. Plate

Arrange the letters to answer number 8 until 13 based on the clues!

33. R-E-L-U-R (to make straight line)

c. Ruler

c. Lurer

d. Relur

d. Rurel

34. P-E-L-A-T (to put food or rice)

c. Pelat

c. Telap

d. Palet

d. Plate

35. C-L-I-P-E-N (instrument to write on the book)

c. Clipen

c. Cilpen

d. Pencil

d. Clepin

36. M-E-R-K-A-R-B-A-O-D-R (to write on a whiteboard)

c. Boardmarker

c. Markerboard

d. Merkarboard

d. Markerboadr

37. P-O-O-N-S (to eat with)

c. Noops

c. Spoon

d. Poons

d. Snoop

38. There are books on the (B-A-L-E-T)

c. Balet

c. Tebal

d. Batle

d. Table

39. Fatih always drinks a ..... of milk in the morning.

g. Bowl

c. Spoon

h. Glass

d. Dispenser

40. The students are reading a.....

g. Book

c. Eraser

h. Chair

d. Ruler

41. Transpose these letters into correct word! H-O-E-S (Students use on their foot to school)

c. Shoe

c. Hoes

d. Hose

d. Sheo

42. My mother always asks me to wash our dirty plates on.....

- c. Toilet  
d. Stove
43. My mother serves soup on a.....  
c. Cup  
d. Bottle
44. My mother cooks fried rice in a....  
g. Frying pan  
h. Plate
45. Transpose the letter to a correct word! T-H-I-C-K-E-N (place to cook)  
c. Khentic  
d. Chentik
- c. Kitchen sink  
d. Oven
- c. Kettle  
d. Bowl
- c. Kettle  
d. Oven
- c. Chikent  
d. Kitchen

Padangsidempuan,

2019

Mengetahui,

Validator

Nila Suaidah Lubis, S.Pd

Mahasiswa Peneliti

Wardah Mutiah Nasution

## **Appendix 7**

### **Key Answer of Pre-Test**

1. B	11. B
2. A	12. C
3. D	13. A
4. D	14. B
5. A	15. D
6. B	16. A
7. D	17. C
8. A	18. D
9. B	19. C
10. C	20. C

### **Key Answer of Post Test**

1. D	11. A
2. A	12. C
3. D	13. D
4. A	14. B
5. C	15. A
6. B	16. A
7. C	17. C
8. A	18. D
9. D	19. A
10. B	20. D

Appendix 8

Validity of Pre Test

	No.	Item																									Xt	Xt^2
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Respondent	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	22	484	
	2	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	21	441	
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	24	576	
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	
	5	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	6	36	
	6	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	23	529	
	7	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	20	400	
	8	0	1	1	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	1	1	0	10	100	
	9	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	6	36	
	10	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	5	25	
	11	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	8	64	
	12	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	22	484	
	13	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	4	16	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
	15	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	21	441	
	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	24	576	
	17	1	0	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	10	100	
	18	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	22	484	
	19	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	0	1	0	1	0	1	1	1	14	196	
	20	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	1	1	1	1	0	18	324	
	21	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	5	25	
	22	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	17	289	
	23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	23	529	
	24	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	0	0	1	1	17	289	
	25	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	7	49	
	N=25	14	12	15	15	13	15	14	15	15	16	15	14	12	14	15	16	10	14	12	15	12	15	15	14	14	351	6495

p	0,6	0,5	0,6	0,6	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,5	0,6	0,6	0,6	0,4	0,6	0,5	0,6	0,5	0,6	0,6	0,6	0,6		
q	0,4	0,5	0,4	0,4	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,4	0,4	0,4	0,6	0,4	0,5	0,4	0,5	0,4	0,4	0,4	0,4		
r																												
tabel	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
hitung	0,46	0,46	0,83	0,9	0,44	0,47	0,93	0,9	0,44	0,79	0,9	0,93	0,51	0,93	0,9	0,13	0,37	0,93	0,48	0,9	0,36	0,37	0,47	0,93	0,33			

Appendix 9

Validity of Post Test

	No.	Item																									Xt	Xt^2
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Respondent	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	21	441	
	2	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	21	441	
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	24	576	
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	
	5	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	6	36	
	6	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	22	484	
	7	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	20	400	
	8	0	1	1	1	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1	11	121	
	9	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	6	36	
	10	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	6	36	
	11	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	9	81	
	12	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	21	441	
	13	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	5	25	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	4	
	15	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	20	400	
	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	625	
	17	1	0	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	10	100	
	18	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	22	484	
	19	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	0	1	0	1	1	1	1	1	15	225	
	20	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1	18	324	
	21	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	7	49	
	22	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	17	289	
	23	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	23	529	
	24	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	18	324	
	25	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	8	64	
	N=25	14	11	15	15	13	15	14	15	15	16	15	14	12	14	15	16	13	14	12	18	15	15	15	14	13	358	6495



p	0,6	0,4	0,6	0,6	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,5	0,6	0,6	0,6	0,5	0,6	0,5	0,7	0,6	0,6	0,6	0,6	0,5			
q	0,4	0,6	0,4	0,4	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,4	0,4	0,4	0,5	0,4	0,5	0,3	0,4	0,4	0,4	0,4	0,4	0,5		
r tabel	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4		
r hitung	0,46	0,38	0,83	0,48	0,45	0,49	0,93	0,89	0,43	0,78	0,89	0,93	0,49	0,93	0,89	0,13	0,42	0,93	0,45	0,34	0,5	0,38	0,07	0,93	0,4				

## Appendix 10

### Calculation of Pre-Test Validity

1. Mean score from score total ( $M_t$ )

$$M_t = \frac{\sum X_t}{N}$$

$$M_t = \frac{351}{25} = 14.04$$

2. Standard Deviation ( $SD_t$ )

$$SD_t = \sqrt{\frac{\sum X_t^2}{N} - \left(\frac{\sum X_t}{N}\right)^2}$$

$$SD_t = \sqrt{\frac{6495}{25} - \left(\frac{351}{25}\right)^2}$$

$$SD_t = \sqrt{259.8 - 14.04^2}$$

$$SD_t = \sqrt{259.8 - 197.1216}$$

$$SD_t = \sqrt{62,6784} = 8$$

3. Mean Score ( $M_p$ )

#### Item 1

$$M_{p1} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n1}$$

$$M_{p1} = \frac{21+24+6+23+20+8+22+21+24+10+18+5+17+23}{14}$$

$$M_{p1} = \frac{242}{14} = 17.28$$

#### Item 2

$$M_{p2} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n2}$$

$$M_{p2} = \frac{21+24+10+8+22+4+21+24+22+18+17+23}{12}$$

$$M_{p2} = \frac{214}{12} = 17.83$$

#### Item 3

$$M_{p3} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n3}$$

$$M_{p3} = \frac{22+21+24+23+20+10+22+21+24+22+18+17+23+17+7}{15}$$

$$M_{p3} = \frac{291}{15} = 19.4$$

**Item 4**

$$M_{p4} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n4}$$
$$M_{p4} = \frac{22+21+24+23+20+22+21+24+10+22+14+18+17+23+17}{15}$$
$$M_{p4} = \frac{298}{15} = 19.86$$

**Item 5**

$$M_{p5} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n5}$$
$$M_{p5} = \frac{22+24+23+20+6+8+22+24+10+22+5+23+17}{13}$$
$$M_{p5} = \frac{226}{13} = 17.38$$

**Item 6**

$$M_{p6} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n6}$$
$$M_{p6} = \frac{22+21+24+23+10+5+8+4+21+24+22+14+18+23+17}{15}$$
$$M_{p6} = \frac{256}{15} = 17.06$$

**Item 7**

$$M_{p7} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n7}$$
$$M_{p7} = \frac{22+21+24+23+20+22+21+24+22+14+18+17+23+17}{14}$$
$$M_{p7} = \frac{288}{14} = 20.57$$

**Item 8**

$$M_{p8} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n8}$$
$$M_{p8} = \frac{22+21+24+20+23+22+21+24+10+22+14+18+17+23+17}{15}$$
$$M_{p8} = \frac{298}{15} = 19.86$$

**Item 9**

$$M_{p9} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n9}$$
$$M_{p9} = \frac{22+24+6+23+20+10+6+5+8+22+21+24+22+23+17}{15}$$
$$M_{p9} = \frac{253}{15} = 16.86$$

**Item 10**

$$M_{p10} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n10}$$
$$M_{p10} = \frac{22+21+24+23+20+10+6+22+21+24+10+22+18+17+23+17}{16}$$
$$M_{p10} = \frac{300}{16} = 18.75$$

**Item 11**

$$M_{p11} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n15}$$
$$M_{p11} = \frac{22+21+24+23+20+22+21+24+10+22+14+18+17+23+17}{15}$$
$$M_{p11} = \frac{298}{15} = 19.86$$

**Item 12**

$$M_{p12} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n12}$$
$$M_{p12} = \frac{22+21+24+23+20+22+21+24+22+14+18+17+23+17}{14}$$
$$M_{p12} = \frac{288}{14} = 20.57$$

**Item 13**

$$M_{p13} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n13}$$
$$M_{p13} = \frac{22+24+6+23+20+10+6+22+24+22+17+23}{12}$$
$$M_{p13} = \frac{219}{12} = 18.25$$

**Item 14**

$$M_{p14} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n14}$$
$$M_{p14} = \frac{22+21+24+23+20+22+21+24+22+14+18+17+23+17}{14}$$
$$M_{p14} = \frac{288}{14} = 20.57$$

**Item 15**

$$M_{p15} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n15}$$
$$M_{p15} = \frac{22+21+24+23+20+22+21+24+10+22+14+18+17+23+17}{15}$$
$$M_{p15} = \frac{298}{15} = 19.86$$

**Item 16**

$$M_{p16} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n16}$$

$$M_{p16} = \frac{22+24+6+23+20+10+6+5+8+22+24+10+22+5+23+7}{16}$$

$$M_{p16} = \frac{237}{16} = 14.81$$

### Item 17

$$M_{p17} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n17}$$

$$M_{p17} = \frac{21+6+20+22+21+22+17+23+17+7}{10}$$

$$M_{p17} = \frac{176}{10} = 17.6$$

### Item 18

$$M_{p18} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n18}$$

$$M_{p18} = \frac{22+21+24+23+20+21+24+22+14+18+20+17+23+17}{14}$$

$$M_{p18} = \frac{286}{14} = 20.42$$

### Item 19

$$M_{p19} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n19}$$

$$M_{p19} = \frac{22+21+24+1+6+23+22+21+24+22+23+7}{12}$$

$$M_{p19} = \frac{216}{12} = 18$$

### Item 20

$$M_{p20} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n20}$$

$$M_{p20} = \frac{22+21+24+23+20+22+21+24+10+22+14+18+17+23+17}{15}$$

$$M_{p20} = \frac{298}{15} = 19.86$$

### Item 21

$$M_{p21} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n21}$$

$$M_{p21} = \frac{22+21+24+23+20+22+1+24+18+5+17+7}{12}$$

$$M_{p21} = \frac{204}{12} = 17$$

### Item 22

$$M_{p22} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n22}$$

$$M_{p22} = \frac{22+21+24+23+10+5+8+4+21+24+22+14+18+23+17}{15}$$

$$M_{p22} = \frac{246}{15} = 16.4$$

### Item 23

$$M_{p23} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n23}$$

$$M_{p23} = \frac{22+21+24+23+10+5+8+4+21+24+22+14+18+23+17}{15}$$

$$M_{p23} = \frac{256}{15} = 17.06$$

### Item 24

$$M_{p24} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n24}$$

$$M_{p24} = \frac{22+21+24+23+20+22+21+24+22+14+18+17+23+17}{14}$$

$$M_{p24} = \frac{288}{14} = 20.57$$

### Item 25

$$M_{p25} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n25}$$

$$M_{p25} = \frac{22+21+24+23+20+10+6+22+21+24+10+14+5+7}{14}$$

$$M_{p25} = \frac{229}{14} = 16.35$$

### Calculation of the formulation $r_{pb_i}$

$$r_{pbi} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

#### Item 1

$$r_{pbi} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{17.28-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pbi} = \frac{3.24}{8} \sqrt{1.5}$$

$$r_{pbi} = 0.405 \times 1.22 = 0.49$$

#### Item 2

$$r_{pb2} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb2} = \frac{17.83-14.04}{8} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb2} = \frac{3.79}{8} \sqrt{1.5}$$

$$r_{pb2} = 0.47 \times 1 = 0.47$$

**Item 3**

$$r_{pb3} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb3} = \frac{19.4-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb3} = \frac{5.36}{8} \sqrt{1.5}$$

$$r_{pb3} = 0.67 \times 1.22 = 0.81$$

**Item 4**

$$r_{pb4} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb4} = \frac{19.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb4} = \frac{5.82}{8} \sqrt{1.5}$$

$$r_{pb4} = 0.72 \times 1.22 = 0.87$$

**Item 5**

$$r_{pb5} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb5} = \frac{17.38-14.04}{8} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb5} = \frac{3.34}{8} \sqrt{1} \quad r_{pbi} = 0.42$$

