

# THE EIFECT OF WORD SEARCH PUZZLE TO STUDENTS' VOCABULARY MASTERY AT GRADE VII SMP NEGERI 5 PADANGSIDIMPUAN 

## ATHIESIS

Submitted to State Institute Islamic Studies (IAIN) Padangsidimpuan as a Partial Fulfillment of the Requirement for the Graduate Degree of Istamic Educational Scholar (S.Pd.i) in English

## Written By:

DESI AFRIDAH LUBIS

Reg. Number: 103400044

## ENGLISH EDUCATION DEPARTMENT

# TARBIYAH AND TEACHING TRAINING FACULTY STATE INSTITUTE FOR ISLAMIC STUDIES PADANGSIDIMPUAN 

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## LETTER OF AGREEMENT

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Padangsidimpuan, July $13^{\text {th }} 2015$
To:
Dean Tarbiyah and Teacher Training Faculty In-

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Assalamu'alaikum Wr.Wb.

After Reading, studying and giving advices for necessary revision on thesis belongs to Desi Afridah Lubis, entitled "The Effect of Word Search Puzzle to Students' Vocabulary Mastery at Grade VII SMP Negeri 5 Padangsidimpuan", we approved that the thesis has been acceptable the complete and fulfill the requirement to fulfill for the degree of Graduated of Islamic Education (S.Pd.I) in English.

Therefore, we hoped that the thesis will soon be examined in front of the Thesis Examiner Team of English Department of Tarbiyah and Teacher Training Faculty IAIN Padangsidimpuan. Thank you.

Wassalamu'alaikum Wr.Wb.

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## DECLARATION OF SELF THESIS COMPLETION

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: July, $13^{\text {th }} 2015$
Time
: 09.00 WIB - Finish
Result/Mark
: 70.25 (B)
Cumulative Achievement Index
: 3.05
Predicate
: Very Good

## LEGALIZATION

| Title of Thesis | $:$ THE EFFECT OF WORD SEARCH PUZZLE TO |
| :--- | :--- |
|  | STUDENTS' VOCABULARY MASTERY AT GRADE VII |
|  | SMP NEGERI 5 PADANGSIDIMPUAN |
| Written By | $:$ DESI AFRIDAH LUBIS |
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| Faculty / Department | $:$TARBIYAH AND TEACHER TRAINING FACULTY / <br>  <br>  <br>  <br>  |

The Thesis had been accepted as a partial fulfillment of the requirement for the degree of graduate of Islamic Education (S.Pd.I)


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#### Abstract

Name Register Number Faculty Department The Title of the Thesis : DESI AFRIDAH LUBIS : 103400044 : Tarbiyah and Teacher Training : English Education (TBI-2) : The Effect of Word Search Puzzle to Students' Vocabulary Mastery at grade VII SMP Negeri 5 Padangsidimpuan

This research discussed about the effect of Word search puzzle to students' vocabulary Mastery at Grade VII SMP N 5 Padangsidimpuan. The problems of the research were the students cannot used Vocabulary correctly and uninterested teaching strategy. As the result, the students are difficult in understanding vocabulary and the students, so lazy in opening the dictionary. The aim of this research was to find out the effect of word search puzzle to students' vocabulary Mastery at grade VII SMP N 5 Padangsidimpuan.

This research applied experimental research. The population of this research was the VII grade of SMP Negeri 5 Padangsidimpuan. The total of population were twelve classes. Then, the sample of the research was 2 classes, experiment class (VII1 and control class VII-3). It was taken after conducting normality and homogeneity test. To collect the data, researcher used test for measuring students' vocabulary mastery. To analysis the data, the researcher used $t$-test.

Based on the result of the research, researcher found that the result of experimental class was higher than control class ( $80.95>75.85$ ), and the score of $\mathrm{t}_{\text {count }}$ was bigger than $\mathrm{t}_{\text {table }}$ ( $6.98>2.021$ ). It means that the hypothesis alternative $\left(\mathrm{H}_{\mathrm{a}}\right)$ was accepted. It was concluded that there was significant effect of Word Search Puzzle to Students' Vocabulary Mastery at grade VII SMP Negeri 5 Padangsidimpuan.


## ACKNOWLEDGEMENT

## 

Praise to Allah the Almighty for giving me healthy, opportunity, and ability to completing this thesis. Peace and blessing upon our prophet Muhammad SAW, his families, his companies, and his followers.

This thesis is presented to the English Education Department of the State Institute for Islamic Studies (IAIN) Padangsidimpuan as partial fulfillment of the requirement for degree of strata I (S1).

This thesis can't be completed without a great deal of help from many people, especially Mrs. Eka Sustri Harida., M. Pd. as My advisor and Mrs. Fitri Rayani Siregar., M. Hum. As the Co advisor who always give their time, valuable help, guidance, correction, and suggestion for completion of this thesis.

My deepest gratitude also goes to those who have helped me in finishing this thesis, among others:

1. Dr. H. Ibrahim Siregar, MCL, as the Rector of State Institute for Islamic Studies Padangsidimpuan.
2. Mrs. Hj. Zulhimma, S.Ag, M.Pd., the Dean of Tarbiyah and Pedagogy Faculty.
3. Mrs. Rayendriani Fahmei Lubis, M.Ag., the chief of English Education Department.
4. All lecturers and staff in English Education Department who had given their valuable, advice, and cooperative.
5. IAIN Padangsidimpuan Library (Yusri Fahmi S.Ag, S.S), for their cooperative and permission to use their books.
6. Mr. Drs. M. Idris, as the head master of SMP Negeri 5 Padangsidimpuan, who had helped to complete this research as well as his students for the helping has given to me.
7. My beloved Parent (Samsul Lubis and Masdelina Nasution), my beloved young Sisters (Nisma Sari Lubis, Roslaini Lubis, Linda Sari Lubis, and Ida Roma Ito Lubis), my beloved Young Brother (Irwan Saleh Lubis) and my beloved grandmother (Maryam Nasution) who always give their materials, prays, motivation, and moral encouragement to finish my study.
8. My beloved friends; Nurhayati S.Pd.I, Citra Dewi Purnama, S.Pd.I, Hidayati, S.Pd.I, Ummi Kartini Harahap, Melda Maya Sari Tanjung, S.Pd.I., and especially all of TBI-2 thanks' for your help, patience and care to support to finish my written.
9. All my friends in IAIN Padangsidimpuan, good luck for you.
10. All the people who have helped the writer to finish her study that she can't mention one by one.

May Allah, The almighty bless them all, Amin.

Padangsidimpuan, 18 June 2015
Declaration maker

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## CHAPTER I

## INTRODUCTION

## A. Background of the Problems

Language is an important device and a very beneficial means for human being to communicate with other people. We need a language to shape our thoughts, feelings, desires, and our deeds. That is why language is so important thing in our life. By using language, people can talk and understand each other. One region has different languages with other. Such as Indonesian language in Indonesia, Mandarin in Chinese, Arabic in Arab, English in England, etc.

English, Arab, Mandarin, Indonesia, Russian, Spanish and Portugal language are international language. English used as nation's language in 53 countries and 10 organizations in the world, such as South Africa, Australia, Brunei Darussalam, Ghana, Hong Kong, India, Singapore, Tanzania etc. International organizations used English as formal language are PBB, The Europe Organizations, NATO, NAFTA, ${ }^{1}$ English considered as the first international language because spoken in many countries both as a native and as a second or foreign language.

English becomes a lot of communication around the world include educational aspect. In teaching, language is used to communicate between teachers and students to give and get information and knowledge. Government realizes that

1 "Bahasa Paling Banyak Digunakan Di Dunia" Retrieved from http://www.asal-usul.com/2010/06/10-bahasa-paling-banyak-digunakan-dunia.html, accessed on March 27 ${ }^{\text {th }}$, 2014

English language should be learned since the beginning of educational process to get the best result for the next Indonesian generation.

Moreover, English becomes the only foreign language which is include in national examination or can be called Ujian Nasional (National Examination) from junior high school. ${ }^{2}$ In curriculum 2013, English became local content like in 1994 curriculum to elementary school. English vocabulary is started from elementary school. It is needed to develop language teaching. So, elementary school must be mastered up to $250-500$ words. ${ }^{3}$ The language components are grammar, pronunciations and vocabulary. Vocabulary mastery becomes an important part in English that should be owned by all students to understand English completely. Vocabulary is an important component of language in learning a language. Learning a language especially as basic of language. In this case, vocabulary is important in education, next on Islamic concept, vocabulary is important in our life, it can be looked in Al Baqarah verse 31 states;


[^0]"31) and He taught Adam all the names (of everything), then He showed them to the angels and said "tell me the names of these if you are truthful'. ${ }^{4}$

Vocabulary mastery can influence the students' English skills (reading, istening, speaking, and writing). It is very important to teach it in junior high school, because the students are children, fresh and they will be easy to remember vocabularies, if the students master vocabulary is essential for getting succes in learning english.

However, based on the researchers pre interview, many students have less vocabulary, as a result they do not know the meaning of sentence and they can not reach rhe idea of what they have read or listened. Finally, most of them say "English subject is difficult", and it also makes them lazy to learning in English. ${ }^{5}$

Considering, English in an important subject taught in formal education in indonesia, it is taught for elementary to university. Now days, the teaching of English take place every class of junior high school four hours a week. Teaching English vocabulary at junior high school is very important, because English is taugh from basic components such as vocabulary, based on the curriculum the purpose of teaching English in junior high school is to make the the students able to listen, speak, read and write some basic vocabularies and simple functional skill wheather in the classroom or outside the class.

[^1]Media and method is very important in teaching process, it can help teachers to explain the material. The teachers was using technique in teaching learning process, to improve the students in learning vocabulary. But the teacher not succes in their technique. Last the teachers does not know the English method of teaching and she don't know what the suitable technique for teaching speaking, reading, vocabulary, listening and so on. ${ }^{6}$

To be succes in learning the teacher must be able to use English in the class or outside. For learning vocabulary can use games, picture and using card and the researcher would focus only on word search puzzles method in teaching vocabulary for junior high school. In addition, a better way and easier to teach English, especially to students is by using games, such as word search puzzle games. Because this game could be an alternative or variation in the methods of English teaching for teacher, whit this method, students will not feel bored in learning English. But they will become critical and active children in learning English.

Vocabulary as a major part in English language has to be taught effectifely, because students should feel glad and interesting in learning vocabulary. If the process of learning is going on without giving and holding the interesting condition of learning, students will easy to bored, and finally they cannot master and memorize vocabulary well. If this case actually happened,

[^2]process of learning English not running well, because student cannot understand vocabulary as the root of English, so how come they will have ability for all aspects in English without matering vocabulary. Like the case that happened at SMP Negeri 5 Padangsidimpuan. As an English teacher Marlina Hasibuan, S.Pd, said:

The students feel boring in studying English vocabulary by conventional teaching (without media) was given by their English teacher. by using opening dictionary method in finding out new vocabulary makes students tired and lazy to study English. the student would be happy learning vocabulary with game more than books and dictionary because their imagination, simulation and motivation will be easy to memorizes from students. ${ }^{7}$

The problems need to be solved, in teaching vocabulary there are many methods can be used such as reading books and find new words or difficult words from what the students read about, from pictures, opening the dictionary, and word search puzzle. It is a teaching method with game in relaxation and fun for students. This helps them learn and improve spelling and pronunciations. Byusing word search puzzle method hove students have competence which permanent.

Teaching vocabulary through word search puzzle is not only in written activities and fun so that it would make the students passive learners but also process of the teaching these vocabulary at to be applied in actives in a for of communication the students will be taught how to memorize for a spelling test to do a word search puzzle. Word search puzzle can be desaigned for any

[^3]educational levels, which make them an ideal learning activity for the students. Words search puzzle are puzzle made up of letters in which words spelled vertical, diagonal, or horizontally, the player must find specific word and blackening part of them in puzzle. These puzzle help teach speeding and figure ground hidden in a background of picture or letters.

Based on the theorys of Harmer J and Innayatul Mukarromah that puzzle can improve their vocabulary. in fact, Based on the research was done, Reseacher done the research in SMP Negeri 5 Padangsidimpuan, and the research had been success with value maximum before given the Word Search Puzzle strategy and after giving the Word Search Puzzle strategy to the students.

In this study the researcher will focus on the use of words search puzzle as media in teaching English vocabulary by using puzzle students could build their vocabulary in simple about their surroundings and makes teaching learning process most comfortable to teacher and also students. Based on the explanations above, the writer would like to conduct the research and title The Effect Of Word Search Puzzle To Students' Vocabulary Mastery At Grade VII SMP Negeri 5 Padangsidimpuan In 2014/2015 Academic Year.

## B. Identifications of the Problems

Based on the title and background above, the identification of the problem, which is concern on vocabulary mastery at SMP Negeri 5 Padangsidimpuan. This research only concerns with solving the students vocabulary mastery by applying word search puzzle method in teaching vocabulary mastery.

## C. Limitation of the Problem

The coverage of the variables stated above is so large in the matter of materials, space and time that it is difficult to explore alone. Due to the limitation of the writer in the aspect of ability, time and finance, this research must be limited. Thus, this study is limited to investigate the causal-effect relationship between word search puzzle to students' vocabulary Mastery at grade VII SMP Negeri 5 Padangsidimpuan in 2014/2015 academic year. However, in this case, the researcher focuses on vocabulary mastery in Noun, like; Common Noun, Proper Noun, Countable Noun, Uncountable Noun And Collective Noun.

## D. Formulation of the Problems

Based on the limitation of the Problem, these researcher would formulate the Problem of the research as follow : Is there the significance of used word search puzzle to students vocabulary mastery to the seventh grade students of SMP Negeri 5 Padangsidimpuan.

## E. Purpose of the Research

The purposes of the research is to find out whether there is any significance of students vocabulary mastery after being by used words search puzzle.

## F. Significant of the research

There are some significances of this research below, as follow:

1. To give information to the English teacher about teaching vocabulary in term of using words search puzzle
2. As an input to the teacher in teaching and learning process through word search puzzle methode at Grade VII SMP Negeri 5 Padangsidimpuan. It will give the information to the teacher about their students' vocabulary mastery.
3. For the Headmaster as one domain measurement of teaching progress
4. For The English teacher, to improve their quality in vocabulary mastery.
5. This research is hoped to help the other researcher who will conduct further research in the same topic.

## G. Definition of the Operational Variables

For clear understanding in doing this study, bellows are some variables that are related to the study;

1. Word Search Puzzle

Word search puzzle is puzzle made up of letters in which word are spelled horizontally. Vertically, or diagonally, word search puzzle will have words in the puzzle box it can be used to help the student to improve their vocabularies.

Based on the quotation above, the researcher can take a conclusion about of word search puzzle is, very important to know using some media or method in teaching process. It can help the teachers to explain the material. One kind of the method in teaching vocabulary is using word search puzzle method.

## 2. Vocabulary Mastery

Vocabulary is total number of words that make up language and a list or collection of words arranged in alphabetical order and explained: a dictionary or lexicon, either of a whole language, a single work or author, a branch of science, or the like; a word-book.

## H. Outline of the Thesis

The systematic of this research is divided in to five chapters. Each chapter consists of many chapters with detail as follow;

In chapter one, it consist of background of the thesis problem, identification of the problem, limitation of the problem, formulation of the problem, purpose of the research, significances of the research, and definition of operational variable. This chapter talking about the problems that found in the field of research, the questions of research and the objective of the research.

Next, in chapter two, it consists of theoretical description, conceptual framework, and hypothesis. In Theoretical consist of description of vocabulary and word search puzzle method, it is the consist of research, it is talking about theory of interactive method and theory of vocabulary mastery and the temporary assumption of research.

Furthermore, in chapter three, it was consist of research methodology. This chapter talking about methodology that used by the writer, research
design, the location and schedule of research, the total of population and sample, instrumentation, technique of collecting data, and the last technique for data analysis.

Chapter four is result of the research or research findings which consist of teaching vocabulary mastery in pre test, teaching vocabulary mastery in post test, the hypothesis testing,, discussion, and the treats of the research, this chapter talking about the result of the research.

Finally, chapter five contains conclusion, and suggestion.

## CHAPTER II

## THEORETICAL DESCRIPTION

## A. Vocabulary

## 1. Definition Vocabulary

Vocabulary is one of component for the language where is vocabulary help people to speaking and language in communication it is a part of language that so important to all aspect in life. Thomas Nelson considered that vocabulary is a list of word usually in alphabetical order and with explanation of their meanings less complete than a dictionary. ${ }^{1}$ Then Shirly Burnidge says Vocabulary is all the words in language list of words in lesson or books all the word that one person knows. ${ }^{2}$

Then Homby says Vocabulary is all the words that a person knows or use the words that people use when they are telling about particular subject. ${ }^{3}$ So, vocabulary is all the words that use to speaking, writing and communication, it is all alphabetical in form word to tell all subjects.

According to Jack C. Richard and willy a Renandya said "Vocabulary is a care component of language proficiency and proudest

[^4]much of the basic for how well learners speak, listen, read and write ${ }^{4}$ it means words can be noun, verb, adjectives, adverbs, preposition and conjunction to use language. Then language has some words on vocabulary for speaking, writing, reading and listening.

So, it can be concluded that vocabulary as all words that people know or use and also as the care component of words that is list in the alphabetical order.

## 2. The important of learning vocabulary

Vocabulary was important in learning English, because it is related to other English skills, without having vocabularies someone cannot speak well. Before stepping toward to other language skills such as listening, speaking, reading and writing, one should learn vocabulary first. People cannot use a language without having knowledge about vocabulary of the language, in speaking the word someone choose the word that effect how well she/he understands, in listening vocabulary influence how much someone can express her/his idea.

Robinnest said that without lexicon the major element of meaning carried in language will be missing. ${ }^{5}$ In other word, vocabulary is an

[^5]important thing to make learning of second language successful. According to Nunan has argued that acquisition of a adequate vocabulary is essential for successful second language use because without an extensive vocabulary, people will be unable to use the structures and function people may have learned for comprehensible communication. ${ }^{6}$

So, it means that without vocabulary, learning English language will be not successfully, because it is the most important aspect to use the structures and function for making people or students more comprehensive.

## 3. Kinds of Vocabulary

There are four kinds of vocabulary. These are reading, writing, listening and speaking vocabularies. A vocabulary means both a list of words and the large of words know by any one person. A person's vocabulary develops with age and learning ${ }^{7}$.
a. Reading vocabulary

A person's reading vocabulary is all words he or she can recognize when reading.
b. Listening vocabulary

[^6]A person's listening vocabulary is the words he or she can recognize when listening to speech. This vocabulary is aided in size by context and tone of voice.
c. Writing vocabulary

A person's writing vocabulary is all the words he or she can employ in writing. Contraty to the previous two vocabulary types the writing vocabulary is stimulated by its user.
d. Speaking vocabulary

A person's speaking vocabulary is all the words he or she can use in speech. Due to the spontaneous nature of the speaking vocabulary, word are often miscued, this miscued - though slight and unintentional - may be compensated by facial expression, tone of voice or hand gesture.

