The Comparative Study Between the Result of Teaching Classroom Objects by Using Guessing Game and Using Picture at SDN 200205 Padangsidimpuan

A THESIS

Submitted to State College for Islamic Studies (STAIN) Padangsidimpuan as a partial Fulfillment of Requirement for Degree of Islamic Education Scholar (S.Pd.I) in English Program

By:

SEPTI ANZANI PUTRI HARAHAP
Reg. NO: 08 3400036

ENGLISH EDUCATION STUDY PROGRAM

DEPARTEMENT OF TARBIYAH
STATE COLLEGE FOR ISLAMIC STUDIES
STAIN PADANGSIDIMPUAN
2013

The Comparative Study Between The Result of Teaching Vocabulary by Using Guessing Game and Using Picture at SDN 200205 Padangsidimpuan
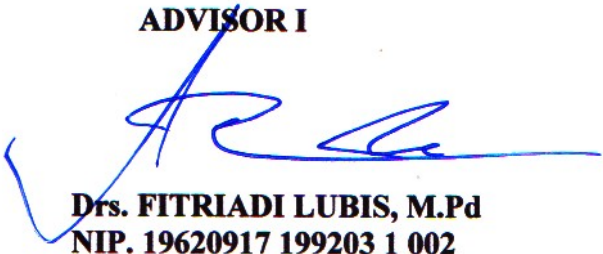
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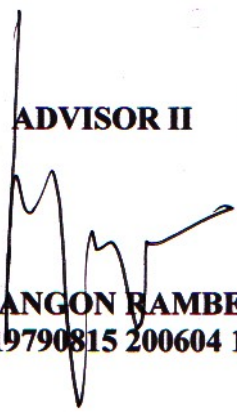
By:

SEPTI ANZANI PUTRI HARAHAP
Reg. NO: 08 3400036

ADVISOR I

Drs. FITRIADI LUBIS, M.Pd
NIP. 19620917 199203 1 002

ADVISOR II

Acc Munagosoh 07-06-2013

SOJUANGON RAMBE, M.Pd
NIP: 19790815 200604 1 003

ENGLISH EDUCATION STUDY PROGRAM

TARBIYAH DEPARTEMENT
THE STATE COLLEGE FOR ISLAMIC STUDIES
STAIN PADANGSIDIMPUAN
2013

Hal   : Sidang Skripsi

         a.n. SEPTI ANZANI PUTRI HARAHAP

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Padangsidimpuan, 20 Juni 2013

Kepada Yth.

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Padangsidimpuan

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      Setelah membaca, menelaah dan memberikan saran-saran untuk perbaikan seperlunya terhadap skripsi a.n SEPTI ANZANI PUTRI HARAHAP yang berjudul *The Comparative Study between the Result of Teaching Vocabulary by using Guessing Game and using Picture at SDN 200205 Padangsidimpuan*, maka kami berpendapat bahwa skripsi ini sudah dapat diterima untuk melengkapi tugas-tugas dan memenuhi syarat-syarat guna mencapai gelar Sarjana Pendidikan Islam (S.Pd.I) dalam Ilmu Tadris Bahasa Inggris jurusan Tarbiyah STAIN Padangsidimpuan.

      Untuk itu dalam waktu yang tidak lama kami, harapkan saudari tersebut dapat dipanggil untuk mempertanggungjawabkan skripsinya dalam sidang Munaqasyah.

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Wassalamu 'Alaikum Wr. Wb.

PEMBIMBING I

Drs. FITRIADI LUBIS, M.Pd.
NIP. 19620917 199203 1 002

PEMBIMBING II

SOJUANGON RAMBE, S.S., M.Pd.
NIP. 19790815 200604 1 003

SURAT PERNYATAAN MENYUSUN SKRIPSI SENDIRI

Saya yang bertanda tangan di bawah ini:

Nama	:	**SEPTI ANZANI PUTRI HARAHAP**
NIM	:	08 304 0036
Jurusan/Program Studi	:	TARBIYAH/ TADRIS BAHASA INGGRIS-1
Judul Skripsi	:	**THE COMPARATIVE STUDY BETWEEN THE RESULT OF TEACHING VOCABULARY BY USING GUESSING GAME AND USING PICTURE AT SDN 200205 PADANGSIDIMPUAN**

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SEPTI ANZANI PUTRI HARAHAP
NIM. 08 340 0036

DECLARATION LETTER OF WRITING OWN THESIS

NAME   : SEPTI ANZANI PUTRI HARAHAP

Registration Number   : 08 304 0036

Department/Study Program : TARBIYAH/ TADRIS BAHASA INGGRIS-I

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SEPTI ANZANI PUTRI HARAHAP
Reg. No. 08 340 0036

DEWAN PENGUJI
SIDANG MUNAQASYAH SKRIPSI

Nama   : SEPTI ANZANI PUTRI HARAHAP
NIM   : 08 3400036
Judul Skripsi : The Comparative Study Between The Result of Teaching Vocabulary
                (Classroom Object) by Using Guessing Game and Using Picture at
                SDN 200205 Padangsidimpuan

Ketua,

Dr. Erawadi, M.Ag
NIP. 19720326 199803 1 002

Sekretaris,

Eka Sustri Harida, M.Pd
NIP. 19750917 200312 2 002

Anggota

1. Dr. Erawadi, M.Ag
   NIP. 19720326 199803 1 002

2. Eka Sustri Harida, M.Pd
   NIP. 19750917 200312 2 002

3. Drs. Fitriadi Lubis, M.Pd
   NIP. 19620917 199203 1 002

4. Yusni Sinaga, S.Pd, M.Hum
   NIP. 19700715 200501 2 010

Pelaksanaan Sidang Munaqasyah:
Di   : Padangsidimpuan
Tanggal   : 20 Juni 2013
Pukul   : 09.00 s.d 12.00Wib
Hasil/Nilai : 73,75 (B)
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PENGESAHAN

Skripsi berjudul : **The Comaparative Study Between The Result of Teaching Vocabulary by using Guessing Game and Using Picture at SDN 200205 Padangsidimpuan**

Ditulis Oleh : **Septi Anzani Putri Harahap**

Nim : **08 340 0036**

Telah dapat diterima sebagai salah satu syarat untuk memperoleh gelar Sarjana Pendidikan Islam (S.Pd.I).