**Item 6**

$$r_{pb6} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb6} = \frac{17.06-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb6} = \frac{3.02}{8} \sqrt{1.5}$$

$$r_{pb6} = 0.37 \times 1.22 = 0.45$$

**Item 7**

$$r_{pb7} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb7} = \frac{20.57-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb7} = \frac{6.53}{8} \sqrt{1.5}$$

$$r_{pb7} = 0.81 \times 1.22 = 0.98$$

**Item 8**

$$r_{pb8} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb8} = \frac{19.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pbi} = \frac{5.82}{8} \sqrt{1.5}$$

$$r_{pb8} = 0.72 \times 1.22 = 0.87$$

**Item 9**

$$r_{pb9} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb9} = \frac{16.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb9} = \frac{2.82}{8} \sqrt{1.5}$$

$$r_{pb9} = 0.35 \times 1.22 = 0.42$$

**Item 10**

$$r_{pb10} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb10} = \frac{18.75-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb10} = \frac{4.71}{8} \sqrt{1.5}$$

$$r_{pb10} = 0.58 \times 1.22 = 0.70$$

**Item 11**

$$r_{pb11} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb11} = \frac{19.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb11} = \frac{5.82}{8} \sqrt{1.5}$$

$$r_{pb11} = 0.72 \times 1.22 = 0.87$$

**Item 12**

$$r_{pb12} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb12} = \frac{20.57-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb12} = \frac{6.53}{8} \sqrt{1.5}$$



$$r_{pb12} = 0.81 \times 1.22 = 0.98$$

### Item 13

$$r_{pb13} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb13} = \frac{18.25-14.04}{8} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb13} = \frac{4.21}{8} \sqrt{1} =$$

$$r_{pb13} = 0.52 \times 1 = 0.52$$

### Item 14

$$r_{pb14} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb14} = \frac{20.57-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb14} = \frac{6.53}{8} \sqrt{1.5}$$

$$r_{pb14} = 0.81 \times 1.22 = 0.98$$

### Item 15

$$r_{pb15} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb15} = \frac{19.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb15} = \frac{5.82}{8} \sqrt{1.5}$$

$$r_{pb15} = 0.72 \times 1.22 = 0.87$$

### Item 16

$$r_{pb16} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb16} = \frac{14.81-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb16} = \frac{0.77}{8} \sqrt{1.5}$$

$$r_{pb16} = 0.09 \times 1.22 = 0.10$$

### Item 17

$$r_{pb17} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb17} = \frac{17.6-14.04}{8} \sqrt{\frac{0.4}{0.6}}$$

$$r_{pb17} = \frac{3.56}{8} \sqrt{0.6}$$

$$r_{pb17} = 0.44 \times 0.77 = 0.33$$

### Item 18

$$r_{pb18} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb18} = \frac{20.42-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb18} = \frac{6.38}{8} \sqrt{1.5}$$

$$r_{pb18} = 0.79 \times 1.22 = 0.96$$

### Item 19

$$r_{pb19} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb19} = \frac{18-14.04}{8} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb19} = \frac{3.96}{8} \sqrt{1}$$

$$r_{pb19} = 0.49 \times 1 = 0.49$$

### Item 20

$$r_{pb20} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb20} = \frac{19.86-14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb20} = \frac{5.82}{8} \sqrt{1.5}$$

$$r_{pb20} = 0.72 \times 1.22 = 0.87$$

### Item 21

$$r_{pb21} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb21} = \frac{17-14.04}{8} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb21} = \frac{2.96}{8} \sqrt{1}$$

$$r_{pb21} = 0.37 \times 1 = 0.37$$

**Item 22**

$$r_{pb22} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb22} = \frac{16.4 - 14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb22} = \frac{2.36}{8} \sqrt{1.5}$$

$$r_{pb22} = 0.29 \times 1.22 = 0.35$$

**Item 23**

$$r_{pb23} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb23} = \frac{17.06 - 14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb23} = \frac{3.02}{8} \sqrt{1.5}$$

$$r_{pb23} = 0.37 \times 1.22 = 0.45$$

**Item 24**

$$r_{pb24} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb24} = \frac{20.57 - 14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb24} = \frac{6.53}{8} \sqrt{1.5}$$

$$r_{pb24} = 0.81 \times 1.22 = 0.98$$

**Item 25**

$$r_{pb25} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb25} = \frac{16.35 - 14.04}{8} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb25} = \frac{2.31}{8} \sqrt{1.5}$$

$$r_{pb25} = 0.28 \times 1.22 = 0.34$$

## Appendix 11

### Calculation of Post Test Validity

4. Mean score from score total ( $M_t$ )

$$M_t = \frac{\sum X_t}{N}$$
$$M_t = \frac{358}{25} = 14.32$$

5. Standard Deviation ( $SD_t$ )

$$SD_t = \sqrt{\frac{\sum X_t^2}{N} - \left(\frac{\sum X_t}{N}\right)^2}$$
$$SD_t = \sqrt{\frac{6495}{25} - \left(\frac{358}{25}\right)^2}$$
$$SD_t = \sqrt{259.8 - 14.32^2}$$
$$SD_t = \sqrt{259.8 - 205.0624}$$
$$SD_t = \sqrt{54.7376} = 7.39$$

6. Mean Score ( $M_p$ )

#### Item 1

$$M_{p1} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n1}$$
$$M_{p1} = \frac{21+24+6+22+20+9+21+20+25+10+18+7+17+23}{14}$$
$$M_{p1} = \frac{243}{14} = 17.35$$

#### Item 2

$$M_{p2} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n2}$$
$$M_{p2} = \frac{21+24+11+9+21+5+20+25+22+18+17}{11}$$
$$M_{p2} = \frac{193}{11} = 17.54$$

#### Item 3

$$M_{p3} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n3}$$
$$M_{p3} = \frac{21+21+24+22+20+11+21+20+25+22+18+17+23+18+8}{15}$$
$$M_{p3} = \frac{291}{15} = 19.4$$

**Item 4**

$$M_{p4} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n4}$$
$$M_{p4} = \frac{21+21+24+22+20+11+25+10+22+15+18+17+23+18+8}{15}$$
$$M_{p4} = \frac{275}{15} = 18.33$$

**Item 5**

$$M_{p5} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n5}$$
$$M_{p5} = \frac{21+24+22+20+6+9+21+25+10+22+7+23+18}{13}$$
$$M_{p5} = \frac{228}{13} = 17.53$$

**Item 6**

$$M_{p6} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n6}$$
$$M_{p6} = \frac{21+21+24+22+11+6+9+5+20+25+22+15+18+23+18}{15}$$
$$M_{p6} = \frac{260}{15} = 17.33$$

**Item 7**

$$M_{p7} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n7}$$
$$M_{p7} = \frac{21+21+24+22+20+21+20+25+22+15+18+17+23+18}{14}$$
$$M_{p7} = \frac{287}{14} = 20.5$$

**Item 8**

$$M_{p8} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n8}$$
$$M_{p8} = \frac{21+21+24+22+20+21+20+25+10+22+15+18+17+23+18}{15}$$
$$M_{p8} = \frac{297}{15} = 19.8$$

**Item 9**

$$M_{p9} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n9}$$
$$M_{p9} = \frac{21+24+6+22+20+11+6+6+9+21+20+25+22+23+18}{15}$$
$$M_{p9} = \frac{254}{15} = 16.93$$

**Item 10**

$$M_{p10} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n10}$$
$$M_{p10} = \frac{21+21+24+22+20+11+6+21+20+25+10+22+18+17+23+18}{16}$$
$$M_{p10} = \frac{299}{16} = 18.68$$

**Item 11**

$$M_{p11} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n15}$$
$$M_{p11} = \frac{21+21+24+22+20+21+20+25+10+22+15+18+17+23+18}{15}$$
$$M_{p11} = \frac{297}{15} = 19.8$$

**Item 12**

$$M_{p12} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n12}$$
$$M_{p12} = \frac{21+21+24+22+20+21+20+25+22+15+18+17+23+18}{14}$$
$$M_{p12} = \frac{287}{14} = 20.5$$

**Item 13**

$$M_{p13} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n13}$$
$$M_{p13} = \frac{21+24+6+22+20+11+6+21+25+22+17+23}{12}$$
$$M_{p13} = \frac{218}{12} = 18.16$$

**Item 14**

$$M_{p14} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n14}$$
$$M_{p14} = \frac{21+21+24+22+20+21+20+25+22+15+18+17+23+18}{14}$$
$$M_{p14} = \frac{287}{14} = 20.5$$

**Item 15**

$$M_{p15} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n15}$$
$$M_{p15} = \frac{21+21+24+22+20+21+20+25+10+22+15+18+17+23+18}{15}$$
$$M_{p15} = \frac{297}{15} = 19.8$$

**Item 16**

$$M_{p16} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n16}$$
$$M_{p16} = \frac{21+24+6+22+20+11+6+6+9+21+25+10+22+7+23+8}{16}$$
$$M_{p16} = \frac{241}{16} = 15.06$$

**Item 17**

$$M_{p17} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n17}$$
$$M_{p17} = \frac{21+6+20+21+20+25+22+18+7+17+23+18+8}{13}$$
$$M_{p17} = \frac{226}{13} = 17.38$$

**Item 18**

$$M_{p18} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n18}$$
$$M_{p18} = \frac{21+21+24+22+20+21+20+25+22+15+18+17+23+18}{14}$$
$$M_{p18} = \frac{287}{14} = 20.5$$

**Item 19**

$$M_{p19} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n19}$$
$$M_{p19} = \frac{21+21+24+1+6+22+21+20+25+22+23+8}{12}$$
$$M_{p19} = \frac{214}{12} = 17.83$$

**Item 20**

$$M_{p20} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n20}$$
$$M_{p20} = \frac{21+21+24+22+20+6+9+21+5+2+20+25+10+15+7+17+23+18}{18}$$
$$M_{p20} = \frac{286}{18} = 15.88$$

**Item 21**

$$M_{p21} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n21}$$
$$M_{p21} = \frac{21+21+24+22+20+21+2+25+22+15+18+7+17+18+8}{15}$$
$$M_{p21} = \frac{261}{15} = 17.4$$