According to Haycrapt, vocabulary can be classified into two kinds, they are:
a. Active vocabulary

Active vocabulary is the words which the students linderstands, can pronounce correctly and use constructively in speaking and writing.
b. Passive vocabulary

Passive vocabulary is the words which the students recognizes and understands when they accrue in a context, but which he cannot produce cursedly himself. ${ }^{8}$

Based on quotation above, the writer can take a conclusion about kinds of vocabulary. Active vocabulary refers to the words the students should use in speaking and writing, while passive vocabulary means words they needs only to comprehend especially in reading and listening, vocabulary is very useful for anyone who is studying a foreign language. So, vocabulary must be introduced in many methods, because if the students have many words, they can make the sparkling communication with others.

According to Thornbury in Harmer, there are two kinds of vocabulary, as follows:
a. Receptive vocabulary or passive vocabulary

Receptive vocabulary can be understood only through listening and reading. Someone doesn't need to know much about the receptive vocabulary because someone rarely user the receptive vocabulary and it is impossible for someone to memorize all the vocabularies of a certain language but

[^7]someone can understand the ideal of the utterance contextually not word by word.
b. Productive vocabulary not word by word

Productive vocabulary involves of knowing how to pronounce the word; how to write and spell it, how to use it in correct grammatical patterns a long with the words that usually collocate with. ${ }^{9}$

Based on quotation above, the writer can take a conclusion about receptive or passive vocabulary will be easy to understand by using listening and reading to remember words on vocabularies, while productive or active vocabulary will be easy understand by using concentration patterns and grammatical word to get vocabularies.

## 4. Aspect of Vocabulary

There are some aspects that have to be understood in understanding vocabulary. Wren and Martin ${ }^{10}$ state that words are divided into different kind of classes, called "part of speech", thus part of speech, so from classification above the researcher focused on Noun, like: common noun, proper noun, countable noun, uncountable noun, and collective noun. Below some description about it:
${ }^{10}$ Wren \& Martin, High School English Grammar and Composition, (New Delhi: Ram
a. Noun

Noun is a word used to name a person, place, thing, an idea or a quality of mind is defined as a noun. ${ }^{11}$ Noun is the name of a person, place, or thing. Example: walking in the roads is fun for Irwan. (walking is the name of a thing, roads the name of place and Irwan the name of a person). Noun is one of the parts of speech that are included in vocabulary. Noun is the vocabulary that always the first learn in teaching vocabulary. A noun is a word used as the name of person, place, or thing. ${ }^{12}$ Then, Marcella Frank says "Noun is one of the mast important parts of speech. It is arrangement with the verb help to farm the sentences. In addition it may function as the head word in many structures" ${ }^{13}$.

In addition, noun may function as the chief or head words in many structure of modification. Some noun may belong to more than one of types given below:

According to Jayanti, Noun has eight kinds: they are: ${ }^{14}$

1) Common noun

Common noun is the first types of noun. " Common noun is a name give in common to every person or thing of the same

[^8] 5
class or kind. ${ }^{15}$ It is same with naming of groups. Common noun is a word as a name of same class.
2) Proper noun

Proper noun sometimes used as common noun, but proper noun is the name of some particular person or place. Proper noun is a noun that is beginning of capital word as a name of person, city, country, school, company or another place. ${ }^{16}$ Thus, every names of person or place is called proper noun.
3) Collective Noun

Frank says that "Collective noun is a word for group of people, animals or subjects considered as a single unit. ${ }^{, 17}$ It means that, collective noun is name that be taken together for things or person.
4) Concrete Noun

Concrete noun is a word for a physical object that can be perceived by sense, it can see, touch, smell, the object. ${ }^{18}$ It means that, all of the things that can be seen or touched by person, it is called concrete noun.

[^9]
## 5) Abstract Noun


#### Abstract

In Nugroho's book, abstract noun is noun that could be seen, but it can be imagined. ${ }^{19}$ It can be concluded that abstract noun is the opposite of concrete noun.


6) Countable Noun

According to Dakshina Murthy,"A countable noun is the name of things that can be counted or divided into singular or plural. ${ }^{20}$ It means that, countable noun is noun that may be counted in numbers.

## 7) Uncountable Noun

Differ with countable noun, "An uncountable noun is the name or thing that cannot be counted or divided into singular or plural. ${ }^{21}$ So, an uncountable noun is not used in the plural and cannot be counted.
8) Material Noun

The last type of noun is material noun. "A material noun is the name of material of substance out of which things are made.,"22

So, material noun is things that are made and named by human.

[^10]Table. 1
Example of kinds of Noun ${ }^{23}$

| No. | Kinds of Noun | Example |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Common noun | Boy, woman, girl, men, house, home, etc. |
| $\mathbf{2}$ | Proper Noun | Budi, Rudi, Swiss, Medan, Padang, etc. |
| $\mathbf{3}$ | Collective Noun | Police, army, team, class, committee, etc. |
| $\mathbf{4}$ | Concrete Noun | Sun, moon, star, door, floor, etc. |
| $\mathbf{5}$ | Abstract Noun | Love, death, voice, joy, goodness, etc. |
| $\mathbf{6}$ | Countable Noun | Man, woman, bone, boat, etc. |
| $\mathbf{7}$ | Uncountable Noun | Hair, milk, sugar, tea, coffee, water, air, etc. |
| $\mathbf{8}$ | Material Noun | Gold, paper, silver, steel, etc. |

Based on definition above, noun has eight kinds that appropriate function of noun and category of noun have name or kinds in form common noun. Proper noun, collective noun, concrete noun, abstract noun, countable noun, uncountable noun and material noun, that is all in kinds of nouns; they are vocabularies that use to complete sentences.
b. Adjective

According to Barbara and Dykes, the word "adjective" is from latin ad jocere meaning "throw to" or "add" the characteristics of something. ${ }^{24}$ Adjective is a word used to express the quality.

[^11]Quantity, number and to point out the person or thing is regarded as an adjective, two types of uses adjective: ${ }^{25}$

1) Attribute use

Attribute use is an adjective used with a noun is known a attribute use. Example: tall tree, nice book and clever student. Example: blasé eyes and new book.
2) Predicative use

Predicate use is an adjective use with a verb 15 known as predicative use. Example: she is afraid, he is alive, he looked happy. Example: she is glad and she is dead.

So, adjective is a words use to another word as attribute and predicate that explain quantity, quality and number from character of words. Adjective is also to complete the and combine the meaning of words that difficult to understand.

## c. Pronoun

The word "pronoun" comes from the latin pronomen meaning "for a noun". As the word implies, pronoun are the words that we use in place of nouns. Pronoun is a word used in place of noun is known as a pronoun. Example: I, we, you, they, she, he, it. Kinds of pronouns: Pronouns are divided into eleven kinds:

[^12]| 1) Personal pronoun | 7) Distribute pronoun |
| :--- | :--- |
| 2) Reflexive pronoun | 8) Reciprocal pronoun |
| 3) Emphatic pronoun | 9) Relative pronoun |
| 4) Demonstrative pronoun | 10) Relative compound |
| 5) Indefinite pronoun | 11) Possessive pronoun ${ }^{26}$ |
| 6) Interrogative pronoun |  |

Based on the quotation above, pronoun is substitutes for nouns, personal pronoun, reflective, emphatic, demonstrative, indefinite, interrogative, distributive, reciprocal, relative compound, and possessive are included to be kinds of pronoun.
d. Verb

A verb is a word that tells or asserts something a bout a person or thing, verb is described as a word which is used to indicated an action, a state of being of existence or possession. ${ }^{27}$ Verb is a word to describe action and completely sentence to subject. Verbs are classified according to meaning and use, as follows:

1) Transitive verb

Transitive verb is a verb that denotes an action which passes over from subject to an object.

[^13]2) Intransitive verb

In transitive verb is a verb that denotes an action which does not pass over to an object. ${ }^{28}$
e. Adverb

Adverb is a word which modifies the meaning of a verb, except a noun or pronoun (that being the job of an adjective), adverb is divided into five kinds on the basis of their use:

1) Adverb of time
2) Adverb of place
3) Adverb of manner
4) Interrogative adverbs
5) Comparative
6) Irregular adverbs of comparison ${ }^{29}$

So, an adverb is a word that describe a verb, it tell you about an action, or the way something is done. A lot of adverbs and in -ly. Adverbs ac complete of sentence that make a sentence have good meaning.

[^14]
## B. Word Search Puzzle

## 1. Defenition of word search puzzle

Word search puzzles areagamein the search for the words, eithervertically, horizontally, and diagonally. This game can help students increase their vocabulary and make them happy indoing search puzzle game of words. According to Hornby, puzzle is a thing that is difficult to understand or answer a mystery or a question or toy that is designed to test a person's knowledge, skill, intelligence, etc. ${ }^{30}$

A word search puzzle is a word game that is letters of a word in a grid that usually has a rectangular or square shape. The objective of this puzzle is to find and mark all the words hidden inside the box. The words may be horizontally, vertically or diagonally. Often a list of the hidden words is provided, but more challenging puzzles may let the player figure them out. Many word search games have a theme to which all the hidden words are related. The puzzle itself kind to play that can be used to practice certain language features at certain phases in learning process in order to develop communication skill.

The procedure of teaching vocabulary through the words search puzzle game can be done with the steps relevant ${ }^{31}$, they are:

[^15]a. Teacher prepares worksheets that will be used in teaching and learning,
b. The teacher presents material according to the competency.
c. The teacher distributes a sheet activity according to the example.
d. Learners answer the question then shading the appropriate latter in the answer box. And
e. Provide points on every answer in the box.

These are theories to supporting the word search puzzle as a learning system, are Theory by Harmer, Explains that games give learners a feeling of competition to participle in the process of learning vocabulary and motivaties them to repeat them with enthusiasm. He also maintains that games which depend on an information encourage learners to negotiate with a partner to solve a puzzle, draw a picture, and find similarities. And differenced between the pictures ${ }^{32}$.

Many games or puzzles can improve the students interest to learn about these games and puzzles because many of students felt be bored if they learn vocabulary by seriously ${ }^{33}$

From the explanation above, the researcher concludes that to make Harmer J needed learning situation are funny and enjoyable. Word Search

[^16]Puzzle has learning situation which makes students interest to learn. Therefore, Puzzle is appropriate to apply theory exactly.

## 2. The Advantages and Disadvantages of Word search Puzzle

Models make a good match is used when the teacher wants the students to think of creativity, because through this kind of learning students are expected to able to match the question with an answer that is in the puzzle.

This models or games can help and encourage many learners to sustain their interest and work, games also help the teacher to create context in which langguage is useful and meaningful ${ }^{34}$. Therefore, the advantages and disadvantages of this model are:
a. The advantages of this model are:

1) Can facilitate students in learning teaching materials, obstruction can direct answer in the box.
2) To facilitate teachers in describing teaching materials, teachers obstruction can lead students to the boxes that had been prepared in advance.
3) Can improve student learning activities, because he will continue shading the letter corresponding to the answer.Avoiding boredom children in

[^17]4) learning, because their activity does not make the child sick and tired of following study
b. The Disadvantages of Word Search Puzzle

1) Make a box that varies needcreativities of a teacher.
2) Very often found between the box provided does not match the existing questions.
3) Make questions thet require answer that definitely requires a high capability of teaching. ${ }^{35}$

Based on the explanation above, there are so many benefits of word search puzzle in learning activities. However, there are some disadvantages of word search puzzle. It can be done by creative teacher. It can increase the students' vocabulary mastery. To make word search puzzle in word search puzzle, some roles used the researcher, such as using main concept, sub concept, and lines as a connection between ideas. Therefore, word search puzzle is a good way to learn vocabulary mastery.

## 3. Teaching Vocabulary through Word Search Puzzle

To success in teaching vocabulary through word search puzzle, the teacher should have different technique for different level. Teaching vocabulary through word search puzzle enables the students to find out to information or guests the meaning on unfamiliar words. So, the word

[^18]search puzzle can help the students. The students may be happy and interesting in learning and they always try to know the new words from word search puzzle.

Relating to the importance of teaching vocabulary through word search puzzle, as far as it is know some students are always confused with the problem of through puzzle. In this case, there are many ways to making the students interested in what they are learning the teacher can create a game, which the student can think about new words that related with the topic of word search puzzle. Teaching vocabulary by using word search puzzle make students more relax, enjoyable, happy and the students understanding the material. And also can improve their achievement.

Children without an extensive vocabulary have a hard time understanding what they're reading, especially as they get older and reading material becomes more difficult. To complicate matters, most young readers, including different learners, have a larger spoken vocabulary than a reading vocabulary. ${ }^{36}$

## C. Conventional Strategy

Conventional strategy is the strategy or the way usually used by the teachers to teach the vocabulary to the students. According to Hudson, ${ }^{37}$ that

[^19]conventional strategy is the strategy used by the teachers based on mutual agreement in a school. Based on explanation above, the researcher concluded that conventional strategy is a used to teaching learning materials based on agreement of the schools.

The way of the teacher teach Basic Tenses at SMP Negeri 5 Padangsidimpuan to the Eight class, particularly VII-1 and VII-3 is by the order the students reading the materials about vocabulary at home (homework) and do the exercises of vocabulary (noun). Before that, teacher explains the vocabulary mastery abput noun. Then, the students answer the questions on the paper.

Based on above explanation, the researcher concluded that the procedures used by English teacher at SMP Negeri 5 Padangsidimpuan, especially to VII-1 and VII-3 classes are as follows:

1) Explain the subject matter
2) Describe the subject matter (noun)
3) Answer the questions
4) Give the homework

## D. Review Related Findings

This research is not as beginner in this title but there is the researched had researched before which relevant with title below:

Khoirul Bahri Lubis in his script: the effect of using crossword puzzle in reinforarig activity toward students' vocabulary mastery. He found that
using crossword puzzle in reinforzing activity is very uteful toward the improvement of students. Vocabulary at elementary school with score 69.3 from score vocabulary just 48.50. ${ }^{38}$

Ahmadin Azhar in his script is the effect using media video dora the explorer. He found that studying vocabulary by using media video dora the explorer at SD Negeri 200201 in Padangsidimpuan has a significant, it is proven based on calculation result was gotten from post-test calculation, that mean of experimental class is better than mean of control class that 93.26 is better than $83.04 .{ }^{39}$

Tri Riski Hasibuan in her script is improving students vocabulary mastery through crossword puzzle at SD Muhammadiyah 1 Padangsidimpuan has a significant, based on the result of the classroom action research, it was concluded that crossword puzzle technique improved students' vocabulary mastery at grade VI SD Muhammadiyah 1 Padangsidimpuan. It based on the students' vocabulary mastery mean score which was in cycle 1 were 61.42 and 62.14 became 84.28 and 91.78 in cycle $2 .{ }^{40}$

[^20]So that, from the above description, the researcher concluded that many method can increase students vocabulary mastery. Next, the writer hopes that word search puzzle method can increase the students' vocabulary mastery in word search puzzle, so that the writer interested to make the research about "The effect of word search puzzle to students' vocabulary mastery at grade VII SMP Negeri 5 Padangsidimpuan"

## E. Conceptual Framework

Vocabulary is an important part of language there will be no language aspects which should be learnt. Vocabulary is important part of language to speak, write, and listen without vocabulary will not a language or sentence. So, since we can see, speak, know about we are around will there vocabulary, through game we will find vocabulary or all word of listen, look, and speak, one of games to increase vocabulary is word search puzzle.

Word search puzzle is a game in which you have to fit the words across, down or diagonal. You find the words by solving clues word search puzzle is a puzzle used in English teaching and learning process, it is a table with some random of letters, where the students have to find the words in random letters, students must draw a line on each word across, down or diagonal.

Teaching vocabulary can start from elementary school Junior High School and Senior High School when the students still in optimum grow up.

In teaching vocabulary can be $f$ un with game more than open dictionary and write some words.

Base on the above, conceptual framework can be seen from the figure below:


Based on the figure above the students' problem in this research is low in vocabulary mastery, it can be seen from preliminary study show some of
the students cannot communicate even in simple utterance and increase through word search puzzle to become easy get vocabulary.

## F. Hypothesis

Correlating to the conceptual framework above, the writer concludes that hypothesis must be clearly and testable based on the empirical data, to prove the hypothesis accepted or not, is by consultation to the comparing hypothesis. As the opposite will be accept if the fact supposed the hypothesis are:

1. There is significant effect between word search puzzle methods to students’ vocabulary mastery $\left(\mathrm{H}_{1}\right)$
2. There is no significant effect between word search puzzle method to students vocabulary mastery ( $\mathrm{H}_{0}$ )

## CHAPTER III

## RESEARCH METODOLOGY

## A. The Place and Time of the Research

The research was conducted at SMP Negeri 5 Padangsidimpuan, at Jln. Perintis Kemerdekaan No. 61 Padangsidimpuan. The data were taken as long as 12 month that starting from July 2014 until finish at SMP Negeri 5 Padangsidimpuan.

## B. The Research Design

This research was conducted with quantitative research with Experimental method. L.R Gay Said, "Experimental research is the only type of research that can test hypothesis to establish cause and effect." ${ }^{11}$ And then, cress well says, "Experimental research induced the experiment with the Random assignment of subject to treatment condition as well as, quasi experiment, that we none randomized. ${ }^{2}$ From the definition above, researches conduced that the experiment is a kind of research that has aim to know the casual effect relationship Between one are more variable to other variables.

[^21]
## C. Population and Sample

## a. Population

In conducting the research, certainly needs the population, Suharsimi Arikunto ${ }^{3}$ says that population a set or collection of all elements possessing one or more attributes of interest. According to L.R. Gray and Airasian ${ }^{4}$ says that the population is the classes. Families living in the city or electorate s from which you select your sample. In other words, population is generalization area consist of subject/ object has special quantity and characteristic which determined by researcher to conducing, therefore, population is the group of people that will be taken the sample from them.

The population of this research is English grade in SMP Negeri 5 Padangsidimpuan. It is consisted of twelve classes, the students are limited to whose who belong to class VII SMP Negeri 5 Padangsidimpuan. Therefore, it can be seen the table below:

Table II
The Population of Seventh Grade Students SMP Negeri 5 Padangsidimpuan

| No | Class | Total Students |
| :---: | :---: | :---: |
| 1 | VII-1 | 30 |
| 2 | VII-2 | 27 |
| 3 | VII-3 | 28 |
| 4 | VII-4 | 25 |

[^22]| 5 | VII-5 | 25 |
| :---: | :---: | :---: |
| 6 | VII-6 | 23 |
| 7 | VII-7 | 25 |
| 8 | VII-8 | 25 |
| 9 | VII-9 | 23 |
| 10 | VII-10 | 27 |
| 11 | VII-11 | 28 |
| 12 | VII-12 | 23 |
| Total of Students |  | 306 |

## b. Sample

Sample is preventative whole of population, Suharsimi Arikunto says that sample that sample is chares or proxy from accurate. While in big dictionary of Indonesia, sample is used by example of from the lions hare. While sample is some of amount and characteristics owned by population, as for becoming sample of this research are two class of seventh grade.