Padangsidimpuan, 25 Maret 2013

Ketua

DR. H. IBRAHIM SIREGAR, MCL.
NIP. 19680704 200003 1 003

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The writer

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SEPTI ANZANI PUTRI HARAHAP
Reg. No. 08 340 0036

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Name : SEPTI ANZANI PUTRI HARAHAP
Reg.No : 08.340 0036
Department/Study Program : Tarbiyah/TBI-1
Title of the Thesis : THE COMPERATIVE STUDY BETWEEN THE RESULT TEACHING VOCABULARY BY USING GUESSING GAME AND USING PICTURE AT SDN 200205 PADANGSIDIMPUAN

ABSTRACT

The weakness of students' ability in vocabulary is attributable of using unsuitable technique. Some techniques which can improve the students' ability in vocabulary are guessing game and picture. Aim of this research is to know whether there is a significant difference of guessing game and picture on the students' ability in vocabulary to the fourth grade students of SDN 200205 Padangsidimpuan.

This research used quantitative experiment. The population of this research is the fourth grade students of SDN 200205 Padangsidimpuan, which consist of 92 students. All of the students from the population were taken as the sample of the research. The sample was divided into two classes. The first class forty six students as the experimental class was taught by using guessing game and the second class forty six students as the experimental class was taught by using picture. Result of the observation was analyzed by using t-test formula.

Researcher found that experimental class by using guessing game in post-test show that the mean score is 81.06 with the highest score is 85 and the lowest score is 50. While, in experimental class by using picture the mean score is 75.55 with the highest score is 80 and the lowest score is 50. The coefficient of t_{count} is 3.27 and it is compared with $t_{table,}$ were the coefficient of t_{table} is 1.66. The data analysis showed that students' score in the experimental class by using guessing game was significantly higher than students' score in the experimental class by using picture at the level of significance 5% with the degree of freedom 90. The table at 5 % significant level, it is 1.66, cause t_{count} 3.27 > t_{table}1.66. Therefore, the hypothesis is accepted. It means that there is significant difference of guessing game and picture on the students' ability in vocabulary to the fourth grade students of SDN 200205 Padangsidimpuan.

CHAPTER I

INTRODUCTION

A. Background of the Problems

English in general is a language that used as international language. It is known that English is an important role as a tool of communication among nation. Without English someone will be old fashion because she/he cannot communicate with people around the world, cannot use the technology media and she/he will be lack of information in science world because many scientific books are printed in English. Learning English is applied even in Indonesia; because of Indonesia is one of the developing countries that go in the globalization of free market. So, the Indonesian society should have ability and knowledge about English language to follow the new era.

The national of teaching English in Indonesia nowadays is as needed. To improve ability and knowledge in English language in Indonesian society, government has concluded English as one of the major lesson in national curriculum. It is known that, a curriculum is as a plan for action, or a written document, which includes strategies for achieving desired goals or ends[1]. As a major lesson in national curriculum, it can learn in schools and universities. The teachers are the important role in English teaching process, because the teachers are developed the students' skills. So, the teacher should have ability and knowledge in English education. The purpose of English teaching in Indonesia is to make the students have many skills in English; it is stated as communicative competence.

One of the teaching material that be taught at school is vocabulary. In the context of English, communicative competence includes four major aspects categorize into listening,

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[1]Allan C. Ornstein and Francis P. Hunkins, *Curriculum: Foundations, Principles and Issues* (New Jersey: Englewood Cliff, 2000), p. 6.

reading, speaking and writing. Vocabulary plays an important role because it appears in every language skills and as the element of language vocabulary also taught from elementary school.

Vocabulary is one important aspect in learning a foreign language. Without a proportional amount of vocabulary anyone will get trouble in her speaking, reading, listening, and writing. The acquisition of vocabulary would help people in gaining, understanding, and also enhancing the process of knowledgeable transferred for a better life.

The effect in teaching vocabulary should increase the students' skill in language. Teachers can emphasize the importance of vocabulary early in school and continue to provide students with opportunities to build word skills. One way to do this is to pre-teach key words in all subjects. Multimedia tools are good ways to expose students to new concepts and enhance their desire to build vocabulary skills.

The ability of student in learning vocabulary still low, although government already make a good curriculum and syllabus to increase student's skill. It caused by most of difficulties to teach vocabulary to their students and the student also has no effort to learn well about vocabulary. Based on my preceding research, in fact students in elementary school often find problems in learning new vocabulary. First, they hard to remember new vocabulary. In the class when teacher just mention the new vocabulary to remember on their mind, student already forget it. Second, when student in school learn new vocabulary, they usually do so by writing out the word and the definition several times. Teacher mentions the new vocabulary then tell the meaning of that word, in this case each of students write it down on their books. Do that all the time of course will make student bored with just writing words. The student seems didn't like the process of learning at all.

One factor that can increase vocabulary is a good technique. Teaching vocabulary is not like giving toys to children, it needs more teachers' attention to make the transfer of the vocabulary process easier to grasp and more fun to learn. To do this hard job, teachers are hoped to have ingenuity in teaching by using any technique that already exist in their environment.

Technique is very important in teaching process. It can help teachers to explain the material. It also stimulates students to learn more enthusiastically.

The techniques that can be used in teaching vocabulary are by using media like picture, photo, music, or film. Other technique to teach vocabulary through games, poetry, story, definition/translation, or synonym/acronym also can be used.

The role of guessing game in teaching vocabulary is easy; first start the game, call one student from one team to the chairs at the front of the room. That student will be the Clue Giver; that student will sit in the chair facing the front of the classroom and give the clues to other students.

The role of picture in teaching vocabulary is as easy as using game. Students, especially young learners are very interested to know something colorfully. Picture is not an expensive media. Teacher can browse the picture from internet and printout them. They can also create flashcard by cutting picture from magazine or newspaper.

Based on the background above researcher decided to do a research about teaching vocabulary by guessing games and using picture which is interesting, fun, and cheap with title "**The Comparative Study Between The Result of Teaching Vocabulary by Using Guessing Game and Using Picture at SDN 200205 Padangsidimpuan"**

B. Identification of the Problem

Vocabulary plays an important role because it appears in every language skills. Student should learn vocabulary from elementary school; it begin with part of body, family, vegetables, things at school, animal and others. But teaching vocabulary is not like giving toys to children, it needs more teachers' attention to make the transfer of the vocabulary process easier to grasp and more fun to learn.