**Item 22**

$$M_{p22} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n22}$$

$$M_{p22} = \frac{21+21+24+22+11+6+9+5+20+25+22+15+18+23+8}{15}$$

$$M_{p22} = \frac{250}{15} = 16.66$$

**Item 23**

$$M_{p23} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n23}$$

$$M_{p23} = \frac{21+21+24+22+11+6+9+5+20+25+22+15+18+23+18}{15}$$

$$M_{p23} = \frac{260}{15} = 17.33$$

**Item 24**

$$M_{p24} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n24}$$

$$M_{p24} = \frac{21+21+24+22+20+21+20+25+22+15+18+17+23+18}{14}$$

$$M_{p24} = \frac{287}{14} = 20.5$$

**Item 25**

$$M_{p25} = \frac{\text{totalscoreofstudents'scorethattrueitemanswer}}{n25}$$

$$M_{p25} = \frac{21+24+20+11+6+21+20+25+10+15+7+23+1}{13}$$

$$M_{p25} = \frac{204}{13} = 15.69$$

**Calculation of the formulation**

$$r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

**Item 1**

$$r_{pb1} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb1} = \frac{17.35 - 14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb1} = \frac{3.03}{7.39} \sqrt{1.5}$$

$$r_{pb1} = 0.41 \times 1.22 = 0.50$$

**Item 2**

$$r_{pb2} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$



$$r_{pb2} = \frac{17.54-14.32}{7.39} \sqrt{\frac{0.4}{0.6}}$$

$$r_{pb2} = \frac{3.22}{7.39} \sqrt{0.66}$$

$$r_{pb2} = 0.43 \times 0.81 = 0.34$$

### Item 3

$$r_{pb3} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb3} = \frac{19.4-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb3} = \frac{5.08}{7.39} \sqrt{1.5}$$

$$r_{pb3} = 0.68 \times 1.22 = 0.82$$

### Item 4

$$r_{pb4} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb4} = \frac{18.33-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb4} = \frac{4.01}{7.39} \sqrt{1.5}$$

$$r_{pb4} = 0.54 \times 1.22 = 0.65$$

### Item 5

$$r_{pb5} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb5} = \frac{17.53-14.32}{7.39} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb5} = \frac{3.21}{7.39} \sqrt{1}$$

$$r_{pb5} = 0.43 \times 1 = 0.43$$

### Item 6

$$r_{pb6} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb6} = \frac{17.33-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb6} = \frac{3.01}{7.39} \sqrt{1.5}$$

$$r_{pb6} = 0.40 \times 1.22 = 0.48$$

### Item 7

$$r_{pb7} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb7} = \frac{20.5-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb7} = \frac{6.18}{7.39} \sqrt{1.5}$$

$$r_{pb7} = 0.83 \times 1.22 = 1.01$$

### Item 8

$$r_{pb8} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb8} = \frac{19.8-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb8} = \frac{5.48}{7.39} \sqrt{1.5}$$

$$r_{pb8} = 0.74 \times 1.22 = 0.90$$

### Item 9

$$r_{pb9} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb9} = \frac{16.93-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb9} = \frac{2.61}{7.39} \sqrt{1.5}$$

$$r_{pb9} = 0.35 \times 1.22 = 0.42$$

### Item 10

$$r_{pb10} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb10} = \frac{18.68-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb10} = \frac{4.36}{7.39} \sqrt{1.5}$$

$$r_{pb10} = 0.58 \times 1.22 = 0.70$$

### Item 11

$$r_{pb11} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb11} = \frac{19.8-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb11} = \frac{5.48}{7.39} \sqrt{1.5}$$

$$r_{pb11} = 0.74 \times 1.22 = 0.90$$

### Item 12

$$r_{pb12} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb12} = \frac{20.5-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb12} = \frac{6.18}{7.39} \sqrt{1.5}$$

$$r_{pb12} = 0.83 \times 1.22 = 1.01$$

**Item 13**

$$r_{pb13} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb13} = \frac{18.16-14.32}{7.39} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb13} = \frac{3.84}{7.39} \sqrt{1}$$

$$r_{pb13} = 0.51 \times 1 = 0.51$$

**Item 14**

$$r_{pb14} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb14} = \frac{20.5-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb14} = \frac{6.18}{7.39} \sqrt{1.5}$$

$$r_{pb14} = 0.83 \times 1.22 = 1.01$$

**Item 15**

$$r_{pb15} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb15} = \frac{19.8-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb15} = \frac{5.48}{7.39} \sqrt{1.5}$$

$$r_{pb15} = 0.74 \times 1.22 = 0.90$$

**Item 16**

$$r_{pb16} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb16} = \frac{15.06-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb16} = \frac{0.74}{7.39} \sqrt{1.5}$$

$$r_{pb16} = 0.10 \times 1.22 = 0.12$$

**Item 17**

$$r_{pb17} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb17} = \frac{17.38-14.32}{7.39} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb17} = \frac{3.06}{7.39} \sqrt{1}$$

$$r_{pb17} = 0.41 \times 1 = 0.41$$

**Item 18**

$$r_{pb18} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$
$$r_{pb18} = \frac{20.5-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$
$$r_{pb18} = \frac{6.18}{7.39} \sqrt{1.5}$$
$$r_{pb18} = 0.83 \times 1.22 = 1.01$$

**Item 19**

$$r_{pb19} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$
$$r_{pb19} = \frac{17.83-14.32}{7.39} \sqrt{\frac{0.5}{0.5}}$$
$$r_{pb19} = \frac{3.51}{7.39} \sqrt{1}$$
$$r_{pb19} = 0.47 \times 1 = 0.47$$

**Item 20**

$$r_{pb20} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$
$$r_{pb20} = \frac{15.88-14.32}{7.39} \sqrt{\frac{0.7}{0.3}}$$
$$r_{pb20} = \frac{1.56}{7.39} \sqrt{1.5}$$
$$r_{pb20} = 0.21 \times 1.22 = 0.25$$

**Item 21**

$$r_{pb21} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$
$$r_{pb21} = \frac{17.4-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$
$$r_{pb21} = \frac{3.08}{7.39} \sqrt{1.5}$$
$$r_{pb21} = 0.41 \times 1.22 = 0.50$$

**Item 22**

$$r_{pb22} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$
$$r_{pb22} = \frac{16.66-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$
$$r_{pb22} = \frac{2.34}{7.39} \sqrt{1.5}$$
$$r_{pb22} = 0.31 \times 1.22 = 0.37$$

**Item 23**

$$r_{pb23} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb23} = \frac{17.33-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb23} = \frac{3.01}{7.39} \sqrt{1.5}$$

$$r_{pb23} = 0.40 \times 1.22 = 0.48$$

**Item 24**

$$r_{pb24} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb24} = \frac{20.5-14.32}{7.39} \sqrt{\frac{0.6}{0.4}}$$

$$r_{pb24} = \frac{6.18}{7.39} \sqrt{1.5}$$

$$r_{pb24} = 0.83 \times 1.22 = 1.01$$

**Item 25**

$$r_{pb25} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pb25} = \frac{15.69-14.32}{7.39} \sqrt{\frac{0.5}{0.5}}$$

$$r_{pb25} = \frac{1.37}{7.39} \sqrt{1}$$

$$r_{pb25} = 0.18 \times 1.22 = 0.21$$

## Appendix 12

### Table Validity of Pre-Test

No	$M_p$	$M_t$	$SD_t$	P	Q	$r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$	$r_t$ on 5% significant	Interpretation
1	17.28	14.04	8	0.6	0.4	0.49	0.396	valid
2	17.83	14.04	8	0.5	0.5	0.47	0.396	valid
3	19.4	14.04	8	0.6	0.4	0.81	0.396	valid
4	19.86	14.04	8	0.6	0.4	0.87	0.396	valid
5	17.38	14.04	8	0.5	0.5	0.42	0.396	valid
6	17.06	14.04	8	0.6	0.4	0.45	0.396	valid
7	20.57	14.04	8	0.6	0.4	0.98	0.396	valid
8	19.86	14.04	8	0.6	0.4	0.87	0.396	valid
9	16.86	14.04	8	0.6	0.4	0.42	0.396	valid
10	18.75	14.04	8	0.6	0.4	0.70	0.396	valid
11	19.86	14.04	8	0.6	0.4	0.87	0.396	valid
12	20.57	14.04	8	0.6	0.4	0.98	0.396	valid
13	18.25	14.04	8	0.5	0.5	0.52	0.396	valid
14	20.57	14.04	8	0.6	0.4	0.98	0.396	valid
15	19.86	14.04	8	0.6	0.4	0.87	0.396	valid
16	14.81	14.04	8	0.6	0.4	0.10	0.396	invalid
17	17.6	14.04	8	0.4	0.6	0.33	0.396	invalid
18	20.42	14.04	8	0.6	0.4	0.96	0.396	valid
19	18	14.04	8	0.5	0.5	0.49	0.396	valid
20	19.86	14.04	8	0.6	0.4	0.87	0.396	valid
21	17	14.04	8	0.5	0.5	0.37	0.396	invalid
22	16.4	14.04	8	0.6	0.4	0.35	0.396	invalid
23	17.06	14.04	8	0.6	0.4	0.45	0.396	valid
24	20.57	14.04	8	0.6	0.4	0.98	0.396	valid
25	16.35	14.04	8	0.6	0.4	0.34	0.396	invalid

### Appendix 13

**Table Validity of Post Test**

No	M <sub>p</sub>	M <sub>t</sub>	SD <sub>t</sub>	P	Q	$r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$	r <sub>t</sub> on 5% significant	Interpretation
1	17.35	14.32	7.39	0.6	0.4	0.50	0.396	valid
2	17.54	14.32	7.39	0.4	0.6	0.34	0.396	invalid
3	19.4	14.32	7.39	0.6	0.4	0.82	0.396	valid
4	18.33	14.32	7.39	0.6	0.4	0.65	0.396	valid
5	17.53	14.32	7.39	0.5	0.5	0.43	0.396	valid
6	17.33	14.32	7.39	0.6	0.4	0.48	0.396	valid
7	20.5	14.32	7.39	0.6	0.4	1.01	0.396	valid
8	19.8	14.32	7.39	0.6	0.4	0.90	0.396	valid
9	16.93	14.32	7.39	0.6	0.4	0.42	0.396	valid
10	18.68	14.32	7.39	0.6	0.4	0.70	0.396	valid
11	19.8	14.32	7.39	0.6	0.4	0.90	0.396	valid
12	20.5	14.32	7.39	0.6	0.4	1.01	0.396	valid
13	18.16	14.32	7.39	0.5	0.5	0.51	0.396	valid
14	20.5	14.32	7.39	0.6	0.4	1.01	0.396	valid
15	19.8	14.32	7.39	0.6	0.4	0.90	0.396	valid
16	15.06	14.32	7.39	0.6	0.4	0.12	0.396	invalid
17	17.38	14.32	7.39	0.5	0.5	0.41	0.396	valid
18	20.5	14.32	7.39	0.6	0.4	1.01	0.396	valid
19	17.83	14.32	7.39	0.5	0.5	0.47	0.396	valid
20	15.88	14.32	7.39	0.7	0.3	0.25	0.396	invalid
21	17.4	14.32	7.39	0.6	0.4	0.50	0.396	valid
22	16.66	14.32	7.39	0.6	0.4	0.37	0.396	invalid
23	17.33	14.32	7.39	0.6	0.4	0.48	0.396	valid
24	20.5	14.32	7.39	0.6	0.4	1.01	0.396	valid
25	16.69	14.32	7.39	0.5	0.5	0.21	0.396	invalid

Appendix 14

Reliability of Pre Test

	No.	Item																									Xt	Xt <sup>2</sup>	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
Respondent	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	22	484	
	2	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	21	441	
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	24	576
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1
	5	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	6	36
	6	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	23	529
	7	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	20	400	
	8	0	1	1	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	1	10	100
	9	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	6	36
	10	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	5	25
	11	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	8	64
	12	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	22	484
	13	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4	16
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
	15	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	21	441
	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	24	576
	17	1	0	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	10	100
	18	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	22	484	
	19	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	0	1	0	1	0	1	1	1	1	1	14	196
	20	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	1	1	1	1	1	0	18	324	



	21	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	5	25
	22	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	0	17	289	
	23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	23	529	
	24	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	0	0	1	1	0	17	289		
	25	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	7	49		
	N=25	14	12	15	15	13	15	14	15	15	16	15	14	12	14	15	16	10	14	12	15	12	15	15	14	14	351	6495		
	p	0,6	0,5	0,6	0,6	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,5	0,6	0,6	0,6	0,4	0,6	0,5	0,6	0,5	0,6	0,6	0,6	0,6	$\sum X_t$	$\sum X_t^2$		
	q	0,4	0,5	0,4	0,4	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,4	0,4	0,4	0,6	0,4	0,5	0,4	0,5	0,4	0,4	0,4	0,4				
	pq	0,25	0,25	0,24	0,24	0,25	0,24	0,25	0,24	0,24	0,23	0,24	0,25	0,25	0,25	0,24	0,23	0,24	0,25	0,25	0,24	0,25	0,24	0,24	0,25	0,25	$\sum pq =$	6,0736		

Appendix 15

Reliability of Post Test

Respondent	No.	Item																									Xt	Xt <sup>2</sup>
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	21	441	
	2	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	21	441	
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	24	576	
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	
	5	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	6	36	
	6	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	22	484	
	7	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	20	400	
	8	0	1	1	1	0	1	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	1	1	0	11	121	
	9	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	6	36	
	10	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	6	36	
	11	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	9	81	
	12	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	21	441	
	13	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	5	25	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	4	
	15	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	20	400	
	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	625	
	17	1	0	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	1	10	100	
	18	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	22	484	
	19	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	0	0	1	0	1	1	1	1	1	15	225	
	20	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	1	0	18	324	
	21	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	7	49	