In chosing the sample, the researcher used the cluster sampling. Cluster is also referred to as judgment sampling. Sample elements judge to be typical, or representative, are chosen from the population to know whether data of the research has normal population, so, it is using chi-quadrate, as follows:

$$
\mathrm{X}^{2}=\sum\left(\frac{f_{o}-f_{h}}{f_{h}}\right)
$$

Where:

$$
X^{2} \quad \text { : Chi-quadrate }
$$

$\mathrm{F}_{\mathrm{o}}$ :Frequency is gotten from the sample/ result of observation (questionare)
$\mathrm{F}_{\mathrm{h}} \quad$ :Frequency is gotten from the sample as image from frequency is hoped from the population. ${ }^{5}$
ttest use to know whether control class and experimental class have same variant or not. If the both of classes is same, it is can be called homogeneous. To test it, researcher using formula as follow;

$$
\mathrm{F}=\frac{\text { Thebiggestvariant }}{\text { Thesmallestvariant }}
$$

Where:
$n_{1}=$ Total of the data that bigger variant
$n_{2}=$ Total of the data that smaller variant ${ }^{6}$

Based on explanation above, the population the four classes of the students, two classes are selected randomly in order to be on experimental or control group. In this research, the experimental class is VII-10 and control class is VII-11.

There is table of sample that consisted experimental class and control group.

[^23]Table III
Sample of the Research

| Experimental Group | Control Group |
| :---: | :---: |
| VII- $1=30$ | VII-3 $=28$ |

## D. The Instrument of Data Collecting

These are the instrumentations in the research. They are :
Test : Test is the tool why is in the measurement to collect the data in the research, research used vocabulary test which is 25 items essays for filling word search puzzle test. Brown defined test a method of measuring a persons ability : knowledge or performance in a given domain. ${ }^{7}$

The researches use administrating a test, which are essay test. These type can be score objectively and can be measured learning out come directly in this research, the test consists of 25 essay test with 5 opinions to prepare the students vocabulary mastery. The test gives for each student to find out the scores of each students answer. The writer gives 4 scores for each items. This the maximum score of the test is 100 .

[^24]Table IV
Indicators of Vocabulary Mastery

| No | Indicator | Items | Score | Total Score |
| :---: | :--- | :---: | :---: | :---: |
| 1 | Common Noun | 4 |  | 20 |
| 2 | Proper Noun | 4 | 5 Items | 20 |
| 3 | Countable Noun | 4 | $x$ | 20 |
| 4 | Uncountable Noun | 4 | 4 Score | 20 |
| 5 | Collective Noun | 4 |  | 20 |

In collecting the data, the research conducted twice of test for these groups. They are Pre - test and Post- test.

1. Pre - Test

The pre test was conducted to find out the homogeneity of the sample, the function of the pre test was to find the main scores of the interactive strategy class and conventional class before the research gave treatment. In this case, the researcher had some procedures, they were;
a. The researcher prepared the test 25 items
b. The researcher distributed the paper of test to students of experimental class and control class.
c. The researcher explained what the students to do
d. Giving time
e. Collected their paper test to researcher
f. The researcher checked the answer of students and found the mean score of using interactive and conventional strategy.

## 2. Treatment

After giving the pre test, the student given the treatment. The experimental class received the treatment thought by interactive strategy, while the control class taught by conventional strategy.
3. Post - Test

After giving the treatment the researcher conducted the post test which the same test with the pre test, and had been conducted in the previous of the research, this post test was the final test in the research especially measuring the treatment, whether was significant or not, after conducting the post test the researcher analyzed the data, and the researcher found out the effect of word search puzzle in experimental class, the researcher were;
a. The researcher prepared the test 25 items
b. The researcher distributed the paper of test to students of experimental class and control class.
c. The researcher explained what the students to do
d. Giving time
e. Collected their paper test to researcher
f. The researcher checked the answer of students and found the mean score g. of using interactive and conventional strategy.

## E. Validity and Reliability of Instrument

1. Validity of the Test

Validity (in testing) is the degree to which a test measures what it supposed to measure or can be used successfully for the purpose for which it is intended. A number of different statistical procedures generally seek to determine what the test measure and how well it does so. ${ }^{8}$

Table. V
Test of Specification

| Objectives | Indicator | N | Type of the Test |
| :--- | :--- | :---: | :--- |
| The student <br> Comprehend the <br> words related <br> structure of <br> Noun | The student are able <br> to fill the blanks <br> boxes with the words <br> related the structure <br> of Noun | $1-20$ | Fill the blank with <br> essay to complete <br> the sentences. |

There are many kinds of validity, are:
a. Content Validity
b. Predictive Validity
c. Construct Validity

Based on the explanation above, the researcher using content validity, where content validity establishes how well a test compares to the real world. For example, a school test of ability should reflect what is actually taught in the classroom. When a test has content validity, the items

[^25]on the test represent the entire range of possible items the test should cover. Individual test questions may be drawn from a large pool of items that cover a broad range of topics.

In this research, the researcher used content validity to establish the validity of the instrument. To know the validity of the items, researcher would use the correlation biserial formula:
$\mathrm{r}_{\mathrm{pbi}}=\frac{M p-M t}{S D_{t}} \sqrt{\frac{p}{q}}$
Where:
$\mathrm{r}_{\mathrm{pbi}}=$ Number of index Correlation Point Biserial
$\mathrm{Mp}=$ average of the score of the students answer correctly
Mt =average of the total score that achieved success by member of the test
$\mathrm{SD}_{\mathrm{t}}=$ Standard of Deviation
P = Proposition of the students answer correctly

$$
p=\frac{\text { Total of thestudents who answer correctly }}{\text { Tota lof thestudents }}
$$

$\mathrm{q}=$ Proposition of the incorrect answer students

$$
q=1-p^{9}
$$

From the result of the analysis 25 instrument test, where 25 for pretest. researcher concluded that for pre-test only 20are categorized valid and

[^26]5are categorized invalid. So, researcher conducted 20 items for control class and 20 items for experiment class.

Result try out for pre-test calculation by using the correlation point biserial formula is determined if $r_{p b i}>r_{\text {table }}$ with significant level $5 \%$ with table r product moment, so that the items is tested valid. From the result of calculation was gotten 20 valid items are given to the students, there are: 1 , $2,3,6,8,9,10,11,12,13,14,15,16,18,19,21,23,24,25$, while for invalid items, there are: $4,5,7,20,22$. The high validity is for item number eighteen with $r_{p b i} 0.939$ and low validity is for number twenty two with $r_{p b i}$ 0.106 .

Result of calculation by coefficient of correlation biserial is determined if $\mathrm{r}_{\mathrm{pbi}}>\mathrm{r}_{\text {table }}$ with the significant level $5 \%$ (0.05) with the table $r$ product moment. So that, the items is tested valid.

1. Difficulty level of items

To find out the difficulty level of items, the researcher used formula as follows:

$$
p=\frac{B}{J S}
$$

Where:
P = Difficulty level
$\mathrm{B}=$ The students who has correct answer
$\mathrm{JS}=$ Total of the students who answer the items

The result of the difficulty of the test based on these criteria:
$0.00 \leq \mathrm{P}<0.30$
Difficult items
$0.31 \leq \mathrm{P}<0.69$
Medium items
$0.70 \leq \mathrm{P}<1.00$
Easy items ${ }^{10}$
2. Reliability of the Test

The instrument is said reliable when the instrument believable to use as a tool of collecting data because the instrument is good. In this research, the writer uses internal consistency reliability. Internal consistency is done with trying the instrument just in one time and the result can be used to predict the instrument reliable or not. ${ }^{11}$

Testing of instrument reliability could be done with the technique of KR. 20(Kurder Richardson) formula, as follow:

$$
r_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S t^{2}-\sum p q}{S t^{2}}\right)
$$

Where:
$\mathrm{r}_{11} \quad=$ Reliability of the test
$\sum p q=$ Total of the result times $p$ and $q$
$\mathrm{p} \quad=$ Proposition of the students who answer correctly
$\mathrm{q} \quad=$ Proposition of the students who answer incorrect
$\mathrm{n} \quad=$ Total of the items
$\mathrm{S}_{\mathrm{t}} \quad=$ Standard Deviation of the test

[^27]Result of calculation the reliability of the items ( $\mathrm{r}_{11}$ ) is determined whether $\mathrm{r}_{11}>\mathrm{r}_{\text {table }}$ with the significant level $5 \%(0.05)$ with the table r product moment. So that, the items is reliable.

Criteria of reliability of the test, as follows:

| $<0.20$ | very low |
| :--- | :--- |
| $0.20-0.40$ | low |
| $0.41-0.70$ | enough |
| $0.71-0.90$ | high |
| $0.91-1.00$ | very high ${ }^{12}$ |

## F. Technique for Analyzing the Data

To analyze the data, the researcher use " $t$ " test. Anas Sudjiono said " t " test was one of statistic examine which be used in comparative research which done comparing between two variable, that is: Is there compare siqnificant two variable. ${ }^{13}$ After, the researcher got the data, it will be enter in frequency table with the formula as follows:

The formula of test " $t$ " is as follws:

$$
t=\frac{\overline{x_{1}}-\overline{x_{2}}}{\sqrt[s]{\frac{1}{n_{1}}+\frac{1}{n_{2}}}}
$$

[^28] 258.

Where:

$$
\begin{array}{ll}
\overline{x_{1}} & =\text { Mean of experimental class sample } \\
\overline{x_{2}} & =\text { Mean of control class sample } \\
n_{1} & =\text { Total of experimental class sample } \\
n_{2} & =\text { Total of control class sample }
\end{array}
$$

and the formula of standard deviation was:

$$
s=\sqrt{\frac{\left(n_{1}-1\right) s_{1}^{2}+\left(n_{2}-1\right) s_{2}^{2}}{n_{1}+n_{2}-2}}
$$

Where:

$$
\begin{array}{ll}
\mathrm{s} & =\text { Variant } \\
\mathrm{s}_{1}{ }^{2} & =\text { Variant of experimental class } \\
\mathrm{s}_{2}{ }^{2} & =\text { Variant of control class }^{15}
\end{array}
$$

To test criteria of hypothesis is if $\mathrm{H}_{0}$ is accepted by $-t_{\text {table }}<t_{\text {count }}<t_{\text {table }}$ By
opportunity $\left(1-\frac{1}{2} \alpha\right)$ and $\mathrm{dk}=\left(\mathrm{n}_{1}+\mathrm{n}_{2}-2\right)$ and $\mathrm{H}_{\mathrm{o}}$ was rejected if there was t has the other results.

[^29]
## CHAPTER IV

## DESCRIPTION OF THE DATA AND DISCUSSION

## A. Description of the Data

To evaluate the result of teaching writing by using Group work strategy on students' achievement in writing recount text, researcher has calculated the data by pre-test and post-test. Applying quantitative analysis, researcher used the formulation of $t$-test. Next, researcher described the data as follow:

## 1. Description data of Pre-Test

The pre-test scores obtained before teaching in experimental class and control class is as follow:
a. Experimental Class

The score of pre- test in experimental class before teaching is as follow:

Table V
The Score of Pre- Test in Experimental Class

| Total of <br> score | The <br> highest | The <br> lowest | Mean | Standard <br> deviation | Median | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1670 | 70 | 25 | 37,52 | 12,53 | 52,5 | 35 |

Based on the table above shown that sum of score in experimental class was 1670 , mean was 37,52 , mode was 35 , median was 52,5 , researcher got the highest score was 70 and the lowest score was 25 , and the last standard
deviation was 12,53 . Next, the calculation of how to get it can be seen in the appendix 7.

From distributing of the variable data of the test result of students' achievement in writing recount text can be seen to the table and histogram of experimental class in pre-test as follow:

Table VI
The Frequency Distribution of Students' Score in Experimental Class

| No. | Interval | F | $\%$ |
| :---: | :---: | :---: | :---: |
| 1. | $25-31$ | 4 | $11.11 \%$ |
| 2. | $32-38$ | 7 | $19,44 \%$ |
| 3. | $39-45$ | 9 | $25 \%$ |
| 4. | $46-52$ | 5 | $13,88 \%$ |
| 5. | $53-59$ | 2 | $5,55 \%$ |
| 6. | $60-66$ | 7 | $19,44 \%$ |
| 7. | $67-73$ | 2 | $5,55 \%$ |
| Total |  | 36 | $100 \%$ |

From the table above, the students score that is there in class interval between $25-31$ was 4 students (11.11\%), class interval $32-38$ was 7 students (19.44\%), class interval $39-45$ was 9 students (25\%), class interval 46-52 was 5 students ( $39.88 \%$ ), class interval $53-59$ was 2 students ( $5.55 \%$ ), class interval $60-66$ was 7 students (19.44\%), the last class interval $67-73$ was 2 students (5.55\%).

By visual, distributing of the data can be described to histogram form, as follow:


Figure 1: The histogram of students' score of experimental class
Based on result of the test students' achievement in writing recount text, researcher found that mean score of students in the experimental class by using group work strategy is 37,52 . Highest score is 70 and smallest score is 25 .
b. Control Class

The score of pre- test in control class before teaching is as follow:

Table VII
The Score of Pre- Test in Control Class

| Total of <br> score | The <br> highest | The <br> lowest | Mean | Standard <br> deviation | Median | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2185 | 80 | 35 | 45,91 | 11,13 | 66 | 70 |

Based on the table sum of score in control class was 2185 , mean was 45,91 , mode was 70 , median was 66 , researcher got the highest score was 80 and the lowest score was 35 , and the last standard deviation was 111.30 . Next, the calculation of how to get it can be seen in the appendix 8 .

Table VIII
The Frequency Distribution of Students' Score in Control Class

| No. | Interval | F | $\%$ |
| :---: | :---: | :---: | :---: |
| 1. | $35-41$ | 9 | $23,07 \%$ |
| 2. | $42-48$ | - | - |
| 3. | $49-55$ | 12 | $30,76 \%$ |
| 4. | $56-62$ | 5 | $12,82 \%$ |
| 5. | $63-69$ | 2 | $5,12 \%$ |
| 6. | $70-76$ | 10 | $25,64 \%$ |
| 7 | $77-83$ | 1 | $2,56 \%$ |
| Total |  | 39 | $100 \%$ |

Based on the table, it can be drawn at histogram as below:


Figure 2: The histogram of students' score of control class

From the above table, the researcher concluded the students' achievement before using group work strategy was low. It was improved by the means score of experimental group class 37.52 and control class was 45.91

## 2. Description Data of Post Test

The post test scores obtained in experimental class and control class are:
a. Experimental class

The score of post test in experimental class after teaching is as follow:
Table IX
The Score of Post- Test in Experimental Class

| Total of <br> score | The <br> highest | The <br> lowest | Mean | Standard <br> deviation | Median | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2035 | 85 | 30 | 47,77 | 11,52 | 115 | 50 |

Based on the table sum of score in experimental class was 2035, mean was 47,77 , mode was 50 , median was 115 , researcher got the highest score was 85 and the lowest score was 30 , and the last standard deviation was 11,52. Next, the calculation of how to get it can be seen in the appendix 9. Then, the computed of the frequency distribution of the students' score in post test of group can be applied in to table frequency distribution as follows:

Table X
The Frequency Distribution of Students' Score in Experimental Class

| No. | Interval | F | $\%$ |
| :---: | :---: | :---: | :---: |
| 1. | $30-38$ | 3 | $8,33 \%$ |
| 2. | $39-47$ | 2 | $5,55 \%$ |
| 3. | $48-56$ | 15 | $41,66 \%$ |
| 4. | $57-65$ | 11 | $30,55 \%$ |


| 5. | $66-74$ | 2 | $5,55 \%$ |
| :---: | :---: | :---: | :---: |
| 6. | $75-83$ | 2 | $5,55 \%$ |
| 7 | $84-92$ | 1 | $2,77 \%$ |
| Total |  | 36 | $100 \%$ |

Based on the table, it can be drawn at histogram as below:


Figure 3: The histogram of students' score of experimental class
b. Control class

The score of post- test in control class after teaching is as follow:
Table XI
The Score of Post- Test in Control Class

| Total of <br> score | The <br> highest | The <br> lowest | Mean | Standard <br> deviation | Median | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2215 | 80 | 40 | 43,21 | 10,29 | 63,2 | 50 |

Based on the table sum of score in experimental class was 2215, mean was 43,21 , mode was 50 , median was 63,2 , researcher got the highest score
was 85 and the lowest score was 60 , and the last standard deviation was 148.10. Next, the calculation of how to get it can be seen in the appendix 10 . Then, the computed of the frequency distribution of the student's score in post-test can be applied in to table frequency distribution as follows:

Table XII
The Frequency Distribution of Students' Score in Control Class

| No. | Interval | F | $\%$ |
| :---: | :---: | :---: | :---: |
| 1. | $40-46$ | 4 | $10,25 \%$ |
| 2. | $47-53$ | 14 | $35,89 \%$ |
| 3. | $54-60$ | 10 | $25,64 \%$ |
| 4. | $61-67$ | 4 | $10,25 \%$ |
| 5. | $68-74$ | 4 | $10,25 \%$ |
| 6. | $75-81$ | 3 | $7,69 \%$ |
| Total |  |  |  |

Based on the table, it can be drawn at histogram as below:


Figure 4: The histogram of students' score of control class

Next, from calculation above the researcher concluded the students' skill after teaching by using group work strategy was increase quickly. It can be seen
from the mean score of experimental class was bigger than control class (47.77 > 43.21).

## 3. Hypothesis Test of Pre Test

a. Normality

Testing normality of distribution of two group used the chisquared test. Normality test is used to determine the normality of the experimental class and control class. The data obtained from the average of pre test score in experimental class and control class can be seen in the following table:

| Class | $\mathrm{X}_{\text {count }}$ | $\mathrm{X}_{\text {table }}$ |
| :--- | :---: | :---: |
| Experimental | 9,45 | 9,48 |
| Control | 2,16 | 9,48 |

From the table above it is explained that experimental class and control class distributed normal. Next, the calculation of how to get it can be seen in the appendix 7 and 8 .
b. Homogeneity

Homogeneity test is intended to determine whether the scores of the samples have the same varience (homogeneous).

| Distribution | $\mathrm{F}_{\text {count }}$ | $\mathrm{F}_{\text {table }}$ |
| :--- | :---: | :---: |
| Homogeneity test | 1,08 | 1,76 |

Based on the table above described that $\mathrm{F}_{\text {count }}<\mathrm{F}_{\text {table }}$ it can be seen in the calculation that explain $1,08<1,76$. It's mean that both of classes
have the same variant. Next, the calculation of how to get it can be seen in appendix 11.
c. Test of Equality Two Mean

Analysis of the data used is $t$ - test test the hypothesis.

| Distribution | $\mathrm{t}_{\text {count }}$ | $\mathrm{t}_{\text {table }}$ |
| :---: | :---: | :---: |
| Equality two mean | $-10,35$ | 1,66 |

Based on the calculation of pre test above it is concluded that the samples are distributed normal, homogeneous. It means that the two classes in this study begin from the same situation. Next, the calculation of how to get it can be seen in appendix 13 .