Some techniques in teaching vocabulary can be used to explain the vocabularies that have been taught, and every teacher has to determine the best technique to teach or explain the meaning of words. In determination, a teacher needs to consider whether the technique is able to improve students' retention. Here are some techniques for teaching vocabulary; illustration or picture, mime, synonym/antonym, games, poetry etc.

C. Limitation of the Problem

In this research the researcher wants to make a study about how to teach vocabulary for students in elementary school with a compatible technique. There are many techniques that can be used by teacher in teaching vocabulary as mention above, but researcher did not discuss all of the technique. Researcher discussed only two technique to focus this research, they are guessing game and picture.

Due to the broad scope of the problem, this study focused on the use of guessing game as one of a technique and picture as one of visual media in teaching vocabulary at elementary school. The target of this research was the fourth grade of elementary school in the fourth grade in second semester in 2012/2013 was to introduce English vocabulary, especially nouns, more specific is concrete nouns. So, the researcher limited the vocabulary on concrete nouns.

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The researcher chose this technique because both of them are interesting and make the transfer of the vocabulary process easier to grasp an more fun to learn.

D. Formulation of the Problem

Based on limitation of the problem mentioned above, the problem of the research can be formulated as follows;

1. How is the result of teaching vocabulary by using picture?

2. How is the result of teaching vocabulary by guessing game?

3. Which technique is the better on to teaching vocabulary by guessing game and by using picture?

E. The Purposes of the Research

The purposes of the research are as follows:

1. To describe the result in learning vocabulary by guessing game

2. To describe the result in learning vocabulary by using picture

3. To know the better technique in teaching vocabulary between by guessing game and using picture.

F. The Significant of the Research

The result of the research expected to be useful for:

1. For headmaster and English teachers as a tool compare and to improve the science especially about teaching vocabulary by guessing game and using picture at SDN 200205 Padangsidimpuan.

2. For English teachers as information to improve the quality of teaching vocabulary by guessing game and using picture at SDN 200205 Padangsidimpuan.

3. For reader and the other researcher in conducting further research in the same topic.

G. Outline of the Thesis

The researcher is going to organize this research paper in order to make the reader easier to understand:

In chapter I, it consists of; first, background of the problem was explained about the students' ability in learning vocabulary was poor and cause effect. Second, identification of problem was organized all of the students' problems and teachers' problem inside. Third, limitation of problem was researcher's ways to focus this research. Fourth, formulation of problem was arranged some questions about students' ability in reading comprehension at SDN 200205 Padangsidimpuan and also searched the better one of the method. Fifth, purposes of research were arranged some mission of research in reading comprehension mastery and also to find the better one of the both method. Sixth, significances of research was explained to whom was the significances of the research would be useful.

In chapter II, it consists of; first, theoretical description, which explains about concepts of vocabulary, guessing game, and picture. Second, review related findings which talked about the other research which related with this title were done by researchers. Third, framework of thinking was researcher thought of vocabulary, guessing game, and picture and also described of implementation this research. Last, hypothesis was temporary statement in using guessing game and using picture made by researcher.

Chapter III, it consists of; first, research methodology described about schedule and place of research where and when the research was done. Second, method of research discussed about kinds of research. Third, population and sample discuss about amount students as population and how to take the sample. Fourth, procedures of research discussed

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about planning before and after research were done. Fifth, instrument of data collection discussed about how to make the instrument in valid, determined of homogeneity and variant of sample and data analysis used to test the hypothesis.

Chapter IV, it consists of; first, description of the data and discussion which researcher presents about the result of the research. Second, discussion about theory and result of the hypothesis what the researcher found in the research.

Chapter IV, it consists of; first, conclusion and suggestion which researcher anwers formulation of the prolem and hypothesis. Second, suggestion discussed about problem solving which researcher found in this research.

CHAPTER II

REVIEW OF RELATED LITERATURE AND HYPOTHESIS

A. Theoretical Description

Review of related literature involved the systematic identification; location and analysis of documents containing information relate to the research problems. It proposed to determine what has already been done that relates to the topic of the research and provides the understanding and the insight necessary to develop a logical framework in to the topic.

1. Vocabulary

a. Definition and Concept of Vocabulary

Vocabulary is the study of words and how the words are used. Vocabulary is mean talk about words and meaning. Vocabulary is all the words that a person knows or uses[2]. Hornby says vocabulary is one of the most important aspects in learning a language especially English. If you make a grammar and it may be wrong but a very often people will understand you anyway. So, the communication will not go fluently. Mastery vocabulary, many words can be used in communication because in learning language, it must learn or get many words of the target language or in other words. Students who learn English as a new language will try to get many words in order to gain the language completely, and from that language they will know new terms that are useful for them. When we look at the important vocabulary teaching principle, these ideas of multi word units, word families and core meanings will be touched on again.

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[2] A.S. Hornby, *Oxford Learners Pocket Dictionary* (New York: Oxford University Press, 2000), p. 495

Vocabulary is knowledge of words and words meaning. Lehr also said that vocabulary is long lists of words from social studies or science textbooks, spelling words lists, or even the humongous lists of terms to study for collage entrance exams.[3] Vocabulary is very important for communication. If someone has lack of vocabulary she/he will face ineffective communication.

According to Webster Dictionary the definition of Vocabulary is:

1: a list or collection of words or of words and phrases usually alphabetically arranged and explained or defined

2: a sum or stock of words employed by a language, group, individual, or work or in a field of knowledge

3: a list or collection of terms or codes available for use (as in an indexing system)

4**:** a supply of expressive techniques or devices (as of an art form)[4]

Harimurti Kridalaksana stated that, ".Vocabulary is a component of language that maintains all of information about meaning and using word in language.[5]

b. Types of Vocabulary

Vocabulary has divided in the specific reference, such a word.

a. Receptive Vocabulary: Knowing a word involves being able to recognize it when it is heard (What is the sound like?) or when it seen (What does it look like?) and having an expectation of what grammatical pattern the word will occurrence. This

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[3] S. Jones, *Multisensory Vocabulary Instruction,* (Guideliness and Activities, 1999), p. 95.
[4] Merriem Webster, *Webster'sNinth New International Dictionary* (USA : Merriem Webster inc, 1986), p. 1003
[5] Harimurti Kridalaksana, *Kamus Linguistik*, edisi ke-3 (Jakarta;PT Gramedia Pustaka Utama,1993), p.127

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includes being able to distinguish it from word with a similar form and being able to judge if the word form sounds right or look right.