	22	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	0	17	289
	23	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	23	529
	24	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	18	324	
	25	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	8	64	
	N=2 5	14	11	15	15	13	15	14	15	15	16	15	14	12	14	15	16	13	14	12	18	15	15	15	14	13	358	649 5
	p	0,6	0,4	0,6	0,6	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,5	0,6	0,6	0,6	0,5	0,6	0,5	0,7	0,6	0,6	0,6	0,6	0,5		
	q	0,4	0,6	0,4	0,4	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,4	0,4	0,4	0,5	0,4	0,5	0,3	0,4	0,4	0,4	0,4	0,5		
	pq	0,2 5	0,2 5	0,2 4	0,2 4	0,2 5	0,2 4	0,2 5	0,2 4	0,2 4	0,2 3	0,2 4	0,2 5	0,2 5	0,2 5	0,2 4	0,2 3	0,2 5	0,2 5	0,2 5	0,2 0,2	0,2 4	0,2 4	0,2 4	0,2 5	0,2 5	$\Sigma pq$ =	6,04

## Appendix 16

### Calculation Reliability of Pre Test

To get reliability of the test, the researcher uses formula KR-20:

$$R_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S_t^2 - \sum pq}{S_t^2} \right)$$

$$N = 25$$

$$\sum X_t = 351$$

$$\sum X_t^2 = 6495$$

$$\sum pq = 6.0736$$

$$S_t^2 = \sum X_t^2 - \left( \frac{\sum X_t}{N} \right)^2$$

$$= 6495 - \left( \frac{351}{25} \right)^2 = 6495 - 14.04^2 = 6495 - 197.1216 = 6297.8784$$

$$S_t^2 = \frac{\sum X_t^2}{N} = \frac{6297.8784}{25}$$

$$S_t^2 = 251.91$$

$$R_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S_t^2 - \sum pq}{S_t^2} \right)$$

$$R_{11} = \left( \frac{25}{25-1} \right) \left( \frac{251.91 - 6.0736}{251.91} \right) = \left( \frac{25}{24} \right) \left( \frac{245.836}{251.91} \right)$$

$$= (1.04) (0.97)$$

$$R_{11} = 1.0088 \quad (r_{11} > 0.70 = \text{reliable})$$

## Appendix 17

### Calculation Reliability of Post Test

To get reliability of the test, the researcher uses formula KR-20:

$$R_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S_t^2 - \sum pq}{S_t^2} \right)$$

$$N = 25$$

$$\sum Xt = 358$$

$$\sum Xt^2 = 6495$$

$$\sum pq = 6.04$$

$$S_t^2 = \sum Xt^2 - \left( \frac{\sum xt}{N} \right)^2$$

$$= 6495 - \left( \frac{358}{25} \right)^2 = 6495 - 14.32^2 = 6495 - 205.0624 = 6289.9376$$

$$S_t^2 = \frac{\sum Xt^2}{N} = \frac{6289.9376}{25}$$

$$S_t^2 = 251.59$$

$$R_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S_t^2 - \sum pq}{S_t^2} \right)$$

$$R_{11} = \left( \frac{25}{25-1} \right) \left( \frac{251.59-6.04}{251.59} \right) = \left( \frac{25}{24} \right) \left( \frac{245.55}{251.59} \right)$$

$$= (1.04) (0.97)$$

$$R_{11} = 1.0088 \quad (r_{11} > 0.70 = \text{reliable})$$

## Appendix 18

### Score of Experimental Class and Control Class Pre Test

#### a. Score of Experimental Class Pre Test before using Anagram Game

No	Students' Name	Score Pre Test
1	Abdul Jalil Nasution	55
2	Ade Rezekina	40
3	Ahmad Rafi Nugraha	25
4	Akmal Muzakkir Batubara	35
5	Anggi Meylinda	50
6	Amiruddin	50
7	Ar-Rahman Srg	45
8	Aulia Rahman Haqiqi	70
9	Ayrin Syaodah	65
10	Bustamil Arifin Aritonang	65
11	Cinta Fitrah	60
12	Dian Rahma Dani	75
13	Ega Fasandi	60
14	Fadila Hayati	50
15	Ikhsan Abdul Manaf	45
16	Ikhwansyah Pane	75
17	Julia Amanda	40
18	Kaprian Anugrah Ridwan	35
19	Khoirunnisah Nababan	25
20	Line Array Denggan	75
21	Mediana Hrp	20
22	M. Farel Aditya	50
23	M. Sazali Raiz	50
24	M. Zaky Wahyudi	40
25	Nadia	40
26	Nayla Rizki	55
27	Neza Anatasya	55
28	Nuraini Salsabila Caniago	50
29	Nurul Annisa	60
30	Rahma Wulan Rambe	45
31	Rahmad Ramadan Assiddiq	45
32	Rizki Amanda	60
33	Rosiana Puspita Sari	60
34	Sapni Aminah	50
35	Sinta	55
36	Syarifah Ainun Hsb	40
37	Yogi Pratama	75
Jumlah		1890

**b. Score of Control Class Pre Test**

<b>No</b>	<b>Students' Name</b>	<b>Pre Test</b>
1	Abi Mayu	30
2	Ahmad Rifai	30
3	Ainun Mardia	50
4	Akmal Naufal	20
5	Anas Raihan	30
6	Anisa Dinda	50
7	Arby Syaputra	25
8	Armansyah	20
9	Azzura Zahairah Sianipar	65
10	Candra Hidayat	35
11	Darlina Yulianti	65
12	Dina Sari	55
13	Ervin Apriliyani	35
14	Fitri Amanda	70
15	Ikhsan Azwari Ziddan	30
16	Intan Permata Sari	75
17	Khoirudin	35
18	Kasih Fitri	40
19	M. ikhsan	50
20	Mirawati Setyo	45
21	Muhammad Aidil Sobiq	35
22	Mulki Reylansyah	40
23	Nadia Syafitri	65
24	Nazwa Aulia	70
25	Nirma Apra N	50
26	Nurfatin Sophya Annisa	75
27	Nurul Azizah	40
28	Rahman	25
29	Raina Sari	55
30	Roma Halomoan	50
31	Rubiana Hsb	55
32	Salsabila Lubis	60
33	Saskia Aini	50
34	Tukma Wanita	60
35	Wanda Hadi	40
<b>Jumlah</b>		<b>1625</b>

## Appendix 19

### Score of Experimental Class and Control Class Post Test

#### a. Score of Experimental Class Post Test after Using Anagram Game

No	Students' Name	Score Post Test
1	Abdul Jalil Nasution	75
2	Ade Rezekina	60
3	Ahmad Rafi Nugraha	50
4	Akmal Muzakkir Batubara	60
5	Anggi Meylinda	65
6	Amiruddin	65
7	Ar-Rahman Srg	70
8	Aulia Rahman Haqiqi	85
9	Ayrin Syaodah	85
10	Bustamil Arifin Aritonang	80
11	Cinta Fitrah	75
12	Dian Rahma Dani	95
13	Ega Fasandi	80
14	Fadila Hayati	70
15	Ikhsan Abdul Manaf	65
16	Ikhwansyah Pane	95
17	Julia Amanda	70
18	Kaprian Anugrah Ridwan	60
19	Khoirunnisah Nababan	75
20	Line Array Denggan	90
21	Median Hrp	50
22	M. Farel Aditya	80
23	M. Sazali Raiz	60
24	M. Zaky Wahyudi	65
25	Nadia	60
26	Nayla Rizki	75
27	Neza Anatasya	85
28	Nuraini Salsabila Caniago	65
29	Nurul Annisa	80
30	Rahma Wulan Rambe	70
31	Rahmad Ramadan Assiddiq	50
32	Rizki Amanda	80
33	Rosiana Puspita Sari	80
34	Sapni Aminah	70
35	Sinta	70
36	Syarifah Ainun Hsb	65
37	Yogi Pratama	90
Jumlah		2645



**b. Score of Control Class Post Test**

No	Students' Name	Score Post Test
1	Abi Mayu	50
2	Ahmad Rifai	50
3	Ainun Mardia	65
4	Akmal Naufal	50
5	Anas Raihan	50
6	Anisa Dinda	70
7	Arby Syaputra	50
8	Armansyah	50
9	Azzura Zahairah Sianipar	80
10	Candra Hidayat	60
11	Darlina Yulianti	80
12	Dina Sari	75
13	Ervin Apriliyani	60
14	Fitri Amanda	85
15	Ikhsan Azwari Ziddan	55
16	Intan Permata Sari	85
17	Khoirudin	60
18	Kasih Fitri	60
19	M. ikhsan	65
20	Mirawati Setyo	60
21	Muhammad Aidil Sobiq	60
22	Mulki Reylansyah	60
23	Nadia Syafitri	80
24	Nazwa Aulia	85
25	Nirma Apra N	65
26	Nurfatin Sophya Annisa	95
27	Nurul Azizah	60
28	Rahman	50
29	Raina Sari	70
30	Roma Halomoan	65
31	Rubiana Hsb	70
32	Salsabila Lubis	75
33	Saskia Aini	60
34	Tukma Wanita	75
35	Wanda Hadi	60
Jumlah		2290

## Appendix 20

### The Comparison Score of Pre Test and Post Test

#### a. Experimental Class

No	Students' Name	Pre Test	Post Test
1	Abdul Jalil Nasution	55	75
2	Ade Rezekina	40	60
3	Ahmad Rafi Nugraha	25	50
4	Akmal Muzakkir Batubara	35	60
5	Anggi Meylinda	50	65
6	Amiruddin	50	65
7	Ar-Rahman Srg	45	70
8	Aulia Rahman Haqiqi	70	85
9	Ayrin Syaodah	65	85
10	Bustamil Arifin Aritonang	65	80
11	Cinta Fitrah	60	75
12	Dian Rahma Dani	75	95
13	Ega Fasandi	60	80
14	Fadila Hayati	50	70
15	Ikhsan Abdul Manaf	45	65
16	Ikhwansyah Pane	75	95
17	Julia Amanda	40	70
18	Kaprian Anugrah Ridwan	35	60
19	Khoirunnisah Nababan	25	75
20	Line Array Denggan	75	90
21	Mediana Hrp	20	50
22	M. Farel Aditya	50	80
23	M. Sazali Raiz	50	60
24	M. Zaky Wahyudi	40	65
25	Nadia	40	60
26	Nayla Rizki	55	75
27	Neza Anatasya	55	85
28	Nuraini Salsabila Caniago	50	65
29	Nurul Annisa	60	80
30	Rahma Wulan Rambe	45	70
31	Rahmad Ramadan Assiddiq	45	50
32	Rizki Amanda	60	80
33	Rosiana Puspita Sari	60	80
34	Sapni Aminah	55	70
35	Sinta	50	70
36	Syarifah Ainun Hsb	40	65
37	Yogi Pratama	75	90
Jumlah		1890	2645

**b. Control Class**

No	Students' Name	Pre Test	Post Test
1	Abi Mayu	30	50
2	Ahmad Rifai	30	50
3	Ainun Mardia	50	65
4	Akmal Naufal	20	50
5	Anas Raihan	30	50
6	Anisa Dinda	50	70
7	Arby Syaputra	25	50
8	Armansyah	20	50
9	Azzura Zahairah Sianipar	65	80
10	Candra Hidayat	35	60
11	Darlina Yulianti	65	80
12	Dina Sari	55	75
13	Ervin Apriliyani	35	60
14	Fitri Amanda	70	85
15	Ikhsan Azwari Ziddan	30	55
16	Intan Permata Sari	75	85
17	Khoirudin	35	60
18	Kasih Fitri	40	60
19	M. ikhsan	50	65
20	Mirawati Setyo	45	60
21	Muhammad Aidil Sobiq	35	60
22	Mulki Reylansyah	40	60
23	Nadia Syafitri	65	80
24	Nazwa Aulia	70	85
25	Nirma Apra N	50	65
26	Nurfatin Sophya Annisa	75	95
27	Nurul Azizah	40	60
28	Rahman	25	50
29	Raina Sari	55	70
30	Roma Halomoan	50	65
31	Rubiana Hsb	55	70
32	Salsabila Lubis	60	75
33	Saskia Aini	50	60
34	Tukma Wanita	60	75
35	Wanda Hadi	40	60
Jumlah		1625	2290