## 4. Hypothesis Test of Post Test

## a. Requirement Test

1. Normality

Testing normality of distribution of two group used the chisquared test. Normality test is used to determine the normality of the experimental class and control class. The data obtained from the average of post test score in experimental class and control class can be seen in the following table:

| Class | $\mathrm{X}_{\text {count }}^{2}$ | $\mathrm{X}_{\text {table }}$ |
| :--- | :---: | :---: |
| Experimental | 6,76 | 12,59 |
| Control | 8,44 | 9,48 |

From the table above it is explained that experimental class and control class distributed normal. Next, the calculation of how to get it can be seen in the appendix 9 and 10.
2. Homogeneity

Homogeneity test is intended to determine whether the scores of the samples have the same varience (homogeneous).

| Distribution | $\mathrm{F}_{\text {count }}$ | $\mathrm{F}_{\text {table }}$ |
| :--- | :---: | :---: |
| Homogeneity test | 1,42 | 1,76 |

Based on the table above described that $\mathrm{F}_{\text {count }}<\mathrm{F}_{\text {table }}$ it can be seen in the calculation that explain $1,42<1,76$. It's mean that both of classes have the same variant. Next, the calculation of how to get it can be seen in appendix 12.

## b. Testing of hypothesis

Before make the hypotheses researcher made the formulation of the problem before, the formulation of the problem was "is there the effect of group work strategy on students' achievement in writing recount text at VIII grade in MTs N 1 Padangsidimpuan?". Next, the hypotheses of the research was "there is the effect of group work strategy on students' achievement in writing recount text at VIII grade in MTs N 1 Padangsidimpuan".

Then, researcher have criteria of the test hypotheses, if $\mathrm{t}_{0}>\mathrm{t}_{\mathrm{t}}$ null hypotheses $\left(\mathrm{H}_{0}\right)$ is rejected the alternative Hypotheses $\left(\mathrm{H}_{\mathrm{a}}\right)$ is accepted. In
turn if $t_{0}<t_{t}$ the alternative hypotheses $\left(H_{a}\right)$ is rejected and null hypotheses $\left(\mathrm{H}_{0}\right)$ is accepted, it means that the hypotheses of research is rejected. Based on the data collected, the data will be analyzed to prove hypothesis by using formula of $t$-test.

The degree of freedom (df) is $=n_{1}+n_{2}-2$. The total of students in every classes are 36 in class VIII-6 and 39 in class VIII-7. So, df $=$ $36+39=75$, from the percentage points of the $t$ distribution can be seen that the table of significant get point 6,97 . After the data calculated the researcher got $t_{0}$ is 1,66 whereas $t_{t}$ was 1.66 . It shown that $t_{0}$ is bigger than $t_{t}(6,97>1,66)$.So, the hypotheses null $\left(H_{0}\right)$ is rejected and the alternative hypotheses $\left(\mathrm{H}_{\mathrm{a}}\right)$ is accepted. In conclusion, there was the effect of group work strategy on students' achievement in writing recount text at grade VIII In MTs N 1 Padangsidimpuan.

It means that the hypotheses of research is accepted and there is good effect of group work strategy on students' achievement in writing recount text at grade VIII In MTs N 1 Padangsidimpuan. It is said because there are different between score of students' writing recount text in experimental class and control class. The score in experimental class was bigger than control class.

The students' writing recount text in experimental class is better than control class. It can be seen from mean score in experimental class was 47.77 and mean score in control class was 43.21 . From the
calculation above the researcher concluded the students' achievement after teaching by using group work strategy was increase quickly.

## B. Discussion

Based on the theory and related findings, the researcher discuss what that was found. First, Abuddin Nata ${ }^{1}$ says that "behavioristics theory assumption that learning is capacity to form stimulus response relation as much as possible". It means that, by much stimulus that is given to students so will much more the students' response in teaching learning process. So, the application of group work strategy a long writing activity will improve the students' stimulus and response and will result good in writing ability.

Second, in the research with title is "A Comparative between Contextual Teaching Learning and Discussion Method in Teaching Writing recount Text at IX Grade Students of MTs. Muhammadiyah 22 Padangsidimpuan in 2010/2011 Academic Year. ${ }^{2}$ The result of teaching writing procedure text by using discussion method learning is better than contextual teaching. It means, writing recount text by using group work strategy will help the students to easier to understand.

Therefore, the researcher found the students writing recount text before using group work strategy is lower than the students writing recount text after

[^30]using group work strategy. It can be seen from last score of the calculation above indicated $t_{0}>t_{t}(6,97>1,66)$.and also from mean score between the experimental group and control group, it is indicated that the score of experimental group was bigger than control group ( $47,77>43,21$ ). Finally, researcher can conclude that the hypotheses was accepted and there was the effect of using group work strategy on students writing recount text.

## C. Threats of the Research

The researcher found the threat of this research as follow:

1. The students needed more time for answering the test.
2. The students were noisy when answering the test.
3. The limited of the instrument of research.
4. The limited of English books (especially reading book) in the writer's campus.
5. The researcher was lack of experience in processing data or lack of knowledge about it.

## CHAPTER V

## CONCLUSION AND SUGGESTION

## A. Conclusion

Based on the result of data analyzed as follows; The Students' vocabulary mastery at grade VII SMP Negeri 5 Padangsidimpuan was 61.5 . The Students' vocabulary mastery in experimental class at grade VII SMP Negeri 5 Padangsidimpuan was 80.95 . There was the effect of word search puzzle to students' vocabulary mastery at grade seventh SMP Negeri 5 Padangsidimpuan.

Hypothesis alternative $\left(\mathrm{H}^{a}\right)$ was accepted. It could be seen from the mean score of experimental and control class ( $80.95>75.85$ ) compared with the mean score in pre-test $(61.5>60.70)$, and hypothesis zero $\left(H_{0}\right)$ was rejected with $t_{0}>t_{t}$ ( $6.98>2.021$ ). So, the word search puzzle strategy also was an effective and efficient strategy and can improve the students' vocabulary mastery. It means that there is significances effect of using word search puzzle to students' vocabulary mastery at seventh grade 2014/2015 academic year SMP Negeri 5 Padangsidimpuan.

## B. Suggestion

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

1. The Principal of SMP Negeri 5 Padangsidimpuan,to motivate the teacher, especially English teachers to teach as well as possible by maximizing the using of word search puzzle Strategy in teaching, because through this research, it was significantly proven that this strategy increased the students' vocabulary mastery.
2. The English teacher, to increase the students' ability in learning English, especially in increasing the students' ability in vocabulary mastery. One of the efficient and effective strategies that can increase vocabulary mastery was through word search puzzle strategy. Other researcher, the findings of this research were subject matters which can be developed largely and deeply by adding other variables or enlarge the samples.

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## CURRICULUM VITAE

## A. Identity

Name : Desy Afridah Lubis
Reg. Number : 103400044
Place and Birthday : Padangsidimpuan, $26^{\text {nd }}$ September 1992
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## B. Parents

Fathers' Name : Samsul Lubis
Mothers' Name : Masdelila Nasution

## C. Education Background

1. Graduated from Elementary school in SD Negeri 200211 Padangsidimpuan from 1998-2004.
2. Graduated from Junior High School (SMPN 8) Padangsidimpuan from 2004-2007.
3. Graduated from Senior High School (SMAN 3) Padangsidimpuan from 2007-2010.
4. Be University Student in English Bachelor of IAIN Padangsidimpuan.

## Appendix 1

## RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

| Nama Sekolah | SMP Negeri 5 Padangsidimpuan |
| :---: | :---: |
| Mata Pelajaran | : Bahasa Inggris |
| Kelas/ Semester | : VII/ II |
| Standar Kompetensi | : Berkomunikasi secara lisan dan tulisan dengan menggunakan ragam bahasa yang esuai dengan lancar dan akurat dalam wacana interaksional dan monolog terutama dalam wacana |
| Kompetensi Dasar | : Menanggapi instruksi yang sangat sederhana dengan tindakan yang dapat diterima baik di dalam kelas dan di luar kelas. |
| Indikator | : 1. Memahami maksud dan penggunaan word search puzzles dan noun (kata benda) <br> 2. Memahami dan menguasai penggunaan vocabulary di dalam metode wordsearch puzzle. |
| Alokasi Waktu | : $2 \times 45$ menit |
| Tujuan Pembelajaran | melalui bimbingan dari guru dan penjelasan dari gambar, siswa dapat menggunakan word search puzzle dan vocabulary secara tepat. |
| Materi Ajar | : Vocabulary (common Noun, Proper Noun, countable noun, dan uncountable noun) |
| Metode Pembelajaran | : Word search puzzle dan presentasi |
| Langkah-Langkah Pembelajaran : |  |
| 1. Pra-kegiatan (5 Menit) |  |
| a. Memberi Salam |  |
| b. Pengkondisian kelas |  |
| c. Berdo'a |  |

2. Kegiatan Awal (10 Menit)
a. Guru melakukan apersepsi dengan mengajukan sejumlah pertanyaan, seperti:

- How are you today?
- What are we doing now?
b. Siswa diinformasikan tentang tujuan pembelajaran pada hari ini dan menuliskan judul materi "vocabulary dan word search puzzles"

3. Kegiatan Inti ( 65 Menit)
a. Ekspolorasi (5 Menit)

- Guru menempelkan gambar kumpuln materi vocabulary dan word search puzzle di papan tulis
- Guru menjelaskan pengertian, tujuan dan penggunaan vocabulary dan word search puzzle
- Guru menjelaskan kegiatan yang akan dilakukan siswa, yaitu menuliskan contoh dari common noun, dan proper noun.
b. Elaborasi ( 55 Menit)
- Guru memberikan contoh dari Noun (common, dan proper noun)
- Siswa memahami pengertian dan menuliskan contoh sesuai dengan penjelaan
- Guru memanggil beberapa siswa ke depan dan mengintruksikan untuk menjelaskan kembali dan memberikan contoh lain.
- Guru bersama siswa menanggapi presentasi yang dilakukan setelah presentasi, guru mengkondisikaikan kelas untuk memeriksa tugas mereka secara bersamaan.
- Guru menjelaskan kembali pelajaran dengan qord search puzzle.
c. Konfirmasi (5 Menit)
- Siswa diberi umpan balik atas kegiatan hari ini
- Setiap sisw mendapat penilaian secara individu

4. Kegiatan Akhir (5 Menit)
a. Pemantapan materi yang telah dipelajari
b. Siswa dibimbing guru untuk menyimpulkan hasil pelajaran
c. Sisw dievaluasi

Sumber Belajar : Buku Kelas VII

Penilaian:

| Indikator Pencapaian <br> Kompetensi | Teknik <br> Penilaian | Bentuk <br> Instrumen | Instrument/ soal |
| :--- | :---: | :---: | :---: |
| Menggunakan word <br> search puzzle dan <br> vocabulary dengan <br> tepat | Tes tulis | Tugas individu | 1. Tempat yang <br> digunakan untuk <br> duduk |
|  |  | 2. orangtua dari ke 2 <br> orangtua kita $\ldots$ <br> orang yang telah |  |
| melahirkan kita . . |  |  |  |

Padangsidimpuan, Mei 2015
Researcher,

Desi Afridah Lubis
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## RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

| Nama Sekolah | SMP Negeri 5 Padangsidimpuan |
| :---: | :---: |
| Mata Pelajaran | Bahasa Inggris |
| Kelas/ Semester | VII/ II |
| Standar Kompetensi | Berkomunikasi secara lisan dan tulisan dengan menggunakan ragam bahasa yang esuai dengan lancar dan akurat dalam wacana interaksional dan monolog terutama dalam wacana |
| Kompetensi Dasar | Menanggapi instruksi yang sangat sederhana dengan tindakan yang dapat diterima baik di dalam kelas dan di luar kelas. |
| Indikator | : 1. Memahami maksud dan penggunaan word search puzzles dan noun (kata benda) <br> 2. Memahami dan menguasai penggunaan vocabulary di dalam metode wordsearch puzzle. |
| Alokasi Waktu | $2 \times 45$ menit |
| Tujuan Pembelajaran | : Melalui bimbingan dari guru dan penjelasan dari gambar, siswa dapat menggunakan word search puzzle dan vocabulary secara tepat. |

Materi Ajar : Vocabulary (common noun, proper noun, contable noun dan countable noun)

Metode Pembelajaran : Word search puzzle dan presentasi

## Langkah-Langkah Pembelajaran :

1. Pra-kegiatan (5 Menit)
a. Memberi Salam
b. Pengkondisian kelas
c. Berdo'a
2. Kegiatan Awal (10 Menit)
a. Guru melakukan apersepsi dengan mengajukan sejumlah pertanyaan, seperti:

- How are you today?
- What are we doing now?
b. Siswa diinformasikan tentang tujuan pembelajaran pada hari ini dan menuliskan judul materi "vocabulary dan word search puzzles"

3. Kegiatan Inti ( 65 Menit)
a. Ekspolorasi (5 Menit)

- Guru menempelkan gambar kumpuln materi vocabulary dan word search puzzle di papan tulis
- Guru menjelaskan pengertian, tujuan dan penggunaan vocabulary dan word search puzzle
- Guru menjelaskan kegiatan yang akan dilakukan siswa, yaitu menuliskan contoh dari contable noun dan uncountable noun.
b. Elaborasi (55 Menit)
- Guru memberikan contoh dari Noun (common, dan proper noun)
- Siswa memahami pengertian dan menuliskan contoh sesuai dengan penjelaan
- Guru memanggil beberapa siswa ke depan dan mengintruksikan untuk menjelaskan kembali dan memberikan contoh lain.
- Guru bersama siswa menanggapi presentasi yang dilakukan setelah presentasi, guru mengkondisikaikan kelas untuk memeriksa tugas mereka secara bersamaan.
- Guru menjelaskan kembali pelajaran dengan qord search puzzle.
c. Konfirmasi (5 Menit)
- Siswa diberi umpan balik atas kegiatan hari ini
- Setiap sisw mendapat penilaian secara individu

4. Kegiatan Akhir (5 Menit)
a. Pemantapan materi yang telah dipelajari
b. Siswa dibimbing guru untuk menyimpulkan hasil pelajaran
c. Sisw dievaluasi

Sumber Belajar : Buku Teks Kelas VII
Penilaian:

| Indikator Pencapaian <br> Kompetensi | Teknik <br> Penilaian | Bentuk <br> Instrumen | Instrument/ soal |
| :--- | :---: | :---: | :---: |
| Menggunakan word <br> search puzzle dan <br> vocabulary dengan <br> tepat | Tes tulis | Tugas individu | Use the countable <br> noun, uncountable <br> noun, proper noun, <br> and commmon noun. <br> 1. Organ tubuh untuk <br> melihat adalah... |
|  |  |  | 2. Tempat makan <br> umum ... |
|  |  |  | 3. Tempat menuntut <br> ilmu... |

Padangsidimpuan, Mei 2015
Researcher,

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## Appendix: 2

# RENCANA PELAKSANAAN PEMBELAJARAN 

(RPP)

| Nama Sekolah | SMP Negeri 5 Padangsidimpuan |
| :---: | :---: |
| Mata Pelajaran | Bahasa Inggris |
| Kelas/ Semester | VII/ II |
| Standar Kompetensi | Berkomunikasi secara lisan dan tulisan dengan menggunakan ragam bahasa yang sesuai dengan lancar dan akurat dalam wacana interaksional dan monolog terutama dalam wacana |
| Kompetensi Dasar | Memahami wcana transaksional dn interpersonal erta monolog lisan terutama yang berbentuk teks sederhana, dapat diterima di dalam dan di luar kelas. |
| Indikator | 1. Memahami maksud dan penggunaan word search puzzles dan noun (kata benda) |

Alokasi Waktu $: 2$ x 45 menit
Tujuan Pembelajaran : Melalui bimbingan dari guru dan penjelasan dari gambar, siswa dapat menggunakan word search puzzle dan vocabulary secara tepat.
Materi Ajar : Vocabulary (common noun, proper noun, contable noun and uncountable noun)
Metode Pembelajaran : Conventional Strategy
Langkah-Langkah Pembelajaran :

1. Pra-kegiatan (5 Menit)
a. Memberi Salam
b. Pengkondisian kelas
c. Berdo'a
2. Kegiatan Awal (10 Menit)
a. Guru melakukan apersepsi dengan mengajukan sejumlah pertanyaan, seperti: What is this?
b. Siswa diinformasikan tentang tujuan pembelajaran hari ini dan menuliskan judul materi "countable dan uncountable noun"
3. Kegiatan Inti ( 65 Menit)
a. Ekspolorasi (5 Menit)
4. Guru menempelkan gambar kumpuln materi vocabulary dan word search puzzle di papan tulis
5. Guru menjelaskan pengertian, tujuan dan penggunaan vocabulary dan word search puzzle
6. Guru menjelaskan kegiatan yang akan dilakukan siswa, yaitu menuliskan contoh dari contable noun dan uncountable noun.
b. Elaborasi (55 Menit)
7. Guru menuliskan materi di papan tulis
8. Siswa memahami materi dan menuliskan contoh yang sesuai dengan penjelasan
9. Guru memberi latihan kepada siswa tentang penggunaan countble and uncantable noun
10. Guru dan siswa sama-sama memeriksa hasil kerja siswa
c. Konfirmasi (5 Menit)
11. Siswa diberi umpan balik atas kegiatan hari ini
12. Setiap siswa mendapat penilaian secara individu
13. Kegiatan Akhir (5 Menit)
a. Pemantapan materi yang telah dipelajari
b. Siswa dibimbing guru untuk menyimpulkan hasil pelajaran
c. Siswa dievaluasi

Sumber Belajar : Buku Teks Kelas VII
Penilaian:

| Indikator Pencapaian <br> Kompetensi | Teknik <br> Penilaian | Bentuk <br> Instrumen | Instrument/ soal |
| :--- | :---: | :---: | :--- |
| Menggunakan <br> countable dan <br> uncountable noun | Tes tulis | Tugas individu | Complete the <br> sentecne! |
|  |  | 1. Tempat kita <br> menulis . <br> 2. Hiburan yang <br> paling kita sukai |  |