b.   Productive Vocabulary: Knowing a word involves being able to pronounce the word, how to write and to spell it, how to use it in grammatical pattern along with the word in usually collocates with it, it also involves not using the word too often if it is typically a low frequency word and using it in a suitable situation using the word to stand for the meaning it represents and being able to think of suitable substitutes for the word if there any.[6]

Jo Ann Aeborsold and Mary Lee Field Classified Vocabulary into two terms there are:

a. Active Vocabulary refers to items the learner can use appropriately in speaking or writing and it is also called as productive vocabulary, although, in fact, it is more difficult to put into practice. It means that to use the productive vocabulary, the students are supposed to know how to pronounce it well, they must know and be able to use grammar of the language target, they are also hoped to familiar with collocation and understand the connotation meaning of the words. This type is often used in speaking and writing skill.

b. Passive Vocabulary refers to a language items that can be recognizes and understood in the context of reading or listening and also called as receptive

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[6]ISP Nation, *Teaching and Learning Language* (New York: New Burry house,1990),p.29

Vocabulary.[7] Passive Vocabulary or comprehension consists of the wordscomprehended by the people, when they read and listen.

From the explaining above, we know that every experts in every book is different in classifying the kinds of vocabulary, because every person has different ways in showing and telling their opinions and ideas. It means that vocabulary is of two kinds function and content words.

c. **The Use of Vocabulary**

Vocabulary is important in case it could helps the students to enjoy their classes. One who masters enough vocabulary will find fewer difficulties than those who have fewer vocabularies. When they read a certain text, they will easily get the information from it since they can understand every word in the text. On the othershand, those who lack of vocabulary will face a lot of problems. Mastery of vocabulary will be useful for the process of achieving language- teaching objectives.

That is the mastery of language skills (Listening, Speaking, Reading, and Writing).If we want to communicate with others in certain language, we must master the language they belong to especially to know enough vocabulary of those language.Yang Zhihong who say that .Words are the basic unit of language from supports it.Without vocabulary, one cannot communicate to effectively or express idea.[8]

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[7]Jo Ann Aeborsold and Mary lee Field, *From Reader to Reading Teacher* (New York: Cambridge University Pres,1977),p.139

[8]Yang Zhihong*, .Learning Words.* English Teaching Forum.Vol.38.No.3 July 2000

2. **Technique**

   a. **Definition of Technique**

   There are some definitions of technique based on Webster Encyclopedia:

   1. The manner in which technical details are treated (as by a writer) or basic physical movement are used (as by a dancer); also; ability to treat such details or use such movement (good piano technique)

   2. A body of technical methods (as in a craft in scientific research)

   3. A method of accomplishing a desire aim

   4. A method or body of methods for accomplishing a desire end (new surgical technique)[9]

   According to Reverso Dictionary it says that definitions of technique are:

   1. The systematic procedure by which a complex or scientific task is accomplished.

   2. The way in which the fundamental, as of an artistic work, are handled.

   3. Skill or command in handling such fundamental

   4. A practical method, skill, or art applied to a practical or mechanical skill.[10]

   b. **Principle of Technique**

   There are 3 principles for technique in teaching vocabulary:

   1. Clear communication with students, communication between students and teacher encouraged. Opportunities for one to one discussion (student/teacher) is provide.

   2. Stimulating learning environment, innovative technique and method of design and delivery of content and course material undertaken. Variety of teaching technique and learning activities are providing.

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[9] Merriem Webster, *Webster's Ninth New International Dictionary* (USA: Merriem Webster Inc, 1986), p. 993
[10] Reverso, *Reverso International Dictionary Eleventh,* (New York: Reverso Inc, 2008), p. 24

3. Evaluates, monitors and improves teaching practices, regular feedback from student sought and reflection on teaching practice occurs regularly. [11]

There are a number of ways or techniques to use as guide the students' speaking. And there are some principles to design those techniques, namely:

a. Techniques should cover the spectrum of learner needs, from language-based focus on accuracy to message-based focus on interaction, meaning, and fluency.

b. Techniques should be intrinsically motivating. Motivation is commonly thought of as an inner drive, impulse, emotion, or desire that moves one to a particular action.[12] It is probably the most often catch-all for explaining the success of failure of virtually any complex task. For countless studies and experiments in human learning have shown that motivation is a key to learning. So that, try the techniques all times to appeal to students' ultimate goals, interest of their motivation, to their need in teaching learning process.

c. Techniques should encourage the use of authentic language in meaningful contexts.

It is not easy to keep coming up with meaningful interaction but by searching resource material, although it takes energy and creativity to devise authentic contexts and meaningful interaction, it can be structured to provide a sense of authenticity.

d. Provide appropriate feedback and correction.

English as Foreign Language (EFL) the use of language is not available in the society such as in our country Indonesia. In this situation, students are totally

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[11] H. Douglas Brown. *Teaching By Principle*, (New Jersey: Prentice-Hall,1994), p. 254.
[12] H. Douglas Brown. *Principle of Language Learning and Teaching*, (New Jersey: Prentice Hall, 2000), p. 112.

dependent on the teacher for useful linguistic feedback. It is important that we take advantage of our knowledge of English to inject the kinds of corrective feedback that are appropriate for the moment. [13]

c. Type of Techniques in Teaching Vocabulary

Jeremy stated that there are three techniques in teaching vocabulary:

1. Visual techniques. These pertain to visual memory, which is considered especially helpful with vocabulary retention. Learners remember is better than material that has been presented by mean of visual aids.

2. Verbal explanations. This pertains to the use of illustrative situations, synonym, opposites, scales, definition, and categories.

3. Use of dictionaries. Using a dictionary is another technique if finding out meanings of unfamiliar words and expressions. Examples of dictionaries are bilingual, monolingual, pictorial, thesauri and etc. [14]

Based on the theory of the aspect above, researcher concludes that vocabulary is factor that can influence the ability of the students in English skill are techniques there are visual technique, verbal explanation and use of dictionaries for fluency learn English specially vocabulary mastery.

Furthermore, Nunan states that there are several ways to present vocabulary in class:

1. Illustration: this is very useful for more concrete words (dog, rain, tall) and for visual learner.

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[13] Jeremy Harmer. *How to Teach English*, (London: Longman, 1998), p. 88.
[14] Jeremy Harmer, *Op. Cit*, p. 156

2. Mime: this lends itself particularly well to action verbs and it can be fun and memorable.

3. Synonym/ Antonyms/Gradable items: using the words a student already knows can be effective for getting meaning across.