## Appendix 21

### RESULT OF NORMALITY TEST IN PRE TEST RESULT OF THE NORMALITY TEST OF VII-2 IN PRE-TEST

1. The score of VII-2 class in pre test from low score to high score:

20	25	25	35	35	40	40	40	40	40	45	45
45	45	50	50	50	50	50	50	50	55	55	55
55	60	60	60	60	60	65	65	70	75	75	75
75											

2. High = 75

Low = 20

Range = High – Low

= 75 - 20

= 55

3. Total of Classes =  $1 + 3,3 \log (n)$   
 $= 1 + 3,3 \log (37)$   
 $= 1 + 3,3 (1.56)$   
 $= 1 + 5.04$   
 $= 6.04$   
 $= 6$

4. Length of Classes =  $\frac{\text{range}}{\text{total of class}} = \frac{55}{6} = 9.1 = 9$

5. Mean

Interval Class	F	X	x'	fx	x' <sup>2</sup>	fx' <sup>2</sup>
20 – 28	3	24	3	9	9	27
29 – 37	2	33	2	4	4	8
38 – 46	7	42	1	7	1	7
<b>47 – 55</b>	<b>13</b>	<b>51</b>	0	0	0	0
56 – 64	5	60	-1	-5	1	5
65 – 73	3	69	-2	-6	4	12
74 – 82	4	78	-3	-12	9	36
<i>i</i> = 9	37	-	-	-3	-	95

$$\begin{aligned}
 Mx &= M^1 + i \frac{\sum fx^1}{N} \\
 &= 51 + 9 \left( \frac{-3}{37} \right) \\
 &= 51.72
 \end{aligned}$$

$$\begin{aligned}
 SD_t &= i \sqrt{\frac{\sum fx'^2}{n} - \left( \frac{\sum fx'}{n} \right)^2} \\
 &= 9 \sqrt{\frac{95}{37} - \left( \frac{-3}{37} \right)^2} \\
 &= 9 \sqrt{2.56 - (0.0065)} \\
 &= 9 \sqrt{2.55} \\
 &= 9 \sqrt{2.723} \\
 &= 9 \times 1.59 = 14.31
 \end{aligned}$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of area	f <sub>h</sub>	f <sub>o</sub>	$\frac{(f_o - f_h)}{f_h}$	
74 - 75	75.5	1.76	0.4608					
				0.01	0.37	4	9.8	
65 - 73	73.5	1.62	0.4474					
				0.10	3.7	3	-0.18	
56 - 64	64.5	0.99	0.3389					
				0.19	7.03	5	-0.28	
47 - 55	55.5	0.36	0.1406					
				-0.25	-	13	-2.40	
38 - 46	46.5	-0.26	0.39743					
				0.21	9.25	7	-0.09	
29 - 37	37.5	-0.89	0.18673					
				0.12	7.7	2	-0.54	
20 - 28	28.5	-1.52	0.06426					
				0.04	4.4	3	1.02	
	19.5	-2.15	0.01578					
					1.48			
							X <sup>2</sup>	7.33

Based on the table above, the reseracher found that  $x^2_{\text{count}} = 7.33$  while  $x^2_{\text{table}} = 12.592$ , cause  $x^2_{\text{count}} < x^2_{\text{table}}$  ( $7.33 < 12.592$ ) with degree of freedom (dk) =  $9-3 = 6$  and significant level  $\alpha = 5\%$ . So distribution of VII-2 class (pre-test) is normal.

## 6. Median

No	Interval	F	Fk
1	20 – 28	3	3
2	29 – 37	2	5
3	38 – 46	7	12
4	<b>47 – 55</b>	13	25
5	56 – 64	5	30
6	65 – 73	3	33
7	74 – 75	4	37

Position of Me in the interval of classes is number 4, that:

$$Bb = 46.5$$

$$F = 7$$

$$fm = 13$$

$$i = 9$$

$$n = 37$$

$$1/2n = 18.5$$

So :

$$Me = Bb + i \left( \frac{n/2 - F}{fm} \right)$$

$$= 46.5 + 9 \left( \frac{18.5 - 7}{13} \right)$$

$$= 46.5 + 9 (0.88)$$

$$= 46.5 + 7.92$$

$$= 54.42$$

## 7. Modus

No	Interval	F	Fk
1	20 – 28	3	3
2	29 – 37	2	5
3	38 – 46	7	18
4	<b>47 – 55</b>	<b>13</b>	25
5	56 – 64	5	30
6	65 – 73	3	33
7	74 – 75	4	37

$$M_o = L + \frac{d_1}{d_1 + d_2} i$$

$$L = 46.5$$

$$d_1 = 6$$

$$d_2 = 8$$

$$i = 9$$

So,

$$\begin{aligned} M_o &= 46.5 + \frac{6}{6+8} 9 \\ &= 46.5 + 3.85 (9) \\ &= 46.5 + 34.65 \\ &= 81.15 \end{aligned}$$

**RESULT OF NORMALITY TEST IN PRE TEST**

## RESULT OF THE NORMALITY TEST OF VII-3 IN PRE-TEST

1. The score of VII-3 class in pre test from low score to high score:

20	20	25	25	30	30	30	30	35	35	35	35	40	40	40	40
45	50	50	50	50	50	50	55	55	55	60	60	65	65	65	70
70	75	75													

2. High = 75

Low = 20

Range = High – Low

= 75 - 20

= 55

3. Total of Classes =  $1 + 3,3 \log (n)$

=  $1 + 3,3 \log (35)$

=  $1 + 3,3 (1.54)$

=  $1 + 5.08$

= 6.08

= 6

4. Length of Classes =  $\frac{range}{totalofclass} = \frac{55}{6} = 9.1$

5. Mean

Interval Class	F	X	x'	fx	x <sup>2</sup>	fx <sup>2</sup>
20 – 28	4	24	3	12	9	36
29 – 37	2	33	2	4	4	8
38 – 46	5	42	1	5	1	5
47 – 55	9	<b>51</b>	0	0	0	0
56 – 64	2	60	-1	-2	1	2
65 – 73	5	69	-2	-10	4	20
74 – 82	8	78	-3	-24	9	72
<i>i</i> = 9	35	-	-	-14	-	143

$$Mx = M^1 + i \frac{\sum fx^1}{N}$$



$$= 51 + 9 \left(\frac{-14}{35}\right)$$

$$= 51 + 9 (-0.4)$$

$$= 47.4$$

$$SD_t = i \sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$$

$$= 9 \sqrt{\frac{143}{35} - \left(\frac{-14}{35}\right)^2}$$

$$= 9 \sqrt{4.08 - 0.16}$$

$$= 9 \sqrt{3.92}$$

$$= 9 \times 1.97$$

$$= 17.73$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of area	f <sub>h</sub>	f <sub>0</sub>	$\frac{(f_0 - \underline{f}_h)}{f_h}$	
74 - 75	75.5	1.58	0.4429					
				0.01	0.35	8	10.4	
65 - 73	73.5	1.47	0.4292					
				0.09	3.14	5	-0.36	
56 - 64	64.5	0.96	0.3315					
				0.15	5.25	2	-0.04	
47 - 55	55.5	0.45	0.1736					
				-0.3	-10.5	9	-1.85	
38 - 46	46.5	-0.05	0.48006					
				0.18	6.3	5	-0.68	
29 - 37	37.5	-0.55	0.29116					
				0.14	4.9	2	0.02	
20 - 28	28.5	-1.06	0.14457					
				0.08	2.8	4	1.85	
	19.5	-1.57	0.05821					
							X <sup>2</sup>	9.34

Based on the table above, the reseracher found that  $x^2_{\text{count}} = 9.34$  while  $x^2_{\text{table}} = 12.592$ , cause  $x^2_{\text{count}} < x^2_{\text{table}}$  ( $9.34 < 12.592$ ) with degree of freedom (dk) =  $9-3 = 6$  and significant level  $\alpha = 5\%$ . So distribution of VII-3 class (pre-test) is normal.

#### 6. Median

No	Interval	F	Fk
1	20 – 28	4	4
2	29 – 37	2	6
3	38 – 46	<b>5</b>	11
4	<b>47 – 55</b>	9	20
5	56 – 64	2	22
6	65 – 73	5	27
7	74 – 75	8	35

Position of Me in the interval of classes is number 4, that:

$$Bb = 46.5$$

$$F = 5$$

$$fm = 9$$

$$i = 9$$

$$n = 35$$

$$1/2n = 17.5$$

So :

$$Me = Bb + i \left( \frac{n/2 - F}{fm} \right)$$

$$= 46.5 + 9 \left( \frac{17.5 - 5}{9} \right)$$

$$= 46.5 + 12.5$$

$$= 46.5 + 7.92$$

$$= 59$$

#### 7. Modus

No	Interval	F	Fk
1	20 – 28	4	4
2	29 – 37	2	6
3	38 – 46	<b>5</b>	11
4	<b>47 – 55</b>	9	20
5	56 – 64	2	22
6	65 – 73	5	27
7	74 – 75	8	35

$$M_o = L + \frac{d_1}{d_1 + d_2} i$$

$$L = 46.5$$

$$d_1 = 4$$

$$d_2 = 7$$

$$i = 9$$

So,

$$\begin{aligned} M_o &= 46.5 + \frac{4}{4+7} 9 \\ &= 46.5 + 3.27 \\ &= 49.77 \end{aligned}$$

## Appendix 22

### RESULT OF NORMALITY TEST IN POST TEST RESULT OF THE NORMALITY TEST OF VII-2 IN POST-TEST

1. The score of VII-2 class in post test from low score to high score:

50	50	50	55	60	60	60	60	60	65	65	65
65	65	70	70	70	70	70	70	75	75	75	75
80	80	80	80	80	80	85	85	85	90	90	95
95											

2. High = 95  
 Low = 50  
 Range = High – Low  
 = 95 - 50  
 = 45

3. Total of Classes =  $1 + 3,3 \log (n)$   
 =  $1 + 3,3 \log (37)$   
 =  $1 + 3,3 (1.56)$   
 =  $1 + 5.04$   
 = 6.14  
 = 6

4. Length of Classes =  $\frac{range}{total\ of\ class} = \frac{45}{6} = 7$

5. Mean

Interval Class	F	X	x'	fx'	x' <sup>2</sup>	fx' <sup>2</sup>
50 – 56	4	53	2	8	4	16
57 – 63	5	60	1	5	1	5
<b>64 – 70</b>	<b>11</b>	<b>67</b>	0	0	0	0
71 – 77	4	74	-1	-4	1	4
78 – 84	6	81	-2	-12	4	24
85 – 91	5	88	-3	-15	9	45
92 – 98	2	95	-4	-8	16	32
<i>i</i> = 7	37	-	-	-26	-	126

$$\begin{aligned}
M_x &= M^1 + i \frac{\sum fx^1}{N} \\
&= 67 + 7 \left( \frac{-26}{37} \right) \\
&= 67 + (-4.91) \\
&= 62.09
\end{aligned}$$

$$\begin{aligned}
SD_t &= i \sqrt{\frac{\sum fx^2}{n} - \left( \frac{\sum fx^1}{n} \right)^2} \\
&= 7 \sqrt{\frac{126}{37} - \left( \frac{-26}{37} \right)^2} \\
&= 7 \sqrt{3.40 - (0.49)} \\
&= 7 \sqrt{2.91} \\
&= 7 \times 1.7 \\
&= 11.90
\end{aligned}$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of area	f <sub>h</sub>	f <sub>0</sub>	$\frac{(f_0 - f_h)}{f_h}$	
92 - 98	98.5	3.05	0.4989					
				0.05	1.85	2	0.08	
85 - 91	91.5	2.47	0.4932					
				0.02	0.74	5	5.75	
78 - 84	84.5	1.88	0.4699					
				0.06	2.22	6	1.70	
71 - 77	77.5	1.29	0.4015					
				0.14	5.18	4	-0.22	
64 - 70	70.5	0.70	0.2580					
				-0.19	-7.03	11	-2.56	
57 - 63	63.5	0.11	0.45620					
				0.12	4.44	5	0.12	
50 - 56	56.5	-0.46	0.32636					
				0.17	6.29	4	-0.36	
	49.5	-1.05	0.14686					
<b>X<sup>2</sup></b>								4.51

Based on the table above, the reseracher found that  $x^2_{\text{count}} = 4.51$  while  $x^2_{\text{table}} = 9.488$ , cause  $x^2_{\text{count}} < x^2_{\text{table}}$  ( $4.51 < 9.488$ ) with degree of freedom (dk) =  $7-3 = 4$  and significant level  $\alpha = 5\%$ . So distribution of VII-2 class (post-test) is normal.