Padangsidimpuan, Mei 2015
Researcher,

## Desi Afridah Lubis

NIM. 103400044

Guru Bahasa Inggris
Kepala Sekolah SMP N 5 Psp

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## Drs. M. Idris

NIP. 195706251983031004

# RENCANA PELAKSANAAN PEMBELAJARAN 

(RPP)

| Nama Sekolah | SMP Negeri 5 Padangsidimpuan |
| :---: | :---: |
| Mata Pelajaran | : Bahasa Inggris |
| Kelas/ Semester | VII/ II |
| Standar Kompetensi | Berkomunikasi secara lisan dan tulisan dengan menggunakan ragam bahasa yang sesuai dengan lancar dan akurat dalam wacana interaksional dan monolog terutama dalam wacana |
| Kompetensi Dasar | Memahami wcana transaksional dn interpersonal erta monolog lisan terutama yang berbentuk teks sederhana, dapat diterima di dalam dan di luar kelas. |
| Indikator | 1. Memahami maksud dan penggunaan word search puzzles dan noun (kata benda) <br> 2. Memahami dan menguasai penggunaan vocabulary di dalam metode wordsearch puzzle. |
| Alokasi Waktu | : $2 \times 45$ menit |
| Tujuan Pembelajaran | Melalui bimbingan dari guru dan penjelasan dari gambar, siswa dapat menggunakan word search puzzle dan vocabulary secara tepat. |
| Materi Ajar | Vocabulary (proper noun, common noun, contable noun and uncountable noun) |
| Metode Pembelajaran | Conventional Strategy |
| Langkah-Langkah Pembelajaran : |  |
| 1. Pra-kegiatan (5 Menit) |  |
| a. Memberi Salam |  |
| b. Pengkondisian kelas |  |

2. Kegiatan Awal (10 Menit)
a. Guru melakukan apersepsi dengan mengajukan sejumlah pertanyaan, seperti: What is this?
b. Siswa diinformasikan tentang tujuan pembelajaran hari ini dan menuliskan judul materi "countable dan uncountable noun"
3. Kegiatan Inti ( 65 Menit)
a. Ekspolorasi (5 Menit)

- Guru menempelkan gambar kumpuln materi vocabulary dan word search puzzle di papan tulis
- Guru menjelaskan pengertian, tujuan dan penggunaan vocabulary dan word search puzzle
- Guru menjelaskan kegiatan yang akan dilakukan siswa, yaitu menuliskan contoh dari contable noun dan uncountable noun.
b. Elaborasi (55 Menit)
- Guru menuliskan materi di papan tulis
- Siswa memahami materi dan menuliskan contoh yang sesuai dengan penjelasan
- Guru memberi latihan kepada siswa tentang penggunaan countble and uncantable noun
- Guru dan siswa sama-sama memeriksa hasil kerja siswa
c. Konfirmasi (5 Menit)
- Siswa diberi umpan balik atas kegiatan hari ini
- Setiap siswa mendapat penilaian secara individu

4. Kegiatan Akhir (5 Menit)
a. Pemantapan materi yang telah dipelajari
b. Siswa dibimbing guru untuk menyimpulkan hasil pelajaran
c. Siswa dievaluasi

Sumber Belajar : Buku Teks Kelas VII
Penilaian:

| Indikator Pencapaian <br> Kompetensi | Teknik <br> Penilaian | Bentuk <br> Instrumen | Instrument/ soal |
| :--- | :---: | :---: | :--- |
| Menggunakan <br> countable dan <br> uncountable noun | Tes tulis | Tugas individu | Complete the <br> sentecne! |
|  |  |  | 1. Organ tubuh untuk <br> melihat . . |
|  |  | 2. Bahan untuk <br> membuat meja $\ldots$ |  |

Padangsidimpuan, Mei 2015
Researcher,

Desi Afridah Lubis
NIM. 103400044

Guru Bahasa Inggris
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## Appendix III

## TEST

## Try out

Nama
Kelas

## A. Pengantar

1. Tes ini hanya bertujuan untuk menyaring data dari siswa
2. Jawaban anda tidak mempenagruhi kedudukan anda di sekolah
3. Terimakasih atas kejujuran dan partisispasi anda

## B. Petunjuk :

1. Isilah terlebih dahulu identitas anda (nama dan kelas)
2. Jawaban anda tidak mempengaruhi kedudukan anda di sekolah
3. Carilah kata-kata dibawah ini yang berada didalam kotak baik secara mendatar, menurun, kesamping kanan, dan kesamping kiri.
4. Jawablah dengan bahasa inggris

## C. Pertanyaan :

$\checkmark$ Complete/ filling the blank word search puzzle test for each student in the last meeting.

1. Sedia payung sebelum...
2. Kata lain dari musim . . .
3. Hiburan yang paling banyak disukai ...
4. Tanaman indah didepan rumah ...
5. Tempat menyuci pakaian kecuali kamar mandi...
6. Orang tua dari ke dua orang tua kita...
7. Islam, Kristen, budha adalah . . .
8. Hewan peliharaan dirumah...
9. Awal dari bulan masehi .. .
10. Tempat pariwisata . . . Toba
11. Bahan untuk mengoreng atau membuat kue...
12. Planet yang menyinari bumi kita . . .
13. Orang yang melahirkan kita...
14. Organ tubuh untuk melihat...
15. Salah satu bahan untuk membuat saus ...
16. Kebutuhan yang sangat penting dalam kehidupan sehari-hari ...
17. Kepala keluarga kita...
18. Tempat yang digunakan untuk duduk ...
19. Bulan setelah agustus ...
20. Buah kesukaan monyet...
21. Benda yang rasanya manis ...
22. Makanan yang sering dihidangkan pada pagi hari ...
23. Benda bulat yang banyak digemari para lelaki...
24. Alat perlengkapan sekolah ...
25. Permainan yang dimainkan oleh dua orang ...

## Appendix IV

## PRE-TEST

Nama
Kelas

## D. Pengantar

1. Tes ini hanya bertujuan untuk menyaring data dari siswa
2. Jawaban anda tidak mempenagruhi kedudukan anda di sekolah
3. Terimakasih atas kejujuran dan partisispasi anda

## E. Petunjuk :

1. Isilah terlebih dahulu identitas anda (nama dan kelas)
2. Jawaban anda tidak mempengaruhi kedudukan anda di sekolah
3. Carilah kata-kata dibawah ini yang berada didalam kotak baik secara mendatar, menurun, kesamping kanan, dan kesamping kiri.
4. Jawablah dengan bahasa inggris
5. Waktu yang tersedia 60 menit

## F. Pertanyaan :

1. Orang yang memperjual berikan barang ...
2. Tempat makan umum ...
3. Cairan yang keluar ketika kita terluka . . .
4. Suatu perkumpulan orang-orang...
5. Benda yang berfungsi menerima panggilan dirumah ...
6. Yang sangat diperlukan tubuh ...
7. Tempat tinggal kita . . .
8. Merek suatu kenderaan roda dua . . .
9. Dusun, desa, dan...
10. Bulan mengeluarkan . .
11. Sesuatu yang sangat diperlukan makhluk hidup ...
12. Benda yang menunjukkan waktu . . .
13. Hewan yang dapat terbang ...
14. Informasi yang ditayangkan di TV ...
15. Suatu musim yang terjadi di Afrika...
16. Benda untuk membuat kursi dan meja . . .
17. Gambar ditempelkan di ...
18. Kebutuhan sehari-hari, Benda cair . . .
19. Bahan untuk membuat kue . . .
20. Hewan yang hidup di air...

## Appendix V

## POST-TEST

Nama
Kelas

## A. Pengantar

1. Tes ini hanya bertujuan untuk menyaring data dari siswa
2. Jawaban anda tidak mempenagruhi kedudukan anda di sekolah
3. Terimakasih atas kejujuran dan partisispasi anda

## B. Petunjuk :

1. Isilah terlebih dahulu identitas anda (nama dan kelas)
2. Jawaban anda tidak mempengaruhi kedudukan anda di sekolah
3. Carilah kata-kata dibawah ini yang berada didalam kotak baik secara mendatar, menurun, kesamping kanan, dan kesamping kiri.
4. Jawablah dengan bahasa inggris
5. Waktu yang tersedia 60 meneit

## C.PERTANYAAN :

1. Makanan pokok kita adalah ..
2. Tempat menulis di sekolah...
3. Negara yang dipimpin oleh Barack Obama ...
4. Ibu kota Negara india...
5. Orang yang bekerja dikantor ...
6. Isi dari pulpen...
7. Nama pelawak Indonesia OVJ ...
8. Alat menulis yang memilki tinta...
9. Minuman tradisional kita . . .
10. Salah satu jenis benang yang sangat mahal. . .
11. Desa kecil bahasa inggrisnya ...
12. Pemimpin kerajaan . . .
13. Nama aktor bollywood kuch-kuch hota hai. . .
14. Alat menulis . . .
15. Nama artis penyanyi Hollywood ...
16. Bahan untuk menulis...
17. ... Akik yang lagi musim sekarang
18. Alat transformasi darat . . .
19. Tempat tidur bahasa inggrisnya . . .
20. Jalan keluar . . .

## KEY ANSWER

TEST

| 1. Rain | 6. Grandmother | 11. Flour | 16. Water | 21. Ball |
| :--- | :--- | :--- | :--- | :--- |
| 2. Weather | 7. Religion | 12. Sun | 17. father | 22. Cheese |
| 3. Music | 8. Cat | 13. Mother | 18. Chairs | 23. Sugar |
| 4. Flower | 9. January | 14. Eye | 19. September | 24. Bag |
| 5. River | 10. Lake | 15. Chili | 20. Banana | 25. Bread |


| B | S | R | B | C | F | A | T | H | E | R | C | X | Y | G | U |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| R | T | I | E | S | M | K | S | A | L | A | D | J | R | A | Y |
| S | U | V | F | L | O | W | E | R | S | Z | V | A | Z | B | B |
| E | D | E | D | U | I | L | B | N | M | U | N | N | U | W | B |
| P | O | R | I | F | C | G | O | Q | O | D | N | U | B | A | Z |
| T | M | S | E | L | M | N | I | P | M | Y | T | A | G | M | A |
| E | C | H | I | L | I | F | Z | O | R | X | N | R | E | U | B |
| M | G | O | K | M | L | Q | T | K | N | A | P | Y | Q | S | T |
| B | N | D | N | O | Z | H | C | D | N | W | E | L | O | I | D |
| E | W | M | U | U | E | Z | E | A | C | S | M | N | K | C | W |
| R | A | R | O | R | K | L | F | J | S | H | F | S | A | H | S |
| U | T | Q | W | E | A | T | H | E | R | V | A | T | I | J | U |
| D | E | Z | O | K | B | I | G | I | T | U | B | I | L | E | G |
| Y | R | S | E | M | N | A | N | M | O | T | H | E | R | O | A |
| A | F | E | L | A | H | K | L | C | H | E | E | S | E | M | R |
| B | C | D | B | R | E | A | D | L | L | S | N | P | Q | O | V |

PRE-TEST

| 1. Agent | 6. Food | 11. Place | 16. Wood |
| :--- | :--- | :--- | :--- |
| 2. Restaurant | 7. House | 12. Clock | 17. Wall |
| 3. Blood | 8. Honda | 13. Bird | 18. Water |
| 4. Organization | 9. City | 14. News | 19. Flour |
| 5. Telephone | 10. Light | 15. Snow | 20. Fish |


| R | C | R | S | J | U | P | I | T | E | R | T | E | U | C | B |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E | K | O | Q | P | C | H | D | P | A | S | N | O | W | L | G |
| \% | D | I | M | B | F | O | $\bigcirc$ | D | B | T | C | F | V | $\theta$ | D |
| $T$ | L | N | L | A | B | U | E | Q | E | Q | ${ }^{\prime}$ | Z | B | C | M |
| A | E | N | L | V | Z | S | F | R | S | $8$ | R | $G^{\prime}$ | E | K | W |
| U | K | L | B | Y | M | E | T | O | И | S | $4$ | Z | F | A | Y |
| R | L | D | E | X | W | A | G | $¢$ | K | $y$ | P | K | $1$ | I | F |
| A | I | H | T | P | I | H | $\lambda$ | L |  | N | D | L | H | G | K |
| N | G | G | U | N | H | $x^{\prime}$ | J | 7 | M | T | M | X | ¢ | W | G |
| 7 | H | E | E | V | K | O |  | I | A | N | K | $y$ | $N$ | B | 0 |
| A | 7 | R | K | 8 | A | $\mathrm{T} /$ | N | $G^{\prime}$ | W | R | ${ }^{\prime}$ | Y | D | - | L |
| D | S | B | J | L | I/ | V | y | E | W | $A$ | O | X | A | $\bigcirc$ | D |
| S | C | H | O | $0$ | L | $y$ | H | U | $\ell$ | S | T | R | Q | $\phi$ | L |
| F | E | G | \& | H | $7$ | I | M | L | O | P | W | 0 | 0 | D | A |
| F | L | O | U | R | T | V | H | M | W | A | T | E | R | Q | W |

## POST TEST

| 1. Rice | 6. Ink | 11. Town | 16. Table |
| :--- | :---: | :--- | :--- |
| 2. Book | 7. Sule | 12. King | 17. Stone |
| 3. America | 8. Pen. | 13. Shakrukhan | 18. Car |
| 4. Delhi | 9. Tea | 14. Pencil | 19. Bad |
| 5. Officer | 10. Wool | 15. Micheal Jackson | 20. Door |


| S | R | S | T | K | L | M | P | O | M |  |  | E | Y | R | O | W |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| T | H | E | R | O | R | S | D | R | S | C | F | P | Q | S | F | N |
| M | U | A | P | B | P | E | N | D | N | U | G | 0 | J | V | F | K |
| A | D | C | K | B | , | X | A | T | A | B | L | $\not Z^{\prime}$ | T | U | I | P |
| M | E | K | S |  | S | A | E | E | M | A | $\not x^{\prime}$ | k | V | W | C | 0 |
| E | S | O | $\cdots$ | L | R | D | M | O | W |  | B | N | U | X | E | $\bigcirc$ |
| R | I | U | $N$ | N | T | U | H | T | I | $\varnothing$ | H | M | Y | Z | $R$ | R |
| I | L | D | F | Q | Q | Y | K | 九 | O | B | O | B | A | ${ }^{\prime}$ | F | C |
| ¢ | C | M | D | E | B | Z | O |  | L | C | A | L | $\not \subset$ | B | R | B |
| A | D | R | W | G | O | B | T | D | N | $\square$ | J | $\not E$ | C | T | U | U |
| N | M | M | I | C | H | A |  | L |  |  | C |  | S | ¢ | N | G |
| L | Q | R | N | X | P | C | A | Q | B | E | N | K | D | W | D | $C$ |
| K | L | Q | T | P | O | T | O | G | R | A | P | H | E | N | $\not A$ | Z |
| C | V | S | T | 0 | N | E | N | J | S | F | Y | W | A | R' | K | U |

## APPENDIX VI

## VALIDITY OF PRE-TEST

FOR ITEM 1
P $\quad=0.7$
$\mathrm{q} \quad=0.3$
SDt $=4.84$
$\mathrm{M}_{\mathrm{P}}=18.18$
$\mathrm{M}_{\mathrm{t}} \quad=16.43$
To know the validity of the items, Researcher use the correlation Biserial formula:

$$
\begin{aligned}
\mathrm{r}_{\mathrm{pbi}} & =\frac{M p-M t}{S D_{t}} \sqrt{\frac{p}{q}} \\
& =\frac{18.18-16.43}{4.84} \sqrt{\frac{0.7}{0.3}} \\
& =\frac{1.75}{4.84} \sqrt{2.33} \\
& =0.36(1.52) \\
& =0.544
\end{aligned}
$$

So that, $\mathrm{r}_{\text {count }}=0.544$, the test is valid if $\mathrm{r}_{\text {count }}>\mathrm{r}_{\text {table }}$, based on calculation above, the item 1 is Valid.

Result of pre-test Validity

| Number of items | Result of $\mathbf{T}_{\text {Count }}$ | $\mathrm{T}_{\text {Table }}$ | Explanation |
| :---: | :---: | :---: | :---: |
| 1 | 0.544 | if $\mathrm{r}_{\mathrm{pbi}}>\mathrm{r}_{\text {table }}$ with the significant level 5 \% (0.05) with the table r product moment$\begin{aligned} \mathrm{n} & =30 \\ \mathrm{r}_{\text {table }} & =0.349 \end{aligned}$ | Valid |
| 2 | 0.600 |  | Valid |
| 3 | 0.496 |  | Valid |
| 4 | 0.344 |  | Invalid |
| 5 | 0.338 |  | Invalid |
| 6 | 0.622 |  | Valid |
| 7 | 0.236 |  | Invalid |
| 8 | 0.606 |  | Valid |
| 9 | 0.516 |  | Valid |
| 10 | 0.693 |  | Valid |
| 11 | 0.692 |  | Valid |
| 12 | 0.454 |  | Valid |
| 13 | 1.068 |  | Valid |
| 14 | 0.413 |  | Valid |
| 15 | 0.412 |  | Valid |
| 16 | 0.606 |  | Valid |
| 17 | 0.552 |  | Valid |
| 18 | 0.939 |  | Valid |
| 19 | 0.633 |  | valid |
| 20 | 0.177 |  | Invalid |
| 21 | 0.784 |  | Valid |
| 22 | 0.106 |  | Invalid |
| 23 | 0.504 |  | Valid |
| 24 | 0.392 |  | Valid |
| 25 | 0.372 |  | Valid |

## APPENDIX VII

## RELIABILITY OF PRE TEST

To get Reliability of the test, the writer uses formula KR-20:
$r_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S t^{2}-\sum p q}{S t}\right)$

From the table $n=30$

$$
\begin{aligned}
& \sum x=500 \\
& \sum x^{2}=9064 \\
& \sum p q=4.3627 \\
& \left(\sum x\right)^{2}=250000
\end{aligned}
$$

So that,

$$
\begin{aligned}
S t^{2} & =\frac{\sum x_{t}^{2}}{N} \\
& =\frac{9064}{30} \\
& =302.13
\end{aligned}
$$

So that,

$$
\begin{aligned}
r_{11} & =\left(\frac{n}{n-1}\right)\left(\frac{S_{t}^{2}-\sum p q}{S_{t}^{2}}\right) \\
& =\left(\frac{30}{30-1}\right)\left(\frac{302.13-4.362}{302.13}\right) \\
& =(1.03)(1.00) \\
& =1.03
\end{aligned}
$$

$\mathrm{r}_{\text {count }}: 1.03, \alpha=0,05, n=30$ and $\mathrm{r}_{\text {tabel }}=0,374$.

Test is reliable if $\mathrm{r}_{\text {count }}>\mathrm{r}_{\text {tabel }}$. Based on calculation above, the test have very high reliable.