4. Definition: checking the dictionaries

5. Translation

6. Games

7. Context: clear context when the words is used[15]

   Then, Nunan also suggests several activities in teaching vocabulary:

1. Illustrate the words

2. Play "quick draw"

3. Play "vocabulary charades"

4. Give credit for finding the word used in the real word

5. Use "fill in the blank" exercise[16]

   From the theories above researcher conclude that every teaching technique of vocabulary needs media or method. And method should be appropriate with the age of the learner. Using verbal explanation can make the students more understand how to use the new contextually, because the children can be more understand what word it means.

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[15] David Nunan, *Practical English Language Teaching*, *A Textbook For Teachers*, (America: The MC. Grow Hill Companies, 2003), p. 88.
[16] David Nunan, *Op. Cit*, p. 91

3. Guessing Game

a. Definition and Concept of Guessing Game

According to Klippel, the basic of rule of guessing game is eminently simple one person knows something that another one to find out.[17] Wright and Buck say, essentially, in guessing and speculating games, someone knows something and other must find out what it is.[18] In addition, according to Merriem Webster, guessing game is game which participates competing individually or team in the identification of something indicate obscurely (as in riddles or charades).[19]

Based on the definition, it can be conclude that guessing game is a game in which a person or participant knows something and competes individually or in a teal to identify or to find out. There are many concepts of guessing games, which can be applied in teaching vocabulary.

b. Principles of Guessing Game

According to Lee: Among them are numbers guessing that can be played at various levels: 1. Guess what is it? Is it…..? 2. Guess Who I am? What is my name? 3. Guess what is there in my bag today? 4. Guess What is it?Thendescription of each concept is as follow:

1) Guess what is it? Is it…..?

The students' things of an object or a person the class knows the name of, and the other ask question, putting up their hand writing to be called on: 1. Is a green. Is it Minah's desk? 2. Is it my face? 3. Is it the Cinema? 4. Is it my

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[17] Friederike Klippel, *Keep Talking* (USA: Cambridge University Press, 1994), p. 73

[18] David Betteridge and Michael Bucky, *Games for Language Learning,* New Edition (Sidney Cambridge University Press, 1990), p.169

[19] Merriem Webster, *Webster's Third New International Dictionary* (USA: Merriem Webster inc, 1986), p. 108

mother who came this evening? 5. It is your book... The first guess correctly takes the thinker's place. After such a game has been successfully played by the class as a whole, it can be played in groups or even in pairs. The learner who has thought of something may be questioned by member of another, to keep the whole class active.

2) Guess Who I am? What is my name?

Everybody imagines himself to be somebody else, a living well known locally, nationally or internationally or a historical figure such as Napoleon, Ghandi, Julius Caesar, Galileo, etc. Each makes up sentences about himself, e.g. 1. I lived……about……years ago. I was a king/poet/general/scientist, etc. There is not much difficulty in guessing, but it should not to be made too easy (e.g. one should not say, if one is Shakespeare. I lived in Stratford o Avon and wrote Hamlet).

3) Guess what is there in my bag today?

Alternatively: 1.What is in my bag today? 2. What have I got in my bag today? (This can be teachers or anybody' bag not doubt specially prepared). The students guess, for instance.

There's an apple / photograph / a mirror / a handkerchief / a ticket / a doll, etc.

and the owner of the bag says,

No, there's no a…….or Yes, there's a…….

and brings it out and perhaps ask

What colors is it? Or is it a bag…..or small…..?

at an appropriate level plurals come in naturally here, e.g.

There some…….in my bag

4) Guess Where is it?

Students turn round the close their eyes while a small object or several object such as coin, a ring, a sweet, a doll, is hidden. Question: 1.Is it behind the cupboard? 2. Is it in Mr. Chairil's bag? 3. Is it mom's desk? 4. Is it in your shoe? 5. Is it under those books / etc. Each student makes at least one guess. Statements can be made instead of question: It is behind the cupboard / in Mr. Chairil's pocket, etc.[20]

c. Purposes of Guessing Game

Games provide fun and relax while remaining very much within the framework of language learning. It is expected for shy or slow learners can be active participants to show their ability and find their confidence in communicating in the foreign language. Among many techniques of guessing in teaching vocabulary, guessing games can be applied in the teaching of vocabulary. This assumption is beside on some experts' comments. In fact, there are many categories of guessing games. Patricia and Amato say: Although the categories can overlap, the games here offered her are dividend into the

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[20]DavidBetteridge and Michael Buckby,*Games for Language Learning* , New Edition (Sidney Cambridge University Press, 1990), p. 173

following types depending on their emphasis: non-verbal games, board-advancing games, treasure hunt and guessing games.[21]

According tom Richard – Amato, "Guessing games can be used to develop or reinforce concept, to add diversion to regular activities, or just to break the ice. However, the most important function is to give practice in communication."[22]

It says that guessing games give students do not feel bored during learning process. Nevertheless, the most important thing is to give the students in practicing their English, they also add that: Guessing games can be painless to develop or reinforce any number concepts. "Guessing what I am," Guess who I am" for example, can be used teach about animals profession or people in different age groups (baby, child, teenager, young adult, elderly person).

Those statements say that by given some concepts of guessing games like "Guess what I am" or "Guess who I am". The teacher can teach many kinds of topics such as about animals, profession or people. Silver says, "Real guessing game provides the students with much needed practice in formulating questions, an essential skill that does not always receive sufficient attention."[23]

Based on the statement above, we can conclude that guessing games give students more chance in formulating question. But we know that language classes are spent answering questions puts forth by the teacher or text book. This idea is also supported by Silver: "Language classes are often inadvertently structured so that most of the student speaking time is spent answering questions put forth by

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[21]Patricia, Richard – Amato,*Making it Happened: Interaction in The Second LanguageClassroom*, (New York and London: Longman, 1988), p. 156

[22]Patricia , Richard – Amato. *Op. Cit.*, p. 158

[23]Stephen M. Silver, *Guessing for the Classroom and the English Speaking Club Selected Articles from the English Teaching Forum.* 1980 – 1983, p. 244

teacher or text book: as a result the students often have difficulty in forming own question."[24]

d. Procedure of Teaching

1. The teacher ask students to get prepared and give few time to describe the word that given to them.

2. Teacher ask student to come forward in front of the class one by one and describe the word to all of the participants have to guess the word based on the clue that have been given.

3. The word should be guessed. If it haven't the teacher ask another students who has same card to describe it more clearly and detail.