## 6. Median

No	Interval	F	Fk
1	50 – 56	4	4
2	57 – 63	5	9
3	<b>64 – 70</b>	<b>11</b>	<b>20</b>
4	71 – 77	4	24
5	78 – 84	6	30
6	85 – 91	5	35
7	92 – 98	2	37

Position of Me in the interval of classes is number 3, that:

$$Bb = 63.5$$

$$F = 5$$

$$fm = 11$$

$$i = 7$$

$$n = 37$$

$$1/2n = 18.5$$

So :

$$Me = Bb + i \left( \frac{n/2 - F}{fm} \right)$$

$$= 63.5 + 7 \left( \frac{18.5 - 5}{11} \right)$$

$$= 63.5 + 8.59$$

$$= 72.09$$

## 7. Modus

No	Interval	F	Fk
1	50 – 56	4	4
2	57 – 63	5	9
3	<b>64 – 70</b>	<b>11</b>	<b>20</b>
4	71 – 77	4	24
5	78 – 84	6	30
6	85 – 91	5	35
7	92 – 98	2	37

$$M_o = L + \frac{d_1}{d_1 + d_2} i$$

$$L = 63.5$$

$$d_1 = 6$$

$$d_2 = 7$$

$$i = 7$$

So,

$$M_o = 63.5 + \frac{6}{6+7} 7$$

$$= 63.5 + 3.23$$

$$= 66.73$$

$$= 81.15$$

**RESULT OF NORMALITY TEST IN POST TEST**

## RESULT OF THE NORMALITY TEST OF VII-3 IN POST-TEST

1. The score of VII-3 class in post test from low score to high score:

50	50	50	50	50	50	50	50	50	50	50	55
60	60	60	60	60	60	65	65	65	65	70	70
70	75	75	75	80	80	80	85	85	85	95	

2. High = 95

Low = 50

Range = High – Low

= 95 - 50

= 45

3. Total of Classes =  $1 + 3,3 \log (n)$

=  $1 + 3,3 \log (35)$

=  $1 + 3,3 (1.54)$

=  $1 + 5.082$

= 6

4. Length of Classes =  $\frac{range}{total\ of\ class} = \frac{45}{6} = 7$

5. Mean

Interval Class	F	X	x	fx	x <sup>2</sup>	fx <sup>2</sup>
50 – 56	8	53	1	8	1	8
<b>57 – 63</b>	<b>10</b>	<b>60</b>	0	0	0	0
64 – 70	7	67	-1	-7	1	7
71 – 77	3	74	-2	-6	4	12
78 – 84	3	81	-3	-9	9	27
85 – 91	3	88	-4	-12	16	48
92 – 98	1	95	-5	-5	25	25
<i>i = 7</i>	35	-	-	-31	-	127

$$M_x = M^1 + i \frac{\sum fx^1}{N}$$



$$\begin{aligned}
&= 60 + 7 \left( \frac{-31}{35} \right) \\
&= 60 + 7 (-0.88) \\
&= 53.84
\end{aligned}$$

$$\begin{aligned}
SD_t &= i \sqrt{\frac{\sum fx_i^2}{n} - \left( \frac{\sum fx_i}{n} \right)^2} \\
&= 7 \sqrt{\frac{127}{35} - \left( \frac{-31}{35} \right)^2} \\
&= 7 \sqrt{3.62 - (-0.88)^2} \\
&= 7 \sqrt{3.62 - 0.77} \\
&= 7 \times 2.85 \\
&= 19.95
\end{aligned}$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of area	$f_h$	$f_0$	$\frac{(f_0 - \bar{f}_h)}{f_h}$
92 - 98	98.5	2.23	0.4871				
				0.01	0.35	1	1.85
85 - 91	91.5	1.88	0.4699				
				0.03	1.05	3	1.85
78 - 84	84.5	1.53	0.4370				
				0.05	1.75	3	0.71
71 - 77	77.5	1.18	0.3810				
				0.08	2.8	3	0.07
64 - 70	70.5	0.83	0.2967				
				0.11	3.85	7	0.81
57 - 63	63.5	0.48	0.1844				
				0.13	4.55	10	1.19
50 - 56	56.5	0.13	0.0517				
				-0.36	-12.6	8	-1.63
	49.5	-0.21	0.41683				
						$X^2$	4.85

Based on the table above, the researcher found that  $x^2_{\text{count}} = 4,85$  while  $x^2_{\text{table}} = 9.488$ , cause  $x^2_{\text{count}} < x^2_{\text{table}}$  ( $4.85 < 9.488$ ) with degree of freedom (dk) =  $7-3 = 4$  and significant level  $\alpha = 5\%$ . So distribution of VII-3 class (post-test) is normal.

## 6. Median

No	Interval	F	Fk
1	50 – 56	8	8
2	57 – 63	<b>10</b>	18
3	64 – 70	7	25
4	71 – 77	3	28
5	78 – 84	3	31
6	85 – 91	3	34
7	92 – 98	1	35

Position of Me in the interval of classes is number 2, that:

$$Bb = 56.5$$

$$F = 8$$

$$fm = 10$$

$$i = 7$$

$$n = 35$$

$$1/2n = 17.5$$

So :

$$\begin{aligned} Me &= Bb + i \left( \frac{n/2 - F}{fm} \right) \\ &= 56.5 + 7 \left( \frac{17.5 - 8}{10} \right) \\ &= 56.5 + 7 (0.95) \\ &= 63.15 \end{aligned}$$

## 7. Modus

No	Interval	F	Fk
1	50 – 56	8	8
2	57 – 63	<b>10</b>	18
3	64 – 70	7	25
4	71 – 77	3	28
5	78 – 84	3	31
6	85 – 91	3	34
7	92 – 98	1	35

$$M_o = L + \frac{d_1}{d_1 + d_2} i$$

$$L = 56.5$$

$$d_1 = 2$$

$$d_2 = 3$$

$$i = 7$$

So,

$$\begin{aligned} M_o &= 56.5 + \frac{2}{2+3} 7 \\ &= 56.5 + 2.8 \\ &= 59.3 \end{aligned}$$

## Appendix 23

### HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as experimental class sample and variant of the second class as control class sample are used homogeneity test by using formula:

$$S^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)}$$

Hypothesis:

$$H_0 : \delta_1^2 = \delta_2^2$$

$$H_1 : \delta_1^2 \neq \delta_2^2$$

A. Variant of the VII-2 class is:

No	Xi	Xi <sup>2</sup>	No	Xi	Xi <sup>2</sup>
1	20	400	21	50	2500
2	25	625	22	50	2500
3	25	625	23	55	3025
4	35	1225	24	55	3025
5	35	1225	25	55	3025
6	40	1600	26	60	3600
7	40	1600	27	60	3600
8	40	1600	28	60	3600
9	40	1600	29	60	3600
10	40	1600	30	60	3600
11	45	2025	31	65	4225
12	45	2025	32	65	4225
13	45	2025	33	70	4900
14	45	2025	34	75	5625
15	50	2500	35	75	5625
16	50	2500	36	75	5625
17	50	2500	37	75	5625
18	50	2500	<b>Total</b>	<b>1.890</b>	<b>103.125</b>
19	50	2500			
20	50	2500			

$$n = 37$$

$$\sum xi = 1.890$$

$$\sum xi^2 = 103.125$$

So:

$$\begin{aligned} S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\ &= \frac{37(103.125) - (1.890)^2}{37(37-1)} \\ &= \frac{3815625 - 3572100}{37(36)} \\ &= \frac{243525}{1332} \\ &= 182.8265765766 \end{aligned}$$

B. Variant of the VII-3 class is:

NO	Xi	Xi <sup>2</sup>	NO	Xi	Xi <sup>2</sup>
1	20	400	19	50	2500
2	20	400	20	50	2500
3	25	625	21	50	2500
4	25	625	22	50	2500
5	30	900	23	50	2500
6	30	900	24	55	3025
7	30	900	25	55	3025
8	30	900	26	55	3025
9	35	1225	27	60	3600
10	35	1225	28	60	3600
11	35	1225	29	65	4225
12	35	1225	30	65	4225
13	40	1600	31	65	4225
14	40	1600	32	70	4900
15	40	1600	33	70	4900
16	40	1600	34	75	5625
17	45	2025	35	75	5625
18	50	2500	Total	<b>1.625</b>	<b>85.525</b>

$$\begin{aligned}
n &= 35 \\
\sum xi &= 1625 \\
\sum xi^2 &= 85525
\end{aligned}$$

So:

$$\begin{aligned}
S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
&= \frac{35(85525) - (1625)^2}{35(35-1)} \\
&= \frac{2993375 - 2640625}{35(34)} \\
&= \frac{352750}{1190} \\
&= 296.4285714286
\end{aligned}$$

The Formula was used to test the hypothesis was:

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Smallest Variant}}$$

VII-2 and VII-3 :

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Smallest Variant}}$$

So:

$$\begin{aligned}
F &= \frac{296.42857}{182.82657} \\
&= 1.62
\end{aligned}$$

After doing the calculation, researcher found that  $F_{\text{count}} = 1.62$ . It had been compared to  $F_{\text{table}}$  with  $\alpha 5\%$  and dk numerator  $n_1-1 = 37-1 = 36$  and deminator  $n_2-1 = 35-1 = 34$ ). Researcher found that  $F_{\text{table}} = 2.42$ . From the distribution list F, researcher found that  $F_{\text{table}} = 2.42$ . So,  $F_{\text{count}} < F_{\text{table}}$  ( $1.62 < 2.42$ ). It could be concluded that there is no difference variant between the VII-2 class and VII-3 class. It means that the variant is homogenous.

## Appendix 24

### HOMOGENEITY TEST (POST-TEST)

Calculation of parameter to get variant of the first class as experimental class sample and variant of the second class as control class sample are used homogeneity test by using formula:

$$S^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)}$$

Hypothesis:

$$H_0 : \delta_1^2 = \delta_2^2$$

$$H_1 : \delta_1^2 \neq \delta_2^2$$

A. Variant of the VII-2 class is:

No	Xi	Xi <sup>2</sup>	No	Xi	Xi <sup>2</sup>
1	50	2500	20	70	4900
2	50	2500	21	70	4900
3	50	2500	22	75	5625
4	55	3025	23	75	5625
5	60	3600	24	75	5625
6	60	3600	25	80	6400
7	60	3600	26	80	6400
8	60	3600	27	80	6400
9	60	3600	28	80	6400
10	65	4225	29	80	6400
11	65	4225	30	80	6400
12	65	4225	31	85	7225
13	65	4225	32	85	7225
14	65	4225	33	85	7255
15	65	4225	34	90	8100
16	70	4900	35	90	8100
17	70	4900	36	95	9025
18	70	4900	37	95	9025
19	70	4900	Total	<b>2645</b>	<b>194505</b>

$$n = 37$$

$$\sum xi = 2645$$

$$\sum xi^2 = 194505$$

So:

$$\begin{aligned} S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\ &= \frac{37(194505) - (2645)^2}{37(37-1)} \\ &= \frac{7196685 - 6996025}{37(36)} \\ &= \frac{200660}{1332} \\ &= 150.6456456456 \end{aligned}$$

B. Variant of the VII-3 class is:

NO	Xi	Xi <sup>2</sup>	NO	Xi	Xi <sup>2</sup>
1	50	2500	19	65	4225
2	50	2500	20	65	4225
3	50	2500	21	65	4225
4	50	2500	22	65	4900
5	50	2500	23	70	4900
6	50	2500	24	70	4900
7	50	2500	25	70	4900
8	55	3025	26	75	5625
9	60	3600	27	75	5625
10	60	3600	28	75	5625
11	60	3600	29	80	6400
12	60	3600	30	80	6400
13	60	3600	31	80	6400
14	60	3600	32	85	7225
15	60	3600	33	85	7225
16	60	3600	34	85	7225
17	60	3600	35	95	9025
18	60	3600	Total	<b>2290</b>	<b>155575</b>



$$\begin{aligned}
n &= 35 \\
\sum xi &= 2290 \\
\sum xi^2 &= 155575
\end{aligned}$$

So:

$$\begin{aligned}
S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
&= \frac{35(155575) - (2290)^2}{35(35-1)} \\
&= \frac{5445125 - 5244100}{35(34)} \\
&= \frac{201025}{1190} \\
&= 168.9285714
\end{aligned}$$

The Formula was used to test the hypothesis was:

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Smallest Variant}}$$

VII-2 and VII-3 :

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Smallest Variant}}$$

So:

$$\begin{aligned}
F &= \frac{168.9285}{150.6456} \\
&= 1.12
\end{aligned}$$

After doing the calculation, researcher found that  $F_{\text{count}} = 1.12$ . It had been compared to  $F_{\text{table}}$  with  $\alpha 5\%$  and dk numerator  $n_1-1 = 37-1 = 36$  and deminator  $n_2-1 = 35-1 = 34$ ). Researcher found that  $F_{\text{table}} = 2.42$ . From the distribution list F, researcher found that  $F_{\text{table}} = 2.42$ . So,  $F_{\text{count}} < F_{\text{table}}$  ( $1.12 < 2.42$ ). It could be concluded that there is no difference variant between the VII-2 class and VII-3 class. It means that the variant is homogenous.