## Appendix 9

## Reliability Pre test

$$
\begin{aligned}
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S_{t^{2}}-\sum p q}{S_{t^{2}}}\right) \\
& \mathrm{N}=30 \\
& \sum \mathrm{Xt}
\end{aligned}=500 . \begin{aligned}
& \sum \mathrm{Xt}^{2}=9064 \\
& \sum \mathrm{pq}=4,92 \\
& \mathrm{~S}_{\mathrm{t}}^{2} \quad=\sum \mathrm{Xt}^{2}-\left(\frac{\sum \mathrm{xt}}{N}\right)^{2} \\
&=9064-\left(\frac{500}{30}\right)^{2}=9064-\frac{250000}{30}=9064-8333=731 \\
& \mathrm{~S}_{\mathrm{t}}^{2}=\frac{\sum \mathrm{Xt} 2}{N}=\frac{731}{30} \\
& \mathrm{~S}_{\mathrm{t}}^{2} \quad=24.36 \\
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S_{t^{2}}-\sum p q}{S_{t^{2}}}\right) \\
& \mathrm{R}_{11}=\left(\frac{30}{30-1}\right)\left(\frac{24.36-4.92}{24.36}\right)=\left(\frac{30}{29}\right)\left(\frac{19.44}{24.36}\right) \\
&=(1.03)(0.79) \\
&=0.81\left(\mathrm{r}_{11}>0.70=\text { reliable }\right)
\end{aligned}
$$

## Appendix 10

## Reliability Post Test

$$
\begin{aligned}
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S_{t^{2}}-\sum p q}{S_{t^{2}}}\right) \\
& \mathrm{N}=30 \\
& \sum \mathrm{Xt}=504 \\
& \sum \mathrm{Xt}^{2}=8920 \\
& \sum \mathrm{pq}=4.79 \\
& \mathrm{~S}_{\mathrm{t}}^{2}=\sum \mathrm{Xt}^{2}-\left(\frac{\sum \mathrm{xt}}{N}\right)^{2} \\
&=8920-\left(\frac{504}{30}\right)^{2}=8920-\frac{254016}{30}=8920-8467.2=452.8 \\
& \mathrm{~S}_{\mathrm{t}}^{2}=\frac{\sum \mathrm{xt} 2}{N}=\frac{452.8}{30} \\
& \mathrm{~S}_{\mathrm{t}}^{2}=15.0933 \\
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{\left.S_{t^{2}-\sum p q}^{S_{t}^{2}}\right)}{\mathrm{R}_{11}=}\right. \\
&=\left(\frac{30}{30-1}\right)\left(\frac{452.8-4.72}{452.8}\right)=\left(\frac{30}{29}\right)\left(\frac{448.08}{452.8}\right) \\
&=(1.03)(0.98) \\
&= 1.009 \\
&= 1.009\left(\mathrm{r}_{11}>0.70=\text { reliable }\right)
\end{aligned}
$$

## Appendix 11

## RESULT OF NORMALITY TEST OF EXPERIMENTAL CLASS IN PRE-TEST

1. The score of Experimental class in Pre-Test from low score to high score:

| 45 | 45 | 50 | 50 | 50 | 50 | 55 | 55 | 55 | 55 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 65 | 65 |
| 65 | 70 | 70 | 70 | 70 | 75 | 75 | 75 | 75 | 75 |

2. High $=75$

Low $=45$
Range = High - Low

$$
\begin{aligned}
& =75-45 \\
& =30
\end{aligned}
$$

3. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (30) \\
& =1+3,3(1,47) \\
& =1+4.85 \\
& =5.85 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { total of class }} \quad=\frac{30}{6}=5$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $45-49$ | 2 | 47 | 3 | 6 | 9 | 18 |
| $50-54$ | 4 | 52 | 2 | 8 | 4 | 16 |
| $55-59$ | 4 | 57 | 1 | 4 | 1 | 4 |
| $60-64$ | 8 | 62 | 0 | 0 | 0 | 0 |
| $65-69$ | 3 | 67 | -1 | -3 | 1 | 3 |
| $70-74$ | 4 | 72 | -2 | -8 | 4 | 16 |
| $75-79$ | 5 | 77 | -3 | -15 | 9 | 45 |
| $i=5$ | 30 | - | - | -8 | - | 102 |

$$
\begin{aligned}
M x & =M^{1}+i \frac{\Sigma f x^{1}}{N} \\
& =62+5\left(\frac{-8}{30}\right) \\
& =62+5(-0.26) \\
& =62+(-1.3)=60.7
\end{aligned}
$$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\Sigma f x^{\prime 2}}{N}}-\left[\frac{\Sigma f x^{\prime}}{N}\right]^{2} \\
&=\sqrt[5]{\frac{102}{30}-\left(\frac{-8}{30}\right)^{2}} \\
&=\sqrt[5]{3.4-(-0.26)^{2}} \\
&=\sqrt[5]{3.4-0.06} \\
&=\sqrt[5]{3.34} \\
&=5(1,82) \\
&=9.1
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real Upper <br> Limit | $Z-$ <br> Score | Limit of <br> Area | Large of <br> area | $f_{h}$ | $f_{0}$ | $\left(f_{0}-f_{h}\right)$ <br> $f_{h}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $75-79$ | 79.5 | 2.01 | 0.4778 | 0.04 | 1.2 | 5 | 3.16 |
| $70-74$ | 74.5 | 1.47 | 0.4292 | 0.10 | 3 | 4 | 0.33 |
| $65-69$ | 69.5 | 0.94 | 0.3264 | 0.16 | 4.8 | 3 | 0.13 |
| $60-64$ | 64.5 | 0.41 | 0.1591 | -0.29 | -8.7 | 8 | 0.08 |
| $55-59$ | 59.5 | -0.11 | 0.45620 | 0.19 | 5.7 | 4 | -0.29 |
| $50-54$ | 54.5 | -0.64 | 0.26109 | 0.14 | 4.2 | 4 | -0.04 |
| $45-49$ | 49.5 | -1.18 | 0.11900 | 0.07 | 2.1 | 2 | -0.04 |
|  | 44.5 | -1.71 | 0.04363 |  |  |  |  |

Based on table above, reseracher found that $x^{2}{ }_{\text {count }}=3.33$ while $x^{2}{ }_{\text {table }}=5.991$ cause $\mathrm{x}_{\text {cause }}^{2}<\mathrm{x}_{\text {table }}^{2}(3.33<5.991)$ with degree of freedom $\mathrm{dk}=5-3=2$ and significat level $\alpha=5 \%$. So distribution of experimental class (Pre-test) is normal.
6. Median

| No | Interval of Classes | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $45-49$ | 2 | 2 |
| 2 | $50-54$ | 4 | 6 |
| 3 | $55-59$ | 4 | 10 |
| 4 | $60-64$ | 8 | 18 |
| 5 | $65-69$ | 3 | 21 |
| 6 | $70-74$ | 4 | 25 |
| 7 | $75-79$ | 5 | 30 |

Position of Me in the interval of classes is number 4, that:

$$
\begin{array}{ll}
\mathrm{Bb} & =59.5 \\
\mathrm{~F} & =4 \\
\mathrm{fm} & =8 \\
\mathrm{i} & =5 \\
\mathrm{n} & =30 \\
1 / 2 \mathrm{n} & =15
\end{array}
$$

So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right) \\
& =59,5+5\left(\frac{15-4}{8}\right) \\
& =59.5+5(1.37) \\
& =59.5+6.85 \\
& =66.35
\end{aligned}
$$

7. Modus

| No | Interval of Classes | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $45-49$ | 2 | 2 |
| 2 | $50-54$ | 4 | 6 |
| 3 | $55-59$ | 4 | 10 |
| 4 | $60-64$ | 8 | 18 |
| 5 | $65-69$ | 3 | 21 |
| 6 | $70-74$ | 4 | 25 |
| 7 | $75-79$ | 5 | 30 |

$$
\begin{array}{ll}
\mathrm{M}_{\mathrm{o}} & =L+\frac{d_{1}}{d_{1}+d_{2}} i \\
& \\
\mathrm{~L} & =59.5 \\
\mathrm{~d}_{1} & =4 \\
\mathrm{~d}_{2} & =5 \\
\mathrm{i} & =5 \\
\mathrm{M}_{\mathrm{o}} & =59.5+\frac{5}{5+5} 5 \\
& =59.5+0.44(5) \\
& =59.5+2.2 \\
& =61.7
\end{array}
$$

## Appendix 12

RESULT OF THE NORMALITY TEST OF CONTROL CLASS IN PRE-TEST

1. The score of control class in pre test from low score to high score:

| 45 | 45 | 50 | 50 | 50 | 50 | 55 | 55 | 60 | 60 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 60 | 60 | 60 | 60 | 60 | 60 | 60 | 65 | 65 | 65 |
| 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 |  |  |

2. High $=75$

Low $=45$
Range $=$ High - Low

$$
\begin{aligned}
& =75-45 \\
& =30
\end{aligned}
$$

3. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (28) \\
& =1+3,3(1,44) \\
& =1+4.75 \\
& =5.75 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { total of class }} \quad=\frac{30}{6}=5$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $45-49$ | 2 | 47 | 3 | 6 | 9 | 18 |
| $50-54$ | 4 | 52 | 2 | 8 | 4 | 16 |
| $55-59$ | 2 | 57 | 1 | 2 | 1 | 2 |
| $60-64$ | 9 | 62 | 0 | 0 | 0 | 0 |
| $65-69$ | 5 | 67 | -1 | -5 | 1 | 5 |
| $70-74$ | 4 | 72 | -2 | -8 | 4 | 16 |
| $75-79$ | 2 | 77 | -3 | -6 | 9 | 18 |
| $i=5$ | 28 | - | - | -8 | - | 75 |

$$
\begin{aligned}
M x & =M^{1}+i \frac{\Sigma f x^{1}}{N} \\
& =62+5\left(\frac{-3}{28}\right) \\
& =62+5(-0.10) \\
& =62+(-0.5) \\
& =61.5
\end{aligned}
$$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\Sigma f x^{\prime 2}}{N}}-\left[\frac{\Sigma f x^{\prime}}{N}\right]^{2} \\
&=\sqrt[5]{\frac{75}{28}}-\left(\frac{-3}{28}\right)^{2} \\
&=\sqrt[5]{3.4-(-0.10)^{2}} \\
&=\sqrt[5]{2.67-0.01} \\
&=\sqrt[5]{2.66} \\
&=5(1.63) \\
&=8.15
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real Upper <br> Limit | $Z-$ <br> Score | Limit of <br> Area | Large of <br> area | $f_{h}$ | $f_{0}$ | $\left(f_{0}-f_{h}\right)$ <br> $f_{h}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $75-79$ | 79.5 | 2.08 | 0.4812 | 0.05 | 1.4 | 2 | 0.42 |
| $70-74$ | 74.5 | 1.47 | 0.4292 | 0.12 | 3.36 | 4 | 0.19 |
| $65-69$ | 69.5 | 0.85 | 0.3023 | 0.20 | 5.6 | 5 | -0.10 |
| $60-64$ | 64.5 | 0.24 | 0.0948 | -0.26 | -7.28 | 9 | 0.23 |
| $55-59$ | 59.5 | -0.36 | 0.35942 | 0.19 | 5.32 | 2 | -0.62 |
| $50-54$ | 54.5 | -0.98 | 0.16354 | 0.10 | 2.8 | 4 | 0.42 |
| $45-49$ | 49.5 | -1.59 | 0.05592 | 0.074 | 1.12 | 2 | 0.78 |
|  | 44.5 | -2.20 | 0.01390 |  |  |  |  |

Based on table above, reseracher found that $\mathrm{x}_{\text {count }}^{2}=1.32$ while $\mathrm{x}_{\text {table }}^{2}=5.991$ cause $\mathrm{x}_{\text {cause }}^{2}<\mathrm{x}_{\text {table }}^{2}(1.32<5.991)$ with degree of freedom $\mathrm{dk}=5-3=2$ and significat level $\alpha=5 \%$. So distribution of experimental class (Pre-test) is normal.
6. Median

| No | Interval of Classes | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $45-49$ | 2 | 2 |
| 2 | $50-54$ | 4 | 6 |
| 3 | $55-59$ | 2 | 8 |
| 4 | $60-64$ | 9 | 17 |
| 5 | $65-69$ | 5 | 22 |
| 6 | $70-74$ | 4 | 26 |
| 7 | $75-79$ | 2 | 28 |

Position of Me in the interval of classes is number 4, that:

$$
\begin{array}{ll}
\mathrm{Bb} & =59.5 \\
\mathrm{~F} & =2 \\
\mathrm{fm} & =9 \\
\mathrm{i} & =5 \\
\mathrm{n} & =28 \\
1 / 2 \mathrm{n} & =14
\end{array}
$$

So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right) \\
& =59,5+5\left(\frac{14-2}{9}\right) \\
& =59.5+5(1.33) \\
& =59.5+6.55 \\
& =66.15
\end{aligned}
$$

7. Modus

| No | Interval of Classes | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $45-49$ | 2 | 2 |
| 2 | $50-54$ | 4 | 6 |
| 3 | $55-59$ | 2 | 8 |
| 4 | $60-64$ | 9 | 17 |
| 5 | $65-69$ | 5 | 22 |
| 6 | $70-74$ | 4 | 26 |
| 7 | $75-79$ | 2 | 38 |

$$
\begin{array}{ll}
\mathrm{M}_{\mathrm{o}} & =L+\frac{d_{1}}{d_{1}+d_{2}} i \\
& =59.5 \\
\mathrm{~L} & =7 \\
\mathrm{~d}_{1} & =7 \\
\mathrm{~d}_{2} & =4 \\
\mathrm{i} & =5 \\
\mathrm{M}_{\mathrm{o}} & =59.5+\frac{7}{7+4} 5 \\
& =59.5+0.63(5) \\
& =59.5+3.15 \\
& =62.65
\end{array}
$$

## Appendix 13

## RESULT OF THE NORMALITY TEST OF EXPERIMENT CLASS IN POST-TEST

1. The score of experiment class in post test from low score to high score:

| 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 | 75 | 80 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 80 | 80 | 80 | 80 | 80 | 80 | 80 | 85 | 85 | 85 |
| 90 | 90 | 90 | 90 | 95 | 95 | 95 | 95 |  |  |

2. $\mathrm{High}=95$

Low $=65$
Range = High - Low

$$
\begin{aligned}
& =95-65 \\
& =30
\end{aligned}
$$

3. Total of Classes $=1+3,3 \log (n)$

$$
\begin{aligned}
& =1+3,3 \log (28) \\
& =1+3,3(1.44) \\
& =1+4.75 \\
& =5.75 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { total of class }} \quad=\frac{30}{6}=5$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $65-69$ | 2 | 67 | 3 | 6 | 9 | 18 |
| $70-74$ | 4 | 72 | 2 | 8 | 4 | 16 |
| $75-79$ | 3 | 77 | 1 | 3 | 1 | 3 |
| $80-84$ | 8 | 82 | 0 | 0 | 0 | 0 |
| $85-89$ | 3 | 87 | -1 | -3 | 1 | 3 |
| $90-94$ | 4 | 92 | -2 | -8 | 4 | 16 |
| $95-99$ | 4 | 97 | -3 | -12 | 9 | 36 |
| $i=5$ | 28 | - |  | -6 |  | 92 |

$$
\begin{aligned}
M x & =M^{1}+i \frac{\sum f x^{1}}{N} \\
& =82+5\left(\frac{-6}{28}\right) \\
& =82+5(-0.21) \\
& =82+(-1.05)=80.95
\end{aligned}
$$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\Sigma f x^{\prime 2}}{N}}-\left[\frac{\Sigma f x^{\prime}}{N}\right]^{2} \\
&=\sqrt[5]{\frac{92}{28}}-\left(\frac{-6}{28}\right)^{2} \\
&=\sqrt[5]{3.28-(0.04)} \\
&=\sqrt[5]{3.24} \\
&=5(1.8) \\
&=9
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval of Score | Real Upper Limit | $\begin{gathered} Z_{-} \\ \text {Score } \end{gathered}$ | Limit of Large of the Area | Large of area | $\mathrm{f}_{\mathrm{h}}$ | $\mathrm{f}_{0}$ | $\frac{\left(\mathrm{f}_{0}-\mathrm{f}_{\mathrm{h}}\right)}{\mathrm{f}_{\mathrm{h}}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 95-99 | 99.5 | 2.06 | 0.4803 | 0.04 | 1.12 | 4 | 2.57 |
|  |  |  |  |  |  |  |  |
|  | 94.5 | 1.50 | 0.4332 | 0.10 | 2.8 | 4 | 0.42 |
| 90-94 |  |  |  |  |  |  |  |
|  | 89.5 | 0.95 | 0.3289 | 0.17 | 4.76 | 3 |  |
| 85-89 |  |  |  |  |  |  | -0.36 |
|  | 84.5 | 0.39 | 0.1517 | -0.28 | -7.84 | 8 |  |
| 80-84 |  |  |  |  |  |  | -0.02 |
|  | 79.5 | -0.16 | 0.43644 | 0.19 | 5.32 | 3 |  |
| 75-79 | 74.5 | -0.71 | 0.23885 |  |  |  | -0.43 |
|  |  |  |  |  |  | 4 |  |
| 70-74 |  |  |  | -0.15 | -4.2 |  | 0.04 |
|  | 69.5 | 1.27 | 0. 3980 |  | 10.08 | 2 | -0.80 |
| 65-69 |  |  |  |  |  |  |  |
|  | 64.5 | -1.82 | 0.03438 |  |  |  |  |
|  |  |  |  |  | $\mathrm{X}^{2}$ |  | 1.42 |

Based on table above, reseracher found that $\mathrm{x}_{\text {count }}^{2}=1.42$ while $\mathrm{x}_{\text {table }}^{2}=5,991$ cause $\mathrm{x}^{2}$ cause $<\mathrm{x}_{\text {table }}^{2}(1.42<5.991)$ with degree of freedom $\mathrm{dk}=5-3=2$ and significat level $\alpha=5 \%$. So distribution of experiment class (Post Test) was normal.
6. Median

| No | Interval of Classes | F | fk |
| :---: | :---: | :---: | :---: |
| 1 | $65-69$ | 2 | 2 |
| 2 | $70-74$ | 4 | 6 |
| 3 | $75-79$ | 3 | 9 |
| 4 | $80-84$ | 8 | 17 |
| 5 | $85-89$ | 3 | 20 |
| 6 | $90-94$ | 4 | 24 |
| 7 | $95-99$ | 4 | 28 |

Position of Me in the interval of classes is number 4, that:

$$
\begin{array}{ll}
\mathrm{Bb} & =79.5 \\
\mathrm{~F} & =3 \\
\mathrm{fm} & =8 \\
\mathrm{i} & =5 \\
\mathrm{n} & =28 \\
1 / 2 \mathrm{n} & =14
\end{array}
$$

So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right) \\
& =79.5+5\left(\frac{14-3}{8}\right) \\
& =79.5+5(1.37) \\
& =79.5+6.85 \\
& =86.35
\end{aligned}
$$

7. Modus

| No | Interval of Classes | F | fk |
| :---: | :---: | :---: | :---: |
| 1 | $65-69$ | 2 | 2 |
| 2 | $70-74$ | 4 | 6 |
| 3 | $75-79$ | 3 | 9 |
| 4 | $80-84$ | 8 | 17 |
| 5 | $85-89$ | 3 | 20 |
| 6 | $90-94$ | 4 | 24 |
| 7 | $95-99$ | 4 | 28 |