4. The student give clues to other, for example, "it is white, thin, long and we used it to writing or drawing on the blackboard.

e. Advantages of Guessing Games

Some of the advantages of using teaching speaking using guessing games are as follows:

1. Using guessing games make students more pleasure from regular.

2. Using guessing games can encourage the students to communicate in English because the games are combinations between language practice with fun and excitement.

3. Guessing games can practice the students' ability in forming many kind of vocabulary.

Huyen state several advantages of using games in teaching vocabulary:

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[24]Stephen M. Silver. *Op. Cit.*, p. 158

1. Games bring in relaxation and fun for student, it help them learn and retain new words more easily.

2. Games usually involve friendly competition and they keep learners interested.

3. Vocabulary games bring real world context into the classroom, and enhance students' use of English in a flexible, communicative way.

f. Disadvantages of Guessing Games

Some of the weakness teaching vocabularies by guessing games are:

1. In applying guessing games, the teacher needs the students who are skillful formulating question from dialogue.

2. In applying guessing games, the teacher needs the students more carefully to make communication.

3. In applying guessing games, the teacher needs the students' more controlling how to make right pronunciation.

4. **Picture**

   a. **Definition and Concept of Picture**

   Jean L. Mckenchnie defines picture in Webster dictionary that "Picture is an image, or likeness of an object, person, or scene produce on a flat surface, especially by painting, drawing or photography.[25]

   Meanwhile according to Andrew Wright, "Picture is not just an aspect ofmmethod but through its representation of place, object, and people, it is essential part of the overall experiences".[26]

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[25]Merriem Webster,*Webster's Third New International Dictionary*(USA : Merriem Webster inc, 1986), p.1357

[26]Andrew Wright, *Picture For Language, learning*: Cambridge Handbook for Language Teacher(USA: Cambridge University Press,1989),p.29

Vernon S Gerlach stated: "Pictures are a two dimension visual representation of person, places, or things. Photograph prints are most common, but sketches, cartoons, murals, cut outs, charts, graphs and maps are widely used." A picture may not only be worth a thousand words it is may also be worth a thousand years or a thousand miles. Through pictures, learner can see people, place and things from areas for outside their own picture can also represent image from ancient times or portray the future.[27]

b. Principe of Pictures

1) Picture flashcards

Pictures according to their size into three 'key'categories:

- "Large (20x30 cm): useful for whole-class work"

- "Medium (10x15 cm): useful for group-work"

- "Small (5x5 cm): useful for games and other group-work activities"[28]

This classification applies to picture flashcards as well. I have simplified Wright'sclassification and divided them into two groups only. The first group covers "Big flashcards" (about 15x20cm or larger), typically used by the teacher for whole-classactivities such as presenting new language, controlled practice or as prompts forspeaking activities. The second group then covers "small picture flash cards" (smallerthen about 15x20cm), usually used by students for working individually or for gamesand activities in pairs or groups.

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[27]VernonGerlach and Donald P.Emily, *Teaching and Media a Systematic Approach 2nd*(New Jersey: Prentice Hall),1980,p.273

[28]Andrew Wright, *Picture For Language, learning*: Cambridge Handbook for Language Teacher(USA: Cambridge University Press,1989),p.97

2) Drawing

Drawing finds huge potential in teaching languages. I must agree with Wright that in the first place, simple drawings can possibly substitute other forms of pictures.Although some teachers may not be exactly proficient in drawing, they areeventually bound to find a way of drawing simple pictures for classroom use. Wright stated that drawings "provide an immediately available source of pictorial material for the activities. Students and teachers drawings also have a special quality, which lies in their immediacy and their individuality."[29]

The element of individuality might have a significant impact on remembering,whether it is a unique expression of the teacher or even better, the expression of students when creating the pictures themselves.

3) Wall Picture and Poster

Wall pictures are another valuable visual material for language classes. In thefirst place,they can be displayed in the classroom to set English (or foreign in general)environment andthenthey function as another source of language to be absorbed bystudents in the process of natural acquisition. Furthermore, they will find their use bothin presentation of new language and controlled practice.

Wright specified in their characteristics of wall-pictures that these are often complex pictures, illustrating a scene and containing lots of objects and

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[29]Andrew Wright *Op. Cit.*, p. 128

details. "They are big enough to be seen by the whole class and they can be used instantly and repeatedly."[30]

Due to their character, they are obviously suitable for presentation of newlanguage. They put vocabulary into context and therefore make the presentationmeaningful, which is highly recommended for successful retention of new words.

There are various types of pictures to be used for language learning, practicingand organizing. They differ regarding their size, form and origin, which makes them fitfor a number of activities depending on their type. For several reasons, they helpstudents remember the words better and they help the teacher to make the lesson moreinteresting and beneficial.

c. **The Use of Picture**

There are five roles of pictures:

a. Pictures can motivate the students and make him or her want to pay attentionand want to take part.

b. Pictures contribute to the context in which the language is being used. Theybring the world into the classroom.

c. The pictures can be described an objective way or interpreted or responded tosubjectively.

d. Pictures can cue responses to questions or cue substitutions through controlpractice.

e. Pictures can stimulate and provide information to be referred to in conversation,discussion and story telling beside Horse five roles in using

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[30]Andrew Wright *Op. Cit.*, p. 131

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picture, there aresix reasons why pictures helpful in teaching learning process.

There are many reasons for using pictures in language teaching. As Wright pointed out, "They are motivating and draw learners' attention."[31] This fact will berepeatedly demonstrated in the Practical Part of this thesis. Furthermore, Wright refers to the fact that they provide a sense of the context of the language and give aspecific reference point or stimulus.

d. Procedure of Teaching

1.   The teacher held up a flashcard so all of the students can see it clearly. Teacher says "do you know what this is?"

2.   The teacher said a word on the flashcards clearly. For example, "a rubber"

3.   The teacher said a word more than once. The aim that the students can pronounce it well.

4.   The teacher asks the student to repeat the word.

5.   The teacher continues with the other words.

6.   The teacher holds up more than one flashcards and gives a question for each flashcards for the students. For example, "what is this?" or "is this a bag?"

7.   The teacher put all the flashcards on the floor or table then teacher says one word for example, "a chalk" the students should find it. The first students who find it will be the winner.

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[31]Andrew Wright *Op. Cit.,* p. 92

e. **Advantages of Picture**

There are some advantages of using picture in teaching English to teach many aspects of language effectively.