## Appendix 25

### T-test of the Both Averages in Pre-Test

The formula was used to analyse homogeneity test of the both averages was t-test, that:

$$Tt = \frac{X_1 - X_2}{\sqrt{\left(\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$Tt = \frac{51.72 - 47.4}{\sqrt{\left(\frac{(37 - 1)182.82 + (35 - 1)296.42}{37 + 35 - 2}\right)\left(\frac{1}{37} + \frac{1}{35}\right)}}$$

$$Tt = \frac{4.32}{\sqrt{\left(\frac{36(182.82) + 34(296.42)}{70}\right)(0.02 + 0.02)}}$$

$$Tt = \frac{4.32}{\sqrt{\left(\frac{6581.5 + 10078.2}{70}\right)(0.04)}}$$

$$Tt = \frac{4.32}{\sqrt{(237.9)(0.04)}}$$

$$Tt = \frac{4.32}{\sqrt{9.5}}$$

$$Tt = \frac{4.32}{3.08}$$

$$Tt = 1.40$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that  $t_{\text{count}} = 1.40$  with opportunity  $(1 - \alpha) = 1 - 5\% = 95\%$  and  $dk = n_1 + n_2 - 2 = 37 + 35 - 2 = 70$ ,  $t_{\text{table}} = 1.66691$ . So,  $t_{\text{count}} < t_{\text{table}}$  ( $1.402 < 1.66691$ ) and  $H_0$  is accepted, it means no difference the average between the VII-2 as experimental class and VII-3 as control class in this research.

## Appendix 26

### T-test of the Both Averages in Post-Test

The formula was used to analyse homogeneity test of the both averages was t-test, that:

$$Tt = \frac{X_1 - X_2}{\sqrt{\left(\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$Tt = \frac{62.09 - 53.84}{\sqrt{\left(\frac{(37 - 1)150.64 + (35 - 1)168.92}{37 + 35 - 2}\right)\left(\frac{1}{37} + \frac{1}{35}\right)}}$$

$$Tt = \frac{8.25}{\sqrt{\left(\frac{36(150.64) + 34(168.92)}{70}\right)(0.02 + 0.02)}}$$

$$Tt = \frac{8.25}{\sqrt{\left(\frac{2423.04 + 5743.28}{70}\right)(0.04)}}$$

$$Tt = \frac{8.25}{\sqrt{(116.6)(0.04)}}$$

$$Tt = \frac{8.25}{\sqrt{4.664}}$$

$$Tt = \frac{8.25}{2.1}$$

$$Tt = 3.92$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that  $t_{\text{count}} = 3.92$  with opportunity  $(1 - \alpha) = 1 - 5\% = 95\%$  and  $dk = n_1 + n_2 - 2 = 37 + 35 - 2 = 70$ ,  $t_{\text{table}} = 1.66691$ . So,  $t_{\text{count}} > t_{\text{table}}$  ( $3.92 > 1.66691$ ) and  $H_a$  is accepted, it means there was the difference average between the VII-2 as experimental class and VII-3 class as control class in this research.

**Appendix 27**

**Chi-Square Table**

<b>Dk</b>	<b>Significant level</b>					
	<b>50%</b>	<b>30%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>	<b>1%</b>
<b>1</b>	0,455	1,074	1,642	2,706	3,841	6,635
<b>2</b>	1,386	2,408	3,219	4,605	5,991	9,210
<b>3</b>	2,366	3,665	4,642	6,251	7,815	11,341
<b>4</b>	3,357	4,878	5,989	7,779	9,488	13,277
<b>5</b>	4,351	6,064	7,289	9,236	11,070	15,086
<b>6</b>	5,348	7,231	8,558	10,645	12,592	16,812
<b>7</b>	6,346	8,383	9,803	12,017	14,067	18,475
<b>8</b>	7,344	9,524	11,030	13,362	15,507	20,090
<b>9</b>	8,343	10,656	12,242	14,684	16,919	21,666
<b>10</b>	9,342	11,781	13,442	15,987	18,307	23,209
<b>11</b>	10,341	12,899	14,631	17,275	19,675	24,725
<b>12</b>	11,340	14,011	15,812	18,549	21,026	26,217
<b>13</b>	12,340	15,119	16,985	19,812	22,362	27,688
<b>14</b>	13,339	16,222	18,151	21,064	23,685	29,141
<b>15</b>	14,339	17,222	19,311	22,307	24,996	30,578
<b>16</b>	15,338	18,418	20,465	23,542	26,296	32,000
<b>17</b>	16,338	19,511	21,615	24,769	27,587	33,409
<b>18</b>	17,338	20,601	22,760	25,989	28,869	34,805
<b>19</b>	18,338	21,689	23,900	27,204	30,144	36,191
<b>20</b>	19,337	22,775	25,038	28,412	31,410	37,566
<b>21</b>	20,337	23,858	26,171	29,615	32,671	38,932
<b>22</b>	21,337	24,939	27,301	30,813	33,924	40,289
<b>23</b>	22,337	26,018	28,429	32,007	35,172	41,638
<b>24</b>	23,337	27,096	29,553	33,196	35,415	42,980
<b>25</b>	24,337	28,172	30,675	34,382	37,652	44,314
<b>26</b>	25,336	29,246	31,795	35,563	38,885	45,642
<b>27</b>	26,336	30,319	32,912	36,741	40,113	46,963
<b>28</b>	27,336	31,391	34,027	37,916	41,337	48,278
<b>29</b>	28,336	32,461	35,139	39,087	42,557	49,588
<b>30</b>	29,336	33,530	36,250	40,256	43,773	50,892

## Appendix 28

### Z-Table

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.9	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003
-3.8	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005
-3.7	0.00011	0.00010	0.00010	0.00010	0.00009	0.00009	0.00008	0.00008	0.00008	0.00008
-3.6	0.00016	0.00015	0.00015	0.00014	0.00014	0.00013	0.00013	0.00012	0.00012	0.00011
-3.5	0.00023	0.00022	0.00022	0.00021	0.00020	0.00019	0.00019	0.00018	0.00017	0.00017
-3.4	0.00034	0.00032	0.00031	0.00030	0.00029	0.00028	0.00027	0.00026	0.00025	0.00024
-3.3	0.00048	0.00047	0.00045	0.00043	0.00042	0.00040	0.00039	0.00038	0.00036	0.00035
-3.2	0.00069	0.00066	0.00064	0.00062	0.00060	0.00058	0.00056	0.00054	0.00052	0.00050
-3.1	0.00097	0.00094	0.00090	0.00087	0.00084	0.00082	0.00079	0.00076	0.00074	0.00071
-3.0	0.00135	0.00131	0.00126	0.00122	0.00118	0.00114	0.00111	0.00107	0.00104	0.00100
-2.9	0.00187	0.00181	0.00175	0.00169	0.00164	0.00159	0.00154	0.00149	0.00144	0.00139
-2.8	0.00256	0.00248	0.00240	0.00233	0.00226	0.00219	0.00212	0.00205	0.00199	0.00193
-2.7	0.00347	0.00336	0.00326	0.00317	0.00307	0.00298	0.00289	0.00280	0.00272	0.00264
-2.6	0.00466	0.00453	0.00440	0.00427	0.00415	0.00402	0.00391	0.00379	0.00368	0.00357
-2.5	0.00621	0.00604	0.00587	0.00570	0.00554	0.00539	0.00523	0.00508	0.00494	0.00480
-2.4	0.00820	0.00798	0.00776	0.00755	0.00734	0.00714	0.00695	0.00676	0.00657	0.00639
-2.3	0.01072	0.01044	0.01017	0.00990	0.00964	0.00939	0.00914	0.00889	0.00866	0.00842
-2.2	0.01390	0.01355	0.01321	0.01287	0.01255	0.01222	0.01191	0.01160	0.01130	0.01101
-2.1	0.01786	0.01743	0.01700	0.01659	0.01618	0.01578	0.01539	0.01500	0.01463	0.01426
-2.0	0.02275	0.02222	0.02169	0.02118	0.02068	0.02018	0.01970	0.01923	0.01876	0.01831
-1.9	0.02872	0.02807	0.02743	0.02680	0.02619	0.02559	0.02500	0.02442	0.02385	0.02330

<b>-1.8</b>	0.03593	0.03515	0.03438	0.03362	0.03288	0.03216	0.03144	0.03074	0.03005	0.02938
<b>-1.7</b>	0.04457	0.04363	0.04272	0.04182	0.04093	0.04006	0.03920	0.03836	0.03754	0.03673
<b>-1.6</b>	0.05480	0.05370	0.05262	0.05155	0.05050	0.04947	0.04846	0.04746	0.04648	0.04551
<b>-1.5</b>	0.06681	0.06552	0.06426	0.06301	0.06178	0.06057	0.05938	0.05821	0.05705	0.05592
<b>-1.4</b>	0.08076	0.07927	0.07780	0.07636	0.07493	0.07353	0.07215	0.07078	0.06944	0.06811
<b>-1.3</b>	0.09680	0.09510	0.09342	0.09176	0.09012	0.08851	0.08691	0.08534	0.08379	0.08226
<b>-1.2</b>	0.11507	0.11314	0.11123	0.10935	0.10749	0.10565	0.10383	0.10204	0.10027	0.09853
<b>-1.1</b>	0.13567	0.13350	0.13136	0.12924	0.12714	0.12507	0.12302	0.12100	0.11900	0.11702
<b>-1.0</b>	0.15866	0.15625	0.15386	0.15151	0.14917	0.14686	0.14457	0.14231	0.14007	0.13786
<b>-0.9</b>	0.18406	0.18141	0.17879	0.17619	0.17361	0.17106	0.16853	0.16602	0.16354	0.16109
<b>-0.8</b>	0.21186	0.20897	0.20611	0.20327	0.20045	0.19766	0.19489	0.19215	0.18943	0.18673
<b>-0.7</b>	0.24196	0.23885	0.23576	0.23270	0.22965	0.22663	0.22363	0.22065	0.21770	0.21476
<b>-0.6</b>	0.27425	0.27093	0.26763	0.26435	0.26109	0.25785	0.25463	0.25143	0.24825	0.24510
<b>-0.5</b>	0.30854	0.30503	0.30153	0.29806	0.29460	0.29116	0.28774	0.28434	0.28096	0.27760
<b>-0.4</b>	0.34458	0.34090	0.33724	0.33360	0.32997	0.32636	0.32276	0.31918	0.31561	0.31207
<b>-0.3</b>	0.38209	0.37828	0.37448	0.37070	0.36693	0.36317	0.35942	0.35569	0.35197	0.34827
<b>-0.2</b>	0.42074	0.41683	0.41294	0.40905	0.40517	0.40129	0.39743	0.39358	0.38974	0.38591
<b>-0.1</b>	0.46017	0.45620	0.45224	0.44828	0.44433	0.44038	0.43644	0.43251	0.42858	0.42465
<b>-0.0</b>	0.50000	0.49601	0.49202	0.48803	0.48405	0.48006	0.47608	0.47210	0.46812	0.46414