$\mathrm{M}_{\mathrm{o}} \quad=L+\frac{d_{1}}{d_{1}+d_{2}} i$
$\mathrm{L}=79.5$
$\mathrm{d}_{1}=5$
$\mathrm{d}_{2}=5$
$\mathrm{i} \quad=5$
$\mathrm{M}_{\mathrm{o}}=79.5+\frac{5}{5+5} 5$
$=79.5+0.5(5)$
$=79.5+2.5$
$=82$

## Appendix 14

## RESULT OF THE NORMALITY TEST OF CONTROL CLASS

IN POST TEST

1. The score of control class in post test from low score to high score:

| 60 | 60 | 65 | 65 | 65 | 65 | 70 | 70 | 70 | 70 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 80 | 80 |
| 80 | 80 | 85 | 85 | 85 | 90 | 90 | 90 | 90 | 90 |

2. High $=90$

Low $\quad=60$
Range $=$ High - Low

$$
\begin{aligned}
& =90-60 \\
& =30
\end{aligned}
$$

3. Total of Classes $=1+3,3 \log (n)$

$$
\begin{aligned}
& =1+3,3 \log (30) \\
& =1+3,3(1.47) \\
& =1+4.85 \\
& =5.85 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { total of class }} \quad=\frac{30}{6}=5$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $60-64$ | 2 | 62 | 3 | 6 | 9 | 18 |
| $65-69$ | 4 | 67 | 2 | 8 | 4 | 16 |
| $70-74$ | 4 | 72 | 1 | 4 | 1 | 64 |
| $75-79$ | 8 | 77 | 0 | 0 | 0 | 0 |
| $80-84$ | 4 | 82 | -1 | -4 | 1 | 4 |
| $85-89$ | 3 | 87 | -2 | -6 | 4 | 12 |
| $90-94$ | 5 | 92 | -3 | -15 | 9 | 45 |
| $i=5$ | 30 | - | - | -7 | - | 99 |
|  |  |  |  |  |  |  |

$$
\begin{aligned}
M x & =M^{1}+i \frac{\Sigma f x^{1}}{N} \\
& =77+5\left(\frac{-7}{30}\right) \\
& =77+5(-0.23) \\
& =77+(-1.15)
\end{aligned}
$$

$$
=75.85
$$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\Sigma f x^{\prime 2}}{N}}-\left[\frac{\Sigma f x^{\prime}}{N}\right]^{2} \\
&=\sqrt[5]{\frac{99}{30}}-\left(\frac{-7}{30}\right)^{2} \\
&=\sqrt[5]{3.3-(0.23)^{2}} \\
&=\sqrt[5]{3.3-0.052} \\
&=\sqrt[5]{3.24} \\
&=5(1.8) \\
&=9
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real Upper <br> Limit | $Z-$ <br> Score | Limit of <br> Arge of the <br> Area | Large of <br> area | $f_{h}$ | $f_{0}$ | $\left(f_{0}-f_{h}\right)$ <br> $f_{h}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $90-94$ | 94.5 | 2.07 | 0.4808 | 0.05 | 1.5 | 5 | 2.33 |
| $85-89$ | 89.5 | 1.46 | 0.4279 | 0.09 | 2.7 | 3 | 0.11 |
| $80-84$ | 84.5 | 0.96 | 0.3315 | 0.17 | 5.1 | 4 | -0.21 |
| $75-79$ | 79.5 | 0.40 | 0.1554 | -0.28 | -8.4 | 8 | 0.04 |
| $70-74$ | 74.5 | -0.15 | 0.44038 | 0.19 | 5.7 | 4 | -0.29 |
| $65-69$ | 69.5 | -0.70 | 0.24196 | 0.13 | 3.9 | 4 | 0.02 |
| $60-64$ | 64.5 | -1.26 | 0.10383 | 0.06 | 1.8 | 2 | 0.11 |
| 59.5 | -1.81 | 0.03515 |  |  |  |  |  |

Based on table above, reseracher found that $\mathrm{x}^{2}$ count $=2.11$ while $\mathrm{x}_{\text {table }}^{2}=5.991$ cause $\mathrm{x}^{2}$ cause $<\mathrm{x}_{\text {table }}^{2}(2.11<5.991)$ with degree of freedom $\mathrm{dk}=5-3=2$ and significat level $\alpha=5 \%$. So distribution of control class (Post-test) was normal.
6. Median

| No | Interval Class | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $60-64$ | 2 | 2 |
| 2 | $65-69$ | 4 | 6 |
| 3 | $70-74$ | 4 | 10 |
| 4 | $75-79$ | 8 | 18 |
| 5 | $80-84$ | 4 | 22 |
| 6 | $85-89$ | 3 | 25 |
| 7 | $90-94$ | 5 | 30 |

Position of Me in the interval of classes is number 4, that:

$$
\begin{array}{ll}
\mathrm{Bb} & =74.5 \\
\mathrm{~F} & =4 \\
\mathrm{fm} & =8 \\
\mathrm{i} & =5 \\
\mathrm{n} & =30 \\
1 / 2 \mathrm{n} & =15
\end{array}
$$

So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f n}\right) \\
& =74.5+5\left(\frac{\mathbf{1 5 - 4}}{8}\right) \\
& =74.5+5(1.37) \\
& =74.5+6.85 \\
& =81.35
\end{aligned}
$$

7. Modus

| No | Interval Class | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $60-64$ | 2 | 2 |
| 2 | $65-69$ | 4 | 6 |
| 3 | $70-74$ | 4 | 10 |
| 4 | $75-79$ | 8 | 18 |
| 5 | $80-84$ | 4 | 22 |
| 6 | $85-89$ | 3 | 25 |
| 7 | $90-94$ | 5 | 30 |

$$
\begin{array}{ll}
\mathrm{M}_{\mathrm{o}} & =L+\frac{d_{1}}{d_{1}+d_{2}} i \\
& =74.5 \\
\mathrm{~L} & =4 \\
\mathrm{~d}_{1} & =4 \\
\mathrm{~d}_{2} & =4 \\
\mathrm{i} & =5 \\
\mathrm{M}_{\mathrm{o}} & =74.5+\frac{4}{4+4} 5 \\
& =74.5+0.5(5) \\
& =74.5+2.5 \\
& =77
\end{array}
$$

## Appendix 15

## HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as experimental class sample by using word search puzzle Strategy and variant of the second class as control class sample by using conventional strategy are used homogeneity test by using formula:

$$
\mathrm{S}^{2}=\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)}
$$

Hypotheses:

$$
\begin{aligned}
\mathrm{H}_{0} & : \delta_{1}^{2}=\delta_{2}^{2} \\
\mathrm{H}_{1} & : \delta_{1}^{2} \neq \delta_{2}^{2}
\end{aligned}
$$

A. Variant of the experimental class is:

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1 | 60 | 3600 |
| 2 | 75 | 5625 |
| 3 | 55 | 3025 |
| 4 | 70 | 4900 |
| 5 | 45 | 2025 |
| 6 | 50 | 2500 |
| 7 | 60 | 3600 |
| 8 | 75 | 5625 |
| 9 | 50 | 2500 |
| 10 | 55 | 3025 |
| 11 | 75 | 5625 |
| 12 | 60 | 3600 |
| 13 | 70 | 4900 |
| 14 | 75 | 5625 |
| 15 | 65 | 4225 |
| 16 | 60 | 3600 |
| 17 | 65 | 4225 |
| 18 | 60 | 3600 |
| 19 | 55 | 3025 |
| 20 | 65 | 4225 |
| 21 | 45 | 2025 |
| 22 | 70 | 4900 |
| 23 | 50 | 2500 |
| 24 | 60 | 3600 |
| 25 | 50 | 2500 |
| 26 | 75 | 5625 |
| 27 | 55 | 3025 |
|  |  |  |


| 28 | 60 | 3600 |
| :---: | :---: | :---: |
| 29 | 60 | 3600 |
| 30 | 70 | 4900 |
|  | 1840 | 115350 |

$$
\mathrm{n} \quad=30
$$

$\sum x i=1840$
$\sum_{x i} 2=115350$

So:

$$
\begin{aligned}
S^{2} & =\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)} \\
& \frac{30(115350)-(1840)^{2}}{30(30-1)} \\
& =\frac{3460500-3385600}{870} \\
& =\frac{74900}{870} \\
& =86.09
\end{aligned}
$$

B. Variant of the control class is:

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1 | 60 | 3600 |
| 2 | 50 | 2500 |
| 3 | 70 | 4900 |
| 4 | 60 | 3600 |
| 5 | 65 | 4225 |
| 6 | 45 | 2025 |
| 7 | 65 | 4225 |
| 8 | 60 | 3600 |
| 9 | 75 | 5625 |
| 10 | 60 | 3600 |
| 11 | 55 | 3025 |
| 12 | 50 | 2500 |
| 13 | 65 | 4225 |
| 14 | 75 | 5625 |
| 15 | 50 | 2500 |
| 16 | 65 | 4225 |
| 17 | 60 | 3600 |
| 18 | 70 | 4900 |
| 19 | 60 | 3600 |
| 20 | 45 | 2025 |
| 21 | 65 | 4225 |


| 22 | 50 | 2500 |
| :---: | :---: | :---: |
| 23 | 60 | 3600 |
| 24 | 70 | 4900 |
| 25 | 50 | 2500 |
| 26 | 70 | 4900 |
| 27 | 60 | 3600 |
| 28 | 55 | 3025 |
| 1685 |  |  |

$\sum x i=1685$
$\sum_{x i} 2=103375$
So:

$$
\begin{aligned}
\mathrm{S}^{2} & =\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)} \\
& =\frac{28(103375)-(1685)^{2}}{28(28-1)} \\
& =\frac{2894500-2839225}{756} \\
& =\frac{55275}{756} \\
& =73.11
\end{aligned}
$$

The Formula was used to test hypothesis was:

$$
\mathrm{F}=\frac{\text { The Biggest Variant }}{\text { The Smallest Variant }}
$$

So:

$$
\begin{aligned}
\mathrm{F} & =\frac{86.09}{73.11} \\
& =1.17
\end{aligned}
$$

After doing the calculation, researcher found that $\mathrm{F}_{\text {count }}=1.17$ with $\alpha 5 \%$ and $\mathrm{dk}=58$ from the distribution list F , researcher found that $\mathrm{F}_{\text {table }}=2.021$, cause $\mathrm{F}_{\text {count }}<$ $\mathrm{F}_{\text {table }}(1.14<2.021)$. So, there is no difference the variant between the experimental class and control class. It means that the variant is homogenous.

## Appendix 16

## HOMOGENEITY TEST (POST TEST)

1. EXPERIMENT CLASS

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1 | 80 | 6400 |
| 2 | 70 | 4900 |
| 3 | 95 | 9025 |
| 4 | 80 | 6400 |
| 5 | 90 | 8100 |
| 6 | 70 | 4900 |
| 7 | 85 | 7225 |
| 8 | 80 | 6400 |
| 9 | 95 | 9025 |
| 10 | 80 | 6400 |
| 11 | 75 | 5625 |
| 12 | 70 | 4900 |
| 13 | 85 | 7225 |
| 14 | 95 | 9025 |
| 15 | 75 | 5625 |
| 16 | 90 | 8100 |
| 17 | 80 | 6400 |
| 18 | 90 | 8100 |
| 19 | 80 | 6400 |
| 20 | 65 | 4225 |
| 21 | 90 | 8100 |
| 22 | 65 | 4225 |
| 23 | 80 | 6400 |
| 24 | 95 | 9025 |
| 25 | 70 | 4900 |
| 26 | 85 | 7225 |
| 27 | 80 | 6400 |
| 28 | 75 | 5625 |
|  | 2270 | 186300 |
| $n$ | 28 |  |
|  |  |  |

$\sum x i=2270$
$\sum_{x i} 2=186300$

So:

$$
\begin{aligned}
S^{2} & =\frac{n \sum x i^{2}-\left(\sum x i\right)}{n(n-1)} \\
& =\frac{28(186300)-(2270)^{2}}{28(28-1)}
\end{aligned}
$$

$$
\begin{aligned}
& =\frac{5216400-5152900}{756} \\
& =\frac{63500}{756} \\
& =83.99
\end{aligned}
$$

## 2. CONTROL CLASS

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1 | $\mathbf{8 0}$ | 6400 |
| 2 | $\mathbf{8 5}$ | 7225 |
| 3 | $\mathbf{7 5}$ | 5625 |
| 4 | $\mathbf{6 0}$ | 3600 |
| 5 | $\mathbf{8 5}$ | 7225 |
| 6 | $\mathbf{8 0}$ | 6400 |
| 7 | $\mathbf{7 5}$ | 5625 |
| 8 | $\mathbf{9 0}$ | 8100 |
| 9 | $\mathbf{6 0}$ | 3600 |
| 10 | $\mathbf{7 5}$ | 7625 |
| 11 | $\mathbf{9 0}$ | 8100 |
| 12 | $\mathbf{7 0}$ | 4900 |
| 13 | $\mathbf{7 5}$ | 5625 |
| 14 | $\mathbf{9 0}$ | 8100 |
| 15 | $\mathbf{6 5}$ | 4225 |
| 16 | $\mathbf{7 5}$ | 5625 |
| 17 | $\mathbf{8 0}$ | 6400 |
| 18 | $\mathbf{7 0}$ | 4900 |
| 19 | $\mathbf{6 5}$ | 4225 |
| 20 | $\mathbf{8 0}$ | 6400 |
| 21 | $\mathbf{7 0}$ | 4900 |
| 22 | $\mathbf{9 0}$ | 8100 |
| 23 | $\mathbf{6 5}$ | 4225 |
| 24 | $\mathbf{7 5}$ | 5625 |
| 25 | $\mathbf{7 0}$ | 4900 |
| 26 | $\mathbf{9 0}$ | 8100 |
| 27 | $\mathbf{7 5}$ | 5625 |
| 28 | $\mathbf{6 5}$ | 4225 |
| 29 | $\mathbf{8 5}$ | 7225 |
| 30 | $\mathbf{7 5}$ | 5625 |
|  | 2285 | 178475 |
|  |  |  |

$\sum x i=2285$
$\sum_{x i} 2=178475$

So:

$$
\begin{aligned}
\mathrm{S}^{2} & =\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)} \\
& =\frac{30(178475)-(2285)^{2}}{30(30-1)} \\
& =\frac{5354250-5221225}{30(29)} \\
& =\frac{133025}{870} \\
& =152.90
\end{aligned}
$$

The Formula was used to test hypothesis was

$$
\mathrm{F}=\frac{\text { The Biggest Variant }}{\text { The Smallest Variant }}
$$

So:

$$
\begin{aligned}
\mathrm{F} & =\frac{152.90}{83.99} \\
& =1.82
\end{aligned}
$$

After doing the calculation, researcher found that $\mathrm{F}_{\text {count }}=1.82$ with $\alpha 5 \%$ and $\mathrm{dk}=58$ from the distribution list F , researcher found that $\mathrm{F}_{\text {table }}=2.021$, cause $\mathrm{F}_{\text {count }}<$ $\mathrm{F}_{\text {table }}(1.82<2.021)$. So, there is no difference the variant between the experimental class and control class. It means that the variant is homogenous.

## APPENDIX 15

## HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of experimental class sample and variant of the control class sample are used homogeneity test by using formula:

$$
\mathrm{S}^{2}=\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)}
$$

Hypothesis:

$$
\begin{aligned}
& \mathrm{H}_{0}: \delta_{1}^{2}=\delta_{2}^{2} \\
& \mathrm{H}_{1}: \delta_{1}^{2} \neq \delta_{2}^{2}
\end{aligned}
$$

So, the variant of the experimental class is:

| $\mathbf{X i}$ | $\mathbf{x i}^{\mathbf{2}}$ |
| :---: | :---: |
| 40 | 1600 |
| 40 | 1600 |
| 56 | 3136 |
| 80 | 6400 |
| 40 | 1600 |
| 44 | 1936 |
| 32 | 1024 |
| 52 | 2704 |
| 68 | 4624 |
| 36 | 1296 |
| 80 | 6400 |
| 48 | 2304 |
| 36 | 1296 |
| 68 | 4624 |
| 48 | 2304 |
| 28 | 784 |
| 32 | 1024 |


| 72 | 5184 |
| :---: | :---: |
| 52 | 2704 |
| 48 | 2304 |
| 36 | 1296 |
| 36 | 1296 |
| 80 | 6400 |
| 40 | 1600 |
| 52 | 2704 |
| 36 | 1296 |
| 44 | 1936 |
| 44 | 1936 |
| 76 | 5776 |
| 52 | 2704 |
| 52 | 2704 |
| 56 | 3136 |
| 72 | 5184 |
| 60 | 3600 |
| 60 | 3600 |
| 1796 | 100016 |
| $\mathrm{~S}^{2}=\frac{n \Sigma x i^{2}-\left(\sum_{x i}\right)}{n(n-1)}$ |  |
| $=\frac{35(10016)-(1796)}{35(35-1)}$ |  |
| $=\frac{3500560-1796}{35(34)}$ |  |
| $=\frac{3498764}{1190}$ |  |
| $=2940.13$ |  |

The Variant of the control class is:

| Xi | $\mathrm{Xi}^{2}$ |
| :---: | :---: |
| 60 | 3600 |
| 28 | 784 |


| 60 | 3600 |
| :---: | :---: |
| 68 | 4624 |
| 64 | 4096 |
| 56 | 3136 |
| 80 | 6400 |
| 64 | 4096 |
| 64 | 4096 |
| 24 | 576 |
| 57 | 3249 |
| 60 | 3600 |
| 64 | 4096 |
| 72 | 5184 |
| 44 | 1936 |
| 34 | 1156 |
| 48 | 2304 |
| 32 | 1024 |
| 70 | 4900 |
| 56 | 3136 |
| 52 | 2704 |
| 80 | 6400 |
| 56 | 3136 |
| 56 | 3136 |
| 56 | 3136 |
| 64 | 4096 |
| 56 | 3136 |
| 76 | 5776 |
| 44 | 1936 |
| 48 | 2304 |
| 64 | 4096 |
| 64 | 4096 |
| 64 | 4096 |
| 84 | 7056 |


| 52 | 2704 |
| :---: | :---: |
| 44 | 1936 |
| 52 | 2704 |
| 64 | 4096 |
| 2181 | 132137 |

$$
\begin{aligned}
S^{2} & =\frac{n \Sigma x i^{2}-\left(\sum x i\right)}{n(n-1)} \\
& =\frac{38(132137)-(2181)}{38(38-1)} \\
& =\frac{5021206}{38(37)} \\
& =\frac{5021206}{1406} \\
& =3571.27
\end{aligned}
$$

The Formula was used to test hypothesis was:

$$
\mathrm{F}=\frac{\text { The Biggest Variant }}{\text { The Smallest Variant }}
$$

So:

$$
\begin{aligned}
\mathrm{F} & =\frac{3571.27}{2940.13} \\
& =1.21
\end{aligned}
$$

After doing the calculation, researcher found that $\mathrm{F}_{\text {count }}=1,21$. While, $\mathrm{F}_{\text {table }}$ with dk numerator $(38-1=37)$ and dk denominator $(35-1=34) . \mathrm{F}_{\text {table }}$ with $\alpha 5 \%$ from the distribution list F , researcher found that $\mathrm{F}_{\text {table }}=1.77$, cause $\mathrm{F}_{\text {count }}<\mathrm{F}_{\text {table }}(1,21<1,77)$. So, there is no difference the variant between experimental class and control class, it means that the variant is homogenous.