1. They can be used for vocabulary development. Since everything cannot be brought into the classroom, flashcard and posters provide an opportunity to approximate reality and present new vocabulary to the students. One can do direct vocabulary teaching through the pictures on the card and indirect too as one can build thematic maps associated with the word/object/picture/scene or situation. The possibilities are endless.

2. One can use the flashcard effectively to teach grammar in context. Depending on what the picture illustrates the teacher can find an opportunity to convert it into an inactive grammar class-daily routine of A or B/ narrating a story/ what might happen ater now/ what ought to have been done/ what could be the reason (of the situation occurring) etc. it all depends on a judicious and creative use of a flashcard.

3. Picture can be effectively used for story building too.[32]

f. **Disadvantages of Picture**

1. Cannot depict motion as film does.

2. If not unique, can seem uninteresting to students

3. Depicting a specific purpose might be difficult to locate.[33]

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[32] Shefali Ray, *Question and Answer of Picture* (New Jersey: Prentice Hall), 2007, p.73
[33] Ibid, p. 73

B. The Review of Related Findings

The researcher findthe related search as follows:

A Case Study at MadinahKid.s School Kindergarten Serpong- Tangerang by Leni Yuslenni with tittle Teaching Vocabulary through Pictures to the Kindergarten Students.This study is conducted in the form of a survey. This study is qualitative in nature. The main purposes of this study are looking for an appropriate concept that can be considered by teachers who want to teach English at kindergarten level. Based on the research, the writer concludes thatppictures help the students to understand the difficult words easily by looking at the pictures. The use of pictures make the vocabulary learning more enjoyable and interesting because they can memories the meaning of the difficult words by singing the song with the pictures as key words and without asking another person or looking them up in the dictionary.

Using Pictures in TeachingVocabulary in Grades 5 and 6 Classrooms in Sharqiya South Region by Ranchoo Khan. This study reflected an interpretive perspective on research. The general research question for this study was to what extent do teachers ofEnglish in a General Education school use pictures in teaching new words to pupilsin elementary grades?In terms of findings, what we are left with here confirms what we would expect: teachers feel that pictures can make a positive contribution to vocabulary teaching and learning while learners also appreciate the role that pictures can play in helping them to learnEnglish.

The Use of Memory and Guessing Games in Teaching Vocabulary to Young Learners by Haifa Rashed Al Zaabi in Saudi Arabia. To collect data the researcher used interviews, surveys, observations, and video recordings.In looking at the learning of

vocabulary through the use of games, this action researchproject made researcher realize that language games help students learn vocabulary, and help their learning in general.

C. The Conceptual of Framework

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┌─────────────────────────┐
│ 1) Student hard to      │
│ remember new vocabulary.│        ┌──────────────────┐         ┌──────────────┐
│                         │        │ Teaching by Picture│        │ Hypothesis 1 │
│ 2) Student is easy getting│      └──────────────────┘         └──────────────┘
│ bored in learning process.│  ┌──────────┐                ┌──────────┐
│                         │──▶│ Pre Test │                │ Post Test│
│ 3) Student doesn't know │   └──────────┘  ┌──────────────┐└──────────┘  ┌──────────────┐
│ well or recognize about the│              │ Teaching by  │              │ Hypothesis 0 │
│ new vocabulary.         │                 │ Guessing Game│              └──────────────┘
└─────────────────────────┘                 └──────────────┘
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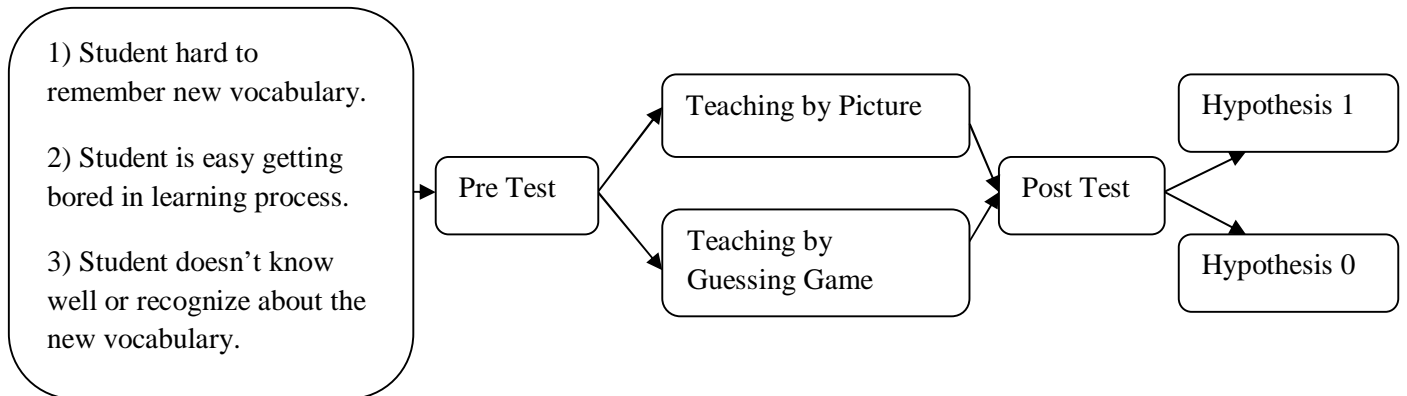
The successful of learning vocabulary depends on many factors. One of them is how the teacher teaches English to the students. The suitable method is very important. English is as foreign language for the students. There are four skills, which must the students have, namely reading, writing, speaking, and listening. Vocabulary is one important aspect in learning a foreign language. Without a proportional amount of vocabulary anyone will get trouble in her speaking, reading, listening, and writing. Without a shred of doubt, the writer said that the acquisition of vocabulary would help people in gaining, understanding, and also enhancing the process of knowledgeable transferred for a better life.

One of the aims of teaching English in Elementary School is to enhance students to be able to understand English words which they might find in their environment. In fact, students often find problems in learning the words. The ability of student in learning vocabulary still low, although government already make a good curriculum and syllabus to increase student's skill. It caused by most of difficulties to teach vocabulary to their students and the student also has no effort to learn well about vocabulary.

According to the fact above, in teaching have various kinds of teaching technique. Teaching English vocabulary by guessing game and using picture can help student solve their problems. By guessing game students enjoy learning process and makes learning vocabulary more active, relaxed and fun. Picture also helping student in learning process, it brings not only images or reality, but also functional as a fun element in the class. The most beneficial of all, flash card and guessing games don't spend much money, they are cheap and easy to bring to the class.