**Z-Table**

<b>z</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.03</b>	<b>0.04</b>	<b>0.05</b>	<b>0.06</b>	<b>0.07</b>	<b>0.08</b>	<b>0.09</b>
<b>0.0</b>	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
<b>0.1</b>	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
<b>0.2</b>	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
<b>0.3</b>	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
<b>0.4</b>	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
<b>0.5</b>	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
<b>0.6</b>	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
<b>0.7</b>	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
<b>0.8</b>	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
<b>0.9</b>	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
<b>1.0</b>	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
<b>1.1</b>	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
<b>1.2</b>	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
<b>1.3</b>	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
<b>1.4</b>	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
<b>1.5</b>	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
<b>1.6</b>	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
<b>1.7</b>	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
<b>1.8</b>	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
<b>1.9</b>	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
<b>2.0</b>	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
<b>2.1</b>	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
<b>2.2</b>	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
<b>2.3</b>	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
<b>2.4</b>	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
<b>2.5</b>	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
<b>2.6</b>	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964





## Appendix 29

### Percentage Points of the t Distribution

Pr df	0.25	0.10	0.05	0.025	0.01	0.005	0.001
	0.50	0.20	0.10	0.050	0.02	0.010	0.002
1	1.00000	3.07768	6.31375	12.70620	31.82052	63.65674	318.30884
2	0.81650	1.88562	2.91999	4.30265	6.96456	9.92484	22.32712
3	0.76489	1.63774	2.35336	3.18245	4.54070	5.84091	10.21453
4	0.74070	1.53321	2.13185	2.77645	3.74695	4.60409	7.17318
5	0.72669	1.47588	2.01505	2.57058	3.36493	4.03214	5.89343
6	0.71756	1.43976	1.94318	2.44691	3.14267	3.70743	5.20763
7	0.71114	1.41492	1.89458	2.36462	2.99795	3.49948	4.78529
8	0.70639	1.39682	1.85955	2.30600	2.89646	3.35539	4.50079
9	0.70272	1.38303	1.83311	2.26216	2.82144	3.24984	4.29681
10	0.69981	1.37218	1.81246	2.22814	2.76377	3.16927	4.14370
11	0.69745	1.36343	1.79588	2.20099	2.71808	3.10581	4.02470
12	0.69548	1.35622	1.78229	2.17881	2.68100	3.05454	3.92963
13	0.69383	1.35017	1.77093	2.16037	2.65031	3.01228	3.85198
14	0.69242	1.34503	1.76131	2.14479	2.62449	2.97684	3.78739
15	0.69120	1.34061	1.75305	2.13145	2.60248	2.94671	3.73283
16	0.69013	1.33676	1.74588	2.11991	2.58349	2.92078	3.68615
17	0.68920	1.33338	1.73961	2.10982	2.56693	2.89823	3.64577
18	0.68836	1.33039	1.73406	2.10092	2.55238	2.87844	3.61048
19	0.68762	1.32773	1.72913	2.09302	2.53948	2.86093	3.57940
20	0.68695	1.32534	1.72472	2.08596	2.52798	2.84534	3.55181
21	0.68635	1.32319	1.72074	2.07961	2.51765	2.83136	3.52715
22	0.68581	1.32124	1.71714	2.07387	2.50832	2.81876	3.50499
23	0.68531	1.31946	1.71387	2.06866	2.49987	2.80734	3.48496
24	0.68485	1.31784	1.71088	2.06390	2.49216	2.79694	3.46678
25	0.68443	1.31635	1.70814	2.05954	2.48511	2.78744	3.45019
26	0.68404	1.31497	1.70562	2.05553	2.47863	2.77871	3.43500
27	0.68368	1.31370	1.70329	2.05183	2.47266	2.77068	3.42103
28	0.68335	1.31253	1.70113	2.04841	2.46714	2.76326	3.40816
29	0.68304	1.31143	1.69913	2.04523	2.46202	2.75639	3.39624
30	0.68276	1.31042	1.69726	2.04227	2.45726	2.75000	3.38518
31	0.68249	1.30946	1.69552	2.03951	2.45282	2.74404	3.37490
32	0.68223	1.30857	1.69389	2.03693	2.44868	2.73848	3.36531
33	0.68200	1.30774	1.69236	2.03452	2.44479	2.73328	3.35634
34	0.68177	1.30695	1.69092	2.03224	2.44115	2.72839	3.34793
35	0.68156	1.30621	1.68957	2.03011	2.43772	2.72381	3.34005
36	0.68137	1.30551	1.68830	2.02809	2.43449	2.71948	3.33262
37	0.68118	1.30485	1.68709	2.02619	2.43145	2.71541	3.32563
38	0.68100	1.30423	1.68595	2.02439	2.42857	2.71156	3.31903
39	0.68083	1.30364	1.68488	2.02269	2.42584	2.70791	3.31279
40	0.68067	1.30308	1.68385	2.02108	2.42326	2.70446	3.30688

### Percentage Points of the t Distribution

Pr df	0.25	0.10	0.05	0.025	0.01	0.005	0.001
	0.50	0.20	0.10	0.050	0.02	0.010	0.002
41	0.68052	1.30254	1.68288	2.01954	2.42080	2.70118	3.30127
42	0.68038	1.30204	1.68195	2.01808	2.41847	2.69807	3.29595
43	0.68024	1.30155	1.68107	2.01669	2.41625	2.69510	3.29089
44	0.68011	1.30109	1.68023	2.01537	2.41413	2.69228	3.28607
45	0.67998	1.30065	1.67943	2.01410	2.41212	2.68959	3.28148
46	0.67986	1.30023	1.67866	2.01290	2.41019	2.68701	3.27710
47	0.67975	1.29982	1.67793	2.01174	2.40835	2.68456	3.27291
48	0.67964	1.29944	1.67722	2.01063	2.40658	2.68220	3.26891
49	0.67953	1.29907	1.67655	2.00958	2.40489	2.67995	3.26508
50	0.67943	1.29871	1.67591	2.00856	2.40327	2.67779	3.26141
51	0.67933	1.29837	1.67528	2.00758	2.40172	2.67572	3.25789
52	0.67924	1.29805	1.67469	2.00665	2.40022	2.67373	3.25451
53	0.67915	1.29773	1.67412	2.00575	2.39879	2.67182	3.25127
54	0.67906	1.29743	1.67356	2.00488	2.39741	2.66998	3.24815
55	0.67898	1.29713	1.67303	2.00404	2.39608	2.66822	3.24515
56	0.67890	1.29685	1.67252	2.00324	2.39480	2.66651	3.24226
57	0.67882	1.29658	1.67203	2.00247	2.39357	2.66487	3.23948
58	0.67874	1.29632	1.67155	2.00172	2.39238	2.66329	3.23680
59	0.67867	1.29607	1.67109	2.00100	2.39123	2.66176	3.23421
60	0.67860	1.29582	1.67065	2.00030	2.39012	2.66028	3.23171
61	0.67853	1.29558	1.67022	1.99962	2.38905	2.65886	3.22930
62	0.67847	1.29536	1.66980	1.99897	2.38801	2.65748	3.22696
63	0.67840	1.29513	1.66940	1.99834	2.38701	2.65615	3.22471
64	0.67834	1.29492	1.66901	1.99773	2.38604	2.65485	3.22253
65	0.67828	1.29471	1.66864	1.99714	2.38510	2.65360	3.22041
66	0.67823	1.29451	1.66827	1.99656	2.38419	2.65239	3.21837
67	0.67817	1.29432	1.66792	1.99601	2.38330	2.65122	3.21639
68	0.67811	1.29413	1.66757	1.99547	2.38245	2.65008	3.21446
69	0.67806	1.29394	1.66724	1.99495	2.38161	2.64898	3.21260
70	0.67801	1.29376	1.66691	1.99444	2.38081	2.64790	3.21079
71	0.67796	1.29359	1.66660	1.99394	2.38002	2.64686	3.20903
72	0.67791	1.29342	1.66629	1.99346	2.37926	2.64585	3.20733
73	0.67787	1.29326	1.66600	1.99300	2.37852	2.64487	3.20567
74	0.67782	1.29310	1.66571	1.99254	2.37780	2.64391	3.20406
75	0.67778	1.29294	1.66543	1.99210	2.37710	2.64298	3.20249
76	0.67773	1.29279	1.66515	1.99167	2.37642	2.64208	3.20096
77	0.67769	1.29264	1.66488	1.99125	2.37576	2.64120	3.19948
78	0.67765	1.29250	1.66462	1.99085	2.37511	2.64034	3.19804
79	0.67761	1.29236	1.66437	1.99045	2.37448	2.63950	3.19663
80	0.67757	1.29222	1.66412	1.99006	2.37387	2.63869	3.19526
∞							

**Appendix 30**

**RESEARCH DOKUMENTATION**











**KEMENTERIAN AGAMA REPUBLIK INDONESIA**  
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1. Eka Sustri Harida, M. Pd (Pembimbing I)  
2. Yusni Sinaga, M. Hum (Pembimbing II)

di-Padangsidimpuan

Assalamu'alaikum Wr. Wb.

Dengan hormat, sehubungan dengan hasil sidang bersama tim pengkaji judul skripsi jurusan Tadris Bahasa Inggris (TBI) Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidimpuan. Maka dengan ini kami mohon kepada Bapak/Ibu agar dapat menjadi pembimbing skripsi dan melakukan penyempurnaan judul bilamana perlu untuk mahasiswa dibawah ini dengan data sebagai berikut:

Nama : Wardah MutiahNasution  
NIM : 1520300024  
Fak/Jurusan : Tarbiyah dan Ilmu Keguruan/ Tadris Bahasa Inggris  
Judul Skripsi : The Effect of Anagram Game to The Students' Vocabulary Mastery at Grade VII MTsN 2 Padangsidimpuan

Demikian disampaikan, atas kesediaan dan kerjasama yang baik dari Bapak/Ibu kami ucapkan terima kasih.

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Penyelesaian Skripsi.

12 Desember 2019

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Kota Padangsidempuan

Dengan hormat, bersama ini kami sampaikan bahwa :

Nama : Wardah Mutiah Nasution.  
NIM : 1520300024  
Program Studi : Tadris/Pendidikan Bahasa Inggris  
Fakultas : Tarbiyah dan Ilmu Keguruan  
Alamat : Sibanggor Tonga Mandailing Natal

adalah Mahasiswa Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidempuan yang sedang menyelesaikan Skripsi dengan Judul "The Effect of Anagram Game to The Students' Vocabulary Mastery at Grade VII MTsN 2 Padangsidempuan".

Sehubungan dengan itu, kami mohon bantuan Bapak/Ibu untuk memberikan izin penelitian sesuai dengan maksud judul diatas.

Demikian disampaikan, atas kerja sama yang baik diucapkan terimakasih.

a.n. Dekan  
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**KANTOR KEMENTERIAN AGAMA REPUBLIK INDONESIA**  
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Jalan H.T Rizal Nurdin Km. 6,5 Gg. Pendidikan

3-304/Mts.02.28/TL.00/12/2019  
Pelaksanaan Riset

Padangsidimpuan, 19 Desember 2019

Yth :

Dekan Fakultas Tarbiyah dan Ilmu Keguruan  
Institut Agama Islam Negeri (IAIN) Padangsidimpuan  
i -  
Padangsidimpuan


Yang terhormat,

Sehubungan dengan Surat Dekan Fakultas Tarbiyah dan Ilmu Keguruan Institut Agama Islam Negeri (IAIN) Padangsidimpuan Nomor : B- 2188/ In.14/E/TL.00/12/2019 tanggal 12 Desember 2019 hal dipokok surat, maka bersama ini kami beritahukan kepada Bapak bahwa :

Nama : Wardah Mutiah Nasution  
N I M : 1520300024  
Program Studi : Tadris/ Pendidikan Bahasa Inggris  
Fakultas : Tarbiyah dan Ilmu Keguruan  
Alamat : Sibanggor Tonga Mandailing Natal

Untuk melaksanakan riset pada MTsN 2 Padangsidimpuan dengan judul :  
"The Effect of Anagram Game to The Students' Vocabulary Mastery at Grade VII MTsN 2 Padangsidimpuan".

Demikian kami sampaikan atas perhatiannya diucapkan terima kasih.

Kepala,  
  
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