## Appendix 16

## $\mathrm{T}_{\text {test }}$ OF THE BOTH AVERAGES IN PRE-TEST

The formula was used to analyse homogeneity test of the both averages was $t$-test, that:
$t=\frac{\bar{X}_{1}-\bar{X}_{2}}{\sqrt[5]{\frac{1}{n_{1}}+\frac{1}{n_{2}}}}$ with $S=\sqrt{\frac{\left(n_{1}-1\right) S_{1}^{2}+\left(n_{2}-2\right) S_{2}^{2}}{n_{1}+n_{2}-2}}$
So:

$$
\begin{aligned}
& S=\sqrt{\frac{(28-1) 73.11+(30-2) 86.09}{28+30-2}} \\
&=\sqrt{\frac{27(73.11)+28(86.09)}{56}} \\
&=\sqrt{\frac{1973.97+2410.52}{56}} \\
&=\sqrt{\frac{4384.49}{56}} \\
&=\sqrt{78.29} \\
&=8.84
\end{aligned}
$$

So:

$$
\begin{aligned}
t= & \frac{\bar{X}_{1}-\bar{X}_{2}}{\sqrt[5]{\frac{1}{n_{1}}+\frac{1}{n_{2}}}} \\
t \quad & =\frac{62.05-60.6}{8.84 \sqrt{\frac{1}{28}+\frac{1}{30}}} \\
& =\frac{1.45}{8.03} \sqrt{0,035+0.033} \\
& =\frac{1.45}{8.84(0.368)} \\
& =\frac{1.45}{3.25} \\
& =0.44
\end{aligned}
$$

Based on researcher calculation result of the homogeneity test of the both averages, researcher found that $\mathrm{t}_{\text {count }}=0.44$ with opportunity $(1-\alpha)=1-5 \%=95 \%$ and $\mathrm{dk}=\mathrm{n}_{1}+\mathrm{n}_{2}-2$ $=28+30-2=56$, reseracher found that $\mathrm{t}_{\text {table }}=2.021$, cause $\mathrm{t}_{\text {count }}<\mathrm{t}_{\text {table }}(0.44<2.021) . \mathrm{So}, \mathrm{H}_{\mathrm{a}}$ is accepted, it means no difference the average between the first class as experimental class and the second class as control class in this research.

## Appendix 17

## $\mathrm{T}_{\text {test }}$ OF THE BOTH AVERAGES IN POST - TEST

The formula was used to analyse homogeneity test of the both averages was t-test, that:
$t=\frac{\bar{X}_{1}-\bar{X}_{2}}{\sqrt[5]{\frac{1}{n_{1}}+\frac{1}{n_{2}}}}$ with $S=\sqrt{\frac{\left(n_{1}-1\right) S_{1}^{2}+\left(n_{2}-2\right) S_{2}^{2}}{n_{1}+n_{2}-2}}$

So:

$$
\begin{aligned}
& S=\sqrt{\frac{(28-1) 83.99+(30-2) 152.90}{28+30-2}} \\
&=\sqrt{\frac{27(83.99)+28(152.90)}{56}} \\
&=\sqrt{\frac{2267.73+4281.2}{56}} \\
&=\sqrt{\frac{6548.93}{56}} \\
&=\sqrt{116.94} \\
&=10.81
\end{aligned}
$$

So:

$$
\begin{aligned}
t= & \frac{\bar{X}_{1}-\bar{X}_{2}}{\sqrt[s]{\frac{1}{n_{1}}+\frac{1}{n_{2}}}} \\
t \quad & =\frac{80.95-75.85}{\sqrt[10.81]{\sqrt{\frac{1}{28}+\frac{1}{30}}}} \\
& =\frac{5.1}{\sqrt[10.81]{0,035+0.033}} \\
& =\frac{5.1}{10.81(0.068)}
\end{aligned}
$$

$$
\begin{aligned}
& =\frac{5.1}{0,73} \\
& =6.98
\end{aligned}
$$

Based on researcher calculation result of the homogeneity test of the both averages, researcher found that $\mathrm{t}_{\text {count }}=6.98$ with opportunity $(1-\alpha)=1-5 \%=95 \%$ and $d \mathrm{dk}=\mathrm{n}_{1}+\mathrm{n}_{2}-2$ $=28+30-2=56$, reseracher found that $\mathrm{t}_{\text {table }}=2.021$, cause $\mathrm{t}_{\text {count }}>\mathrm{t}_{\text {table }}(6.98>2.021) . \mathrm{So}, \mathrm{H}_{\mathrm{a}}$ was accepted, it means there was the difference average between the first class as experimental class and the second class as control class in this research.

Percentage Points of the $t$ Distribution

| Two Tail Test |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{0 , 5 0}$ | $\mathbf{0 , 2 0}$ | $\mathbf{0 , 1 0}$ | $\mathbf{0 , 0 5}$ | $\mathbf{0 , 0 2}$ | $\mathbf{0 , 0 1}$ |  |
| One Tail Test |  |  |  |  |  |  |  |
| $\mathbf{d k}$ | $\mathbf{0 , 2 5}$ | $\mathbf{0 , 1 0}$ | $\mathbf{0 , 0 0 5}$ | $\mathbf{0 , 0 2 5}$ | $\mathbf{0 , 0 1}$ | $\mathbf{0 , 0 5}$ |  |
| $\mathbf{1}$ | 1,000 | 3,078 | 6,314 | 12,706 | 31,821 | 63,657 |  |
| $\mathbf{2}$ | 0,816 | 1,886 | 2,920 | 4,303 | 6,965 | 9,925 |  |
| $\mathbf{3}$ | 0,765 | 1,638 | 2,353 | 3,182 | 4,541 | 5,841 |  |
| $\mathbf{4}$ | 0,741 | 1,533 | 2,132 | 2,776 | 3,747 | 4,604 |  |
| $\mathbf{5}$ | 0,721 | 1,486 | 2,015 | 2,571 | 3,365 | 4,032 |  |
| $\mathbf{6}$ | 0,718 | 1,440 | 1,943 | 2,447 | 3,143 | 3,707 |  |
| $\mathbf{7}$ | 0,711 | 1,415 | 1,895 | 2,365 | 2,998 | 3,499 |  |
| $\mathbf{8}$ | 0,706 | 1,397 | 1,860 | 2,306 | 2,896 | 3,355 |  |
| $\mathbf{9}$ | 0,703 | 1,383 | 1,833 | 2,262 | 2,821 | 3,250 |  |
| $\mathbf{1 0}$ | 0,700 | 1,372 | 1,812 | 2,228 | 2,764 | 3,165 |  |
| $\mathbf{1 1}$ | 0,697 | 1,363 | 1,796 | 2,201 | 2,718 | 3,106 |  |
| $\mathbf{1 2}$ | 0,695 | 1,356 | 1,782 | 2,178 | 2,681 | 3.055 |  |
| $\mathbf{1 3}$ | 0,692 | 1,350 | 1,771 | 2,160 | 2,650 | 3.012 |  |
| $\mathbf{1 4}$ | 0,691 | 1,345 | 1,761 | 2,145 | 2,624 | 2,977 |  |
| $\mathbf{1 5}$ | 0,690 | 1,341 | 1,753 | 2,132 | 2,623 | 2,947 |  |
| $\mathbf{1 6}$ | 0,689 | 1,337 | 1,746 | 2,120 | 2,583 | 2,921 |  |
| $\mathbf{1 7}$ | 0,688 | 1,333 | 1,743 | 2,110 | 2,567 | 2,898 |  |
| $\mathbf{1 8}$ | 0,688 | 1,330 | 1,740 | 2,101 | 2,552 | 2,878 |  |
| $\mathbf{1 9}$ | 0,687 | 1,328 | 1,729 | 2,093 | 2,539 | 2,861 |  |
| $\mathbf{2 0}$ | 0,687 | 1,325 | 1,725 | 2,086 | 2,528 | 2,845 |  |
| $\mathbf{2 1}$ | 0,686 | 1,323 | 1,721 | 2,080 | 2,518 | 2,831 |  |
| $\mathbf{2 2}$ | 0,686 | 1,321 | 1,717 | 2,074 | 2,508 | 2,819 |  |
| $\mathbf{2 3}$ | 0,685 | 1,319 | 1,714 | 2,069 | 2,500 | 2,807 |  |
| $\mathbf{2 4}$ | 0,685 | 1,318 | 1,711 | 2,064 | 2,492 | 2,797 |  |
| $\mathbf{2 5}$ | 0,684 | 1,316 | 1,708 | 2,060 | 2,485 | 2,787 |  |
| $\mathbf{2 6}$ | 0,684 | 1,315 | 1,706 | 2,056 | 2,479 | 2,779 |  |
| $\mathbf{2 7}$ | 0,684 | 1,314 | 1,703 | 2,052 | 2,473 | 2,771 |  |
| $\mathbf{2 8}$ | 0,683 | 1,313 | 1,701 | 2,048 | 2,467 | 2,763 |  |
| $\mathbf{2 9}$ | 0,683 | 1,311 | 1,699 | 2,045 | 2,462 | 2,756 |  |
| $\mathbf{3 0}$ | 0,683 | 1,310 | 1,697 | 2,042 | 2,457 | 2,750 |  |
| $\mathbf{4 0}$ | 0,681 | 1,303 | 1,684 | $\mathbf{2 , 0 2 1}$ | 2,423 | 2,704 |  |
| $\mathbf{6 0}$ | 0,679 | 1,296 | 1,671 | 2,000 | 2,390 | 2,660 |  |
| $\mathbf{1 2 0}$ | 0,677 | 1,289 | 1,658 | 1,980 | 2,358 | 2,617 |  |
| $\infty$ | 0,674 | 1,282 | 1,645 | 1,960 | 2,326 | 2,576 |  |
|  |  |  |  |  |  |  |  |

## APPENDIX 20

## 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 | 0.03680 | 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 |
| -1.8 | 0.03593 | 0.03515 | 0.03438 | 0.03362 | 0.03288 | 0.03216 | 0.03144 | 0.03074 | 0.03005 | 0.02938 |
| -1.7 | 0.04457 | 0.04363 | 0.04272 | 0.04182 | 0.04093 | 0.04006 | 0.03920 | 0.03836 | 0.03754 | 0.03673 |
| -1.6 | 0.05480 | 0.05370 | 0.05262 | 0.05155 | 0.05050 | 0.04947 | 0.04846 | 0.04746 | 0.04648 | 0.04551 |
| -1.5 | 0.06681 | 0.06552 | 0.06426 | 0.06301 | 0.06178 | 0.06057 | 0.05938 | 0.05821 | 0.05705 | 0.05592 |
| -1.4 | 0.08076 | 0.07927 | 0.07780 | 0.07636 | 0.07493 | 0.07353 | 0.07215 | 0.07078 | 0.06944 | 0.06811 |


| $\mathbf{- 1 . 3}$ | 0.09680 | 0.09510 | 0.09342 | 0.09176 | 0.09012 | 0.08851 | 0.08691 | 0.08534 | 0.08379 | 0.08226 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{- 1 . 2}$ | 0.11507 | 0.11314 | 0.11123 | 0.10935 | 0.10749 | 0.10565 | 0.10383 | 0.10204 | 0.10027 | 0.09853 |
| $\mathbf{- 1 . 1}$ | 0.13567 | 0.13350 | 0.13136 | 0.12924 | 0.12714 | 0.12507 | 0.12302 | 0.12100 | 0.11900 | 0.11702 |
| $\mathbf{- 1 . 0}$ | 0.15866 | 0.15625 | 0.15386 | 0.15151 | 0.14917 | 0.14686 | 0.14457 | 0.14231 | 0.14007 | 0.13786 |
| $\mathbf{- 0 . 9}$ | 0.18406 | 0.18141 | 0.17879 | 0.17619 | 0.17361 | 0.17106 | 0.16853 | 0.16602 | 0.16354 | 0.16109 |
| $\mathbf{- 0 . 8}$ | 0.21186 | 0.20897 | 0.20611 | 0.20327 | 0.20045 | 0.19766 | 0.19489 | 0.19215 | 0.18943 | 0.18673 |
| $\mathbf{- 0 . 7}$ | 0.24196 | 0.23885 | 0.23576 | 0.23270 | 0.22965 | 0.22663 | 0.22363 | 0.22065 | 0.21770 | 0.21476 |
| $\mathbf{- 0 . 6}$ | 0.27425 | 0.27093 | 0.26763 | 0.26435 | 0.26109 | 0.25785 | 0.25463 | 0.25143 | 0.24825 | 0.24510 |
| $\mathbf{- 0 . 5}$ | 0.30854 | 0.30503 | 0.30153 | 0.29806 | 0.29460 | 0.29116 | 0.28774 | 0.28434 | 0.28096 | 0.27760 |
| $\mathbf{- 0 . 4}$ | 0.34458 | 0.34090 | 0.33724 | 0.33360 | 0.32997 | 0.32636 | 0.32276 | 0.31918 | 0.31561 | 0.31207 |
| $\mathbf{- 0 . 3}$ | 0.38209 | 0.37828 | 0.37448 | 0.37070 | 0.36693 | 0.36317 | 0.35942 | 0.35569 | 0.35197 | 0.34827 |
| $\mathbf{- 0 . 2}$ | 0.42074 | 0.41683 | 0.41294 | 0.40905 | 0.40517 | 0.40129 | 0.39743 | 0.39358 | 0.38974 | 0.38591 |
| $\mathbf{- 0 . 1}$ | 0.46017 | 0.45620 | 0.45224 | 0.44828 | 0.44433 | 0.44038 | 0.43644 | 0.43251 | 0.42858 | 0.42465 |
| $\mathbf{- 0 . 0}$ | 0.50000 | 0.49601 | 0.49202 | 0.48803 | 0.48405 | 0.48006 | 0.47608 | 0.47210 | 0.46812 | 0.46414 |

## APPENDIX 21

## Chi-Square Table

| $\mathbf{d k}$ | Significant level |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{5 0 \%}$ | $\mathbf{3 0 \%}$ | $\mathbf{2 0 \%}$ | $\mathbf{1 0 \%}$ | $\mathbf{5 \%}$ 鱼 | $\mathbf{1 \%}$ |
| $\mathbf{1}$ | 0,455 | 1,074 | 1,642 | 2,706 | 3,841 | 6,635 |
| $\mathbf{2}$ | 1,386 | 2,408 | 3,219 | 4,605 | $\mathbf{5 , 9 9 1}$ | 9,210 |
| $\mathbf{3}$ | 2,366 | 3,665 | 4,642 | 6,251 | 7,815 | 11,341 |
| $\mathbf{4}$ | 3,357 | 4,878 | 5,989 | 7,779 | 9,488 | 13,277 |
| $\mathbf{5}$ | 4,351 | 6,064 | 7,289 | 9,236 | 11,070 | 15,086 |
| $\mathbf{6}$ | 5,348 | 7,231 | 8,558 | 10,645 | 12,592 | 16,812 |
| $\mathbf{7}$ | 6,346 | 8,383 | 9,803 | 12,017 | 14,067 | 18,475 |
| $\mathbf{8}$ | 7,344 | 9,524 | 11,030 | 13,362 | 15,507 | 20,090 |
| $\mathbf{9}$ | 8,343 | 10,656 | 12,242 | 14,684 | 16,919 | 21,666 |
| $\mathbf{1 0}$ | 9,342 | 11,781 | 13,442 | 15,987 | 18,307 | 23,209 |
| $\mathbf{1 1}$ | 10,341 | 12,899 | 14,631 | 17,275 | 19,675 | 24,725 |
| $\mathbf{1 2}$ | 11,340 | 14,011 | 15,812 | 18,549 | 21,026 | 26,217 |
| $\mathbf{1 3}$ | 12,340 | 15,119 | 16,985 | 19,812 | 22,362 | 27,688 |
| $\mathbf{1 4}$ | 13,339 | 16,222 | 18,151 | 21,064 | 23,685 | 29,141 |
| $\mathbf{1 5}$ | 14,339 | 17,222 | 19,311 | 22,307 | 24,996 | 30,578 |
| $\mathbf{1 6}$ | 15,338 | 18,418 | 20,465 | 23,542 | 26,296 | 32,000 |
| $\mathbf{1 7}$ | 16,338 | 19,511 | 21,615 | 24,769 | 27,587 | 33,409 |
| $\mathbf{1 8}$ | 17,338 | 20,601 | 22,760 | 25,989 | 28,869 | 34,805 |
| $\mathbf{1 9}$ | 18,338 | 21,689 | 23,900 | 27,204 | 30,144 | 36,191 |
| $\mathbf{2 0}$ | 19,337 | 22,775 | 25,038 | 28,412 | 31,410 | 37,566 |
| $\mathbf{2 1}$ | 20,337 | 23,858 | 26,171 | 29,615 | 32,671 | 38,932 |
| $\mathbf{2 2}$ | 21,337 | 24,939 | 27,301 | 30,813 | 33,924 | 40,289 |
| $\mathbf{2 3}$ | 22,337 | 26.018 | 28,429 | 32,007 | 35,172 | 41,638 |
| $\mathbf{2 4}$ | 23,337 | 27,096 | 29,553 | 33,196 | 35,415 | 42,980 |
| $\mathbf{2 5}$ | 24,337 | 28,172 | 30,675 | 34,382 | 37,652 | 44,314 |
| $\mathbf{2 6}$ | 25,336 | 29,246 | 31,795 | 35,563 | 38,885 | 45,642 |
| $\mathbf{2 7}$ | 26,336 | 30,319 | 32,912 | 36,741 | 40,113 | 46,963 |
| $\mathbf{2 8}$ | 27,336 | 31,391 | 34,027 | 37,916 | 41,337 | 48,278 |
| $\mathbf{2 9}$ | 28,336 | 32,461 | 35,139 | 39,087 | 42,557 | 49,588 |
| $\mathbf{3 0}$ | 29,336 | 33,530 | 36,250 | 40,256 | 43,773 | 50,892 |
|  |  |  |  |  |  |  |

## PHOTOS OF THE RISEARCH

* The researcher gave the explanation about the indicator in Vocabulary in Experimental class

* The students' did Pre-Test in experimental class

* The students' did Post Test in experimental class

$>$ The researcher gave the explanation about the indicator Vocabulary in Control Class

$>$ The students' did Pre-Test in Control class

$>$ The students' did Post Test in Control class



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