D. Hypothesis

Hypothesis is the idea that suggested as a possible explanation of fact.[34] The hypothesis is needed to show the writer's thinking and expectation about outcomes of the research related to this study. Thus the hypothesis of this research is stated that: "There is a significant difference of guessing game and picture on the students' ability in vocabulary."

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[34]A.S. Hornby, *Oxford Learners Pocket Dictionary* (New York: Oxford University Press, 2000), p. 502.

CHAPTER III

RESEARCH METHODOLOGY

A. Place and Time of Research

This research will be taken in SDN 200205 at Jl. Aek Tampang Gg. Pendidikan, Padangsidimpuan. The researcher chose this place because the researcher found the problems that the students still have weakness in learning vocabulary, beside no one has investigated this problem in this place before and this place not far from researcher's bedsitter.

This researched was planned finished in three months beginning on April 2013 until finish. This time determination refers to the educational calendar of Padangsidimpuan when the second semester of the school study is started in January to the next five months.

B. Method of Research

In research activity, the function of method is very important because the success or the failure of a research highly depend on the method applied. It is difficult to achieve the object of the researcher without using an accurate method.

Design of the researcher is experiment which has three variables; guessing game as independent variable one (X_1), picture as independent variable two (X_2) and vocabulary as dependent variable (Y). In short, the researcher study how X influenece Y. Researcher explains that the kind of this research is quantitative approach.

According to Anas Sudijono stated that quantitative is numeral of data which it can make as a description about condition, phenomenon, or something indication.[35] The method of this research is inferential method which researcher used comparison technique analysis.

Table 1: Illustrated of the Research

	Pre Test	Treatment	Post Test
Picture (X_1)	√	√	√
Guessing Game (X_2)	√	√	√

C. Population and Sample

Population of the study is the fourth year students of SDN 200205 Padangsidimpuan in the school year 2012/2013 which consist of 92 students and considers have accepted the same treatment on English lesson.

Below will express the number of population:

Table 2: Population and sample at the second year students of SDN 200205

Padangsidimpuan

No	Class	Students	School
1	IV-A	46	SDN 200205
2	IV-B	46	SDN 200205
Total		92	

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[35]AnasSudijono, *PengantarStatistikPendidikan* (Jakarta: PT.GrafindoPersada, 2000), p. 2.

The researcher convinced both of experimental class is equivalent. Because the researcher asked students whether they study English or not, and the researcher got answers that all experimental students one did not study English at out of classroom. All experimental students two also did not study English at out of classroom. Beside that, they were taught by same teacher, same material, and same envinment in the previous semester.

The researcher uses sample purposive as the technique to choose the sample. Researcher chose them because students in fourth grade in elementary school start to learn vocabulary.

D. Instrument of Data Collection

A research might have a good instrument in this research because a good instrument could go guarantee the valid data. Suharsimi Arikunto said that Instrument of collecting data is a helping tool that chosen and used by researcher in the research to make systematic and easier.[36]

In this case, in order to get the data of this research, the researcher would prepare the available instrument. There were many kinds of instrument; they were questionnaire, checklist, interview guide or interview schedule, observation sheet or observation schedule, achievement test, scale etc.[37] The instrument that will be used for this research is vocabulary test. Vocabulary test will be given to both samples.

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[36]SuharsimiArikunto, *Manajemen Penelitian* (Jakarta: Rineka Cipta, 1995), p. 134.
[37]*Ibid*

1. **Test**

   The researcher construct the test in form of multiple choices because it will easy to give the score for each item. And also it will be easy to understood by the students of elementary school. The vocabulary test is 20 items and each items have 4 answer options. The test material based on the material curriculum at elementary school; they are classroom objects.

   Then, after collecting the students score, to get each of score would be divided the number of score and times 100, so the rating score is 0-100.

$$\frac{The\ correct\ of\ Number}{The\ Number\ of\ Items} \times 100^{38}$$

   In measuring the result of teaching vocabulary by using both techniques the researcher gave the vocabulary test to the students, in order to be clearer the indicators can be seen in the table below:

Table 3: The Indicator of the Test

Indicator Vocabulary	Sub Indicator	Number	Item
Classroom Object	Ruler	1	20
	Pencil	2	
	Pencil case	3	
	Sharpener	4	
	Chalk	5	

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[38] Muhibbin SYah, Psikologi Belajar, (Jakarta: PT Raja Grafindo Persada, 2003), p. 217

	Pen	6	
	Bag	7	
	Book	8	
	Eraser	10	
	Calculator	11	
	Class	12	
	Flag	13	
	Uniform	14	
	Shoes	15	
	Dictionary	16	
	Tipp-ex	17	
	Board marker	18	
	Clock	19	
	School	20	
Total			**20**

2. Validity

The validity of the test that will analyze in content validity. To validate the test, the reseacher constructed the test based on the curriculum, syllabus and material that the researcher use while teaching students as treatment. In addition, Tuckman defines validity as the extent to which a test measure what

it should measure. Various methods can be assess the validity of a test, one of which is content validity is prominent in the achievement test with this type of examination, test content is essential.[39]

To find out the validity item of test, researcher used the formula correlation biserial

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

Where: r_{xy} = correlate coefficient

X   = score item

Y   = total score item

N   = total sample[40]

Test criteria if $r_{xy} > r_{tabel}$

Result of calculation by coefficient of correlation biserial is determined if r_{xy}> r table with the significant level 5 % (0,05) with the tabel r product moment.So, that the items is tested valid.

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[39]Tuckman, B.W *Conducting Educational Research* (New York: Harcourt Brace Jovanovich Publisher,1988), p. 45

[40]AnasSudijono, *Op.Cit*, p. 193.

E. Technique of Collecting Data

1. Pre Test

Before treatment session, the researcher will give a test to the entire sample in case of to know is the both experimental groups are homogeny or they are not. Researcher will give 10 questions to all of participants from last lesson meeting by their teacher, and compare the result.

a. Normality test

To know whether data of research is normal. So, reseracher will used Chi-Quadrate formula, as follow:

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

Where:

x^2 = Chi-Quadrate

f_o = Frequency is gotten from the sample/result of observation (questioner)

f_h = Frequency is gotten from the sample as image from frequency is hoped from the population[41]

[41]Mardalis, *MetodePenelitian: Suatu Pendekatan Proposal*, (Jakarta: BumiAksara, 2003), p. 85.

To calculate the result of Chi-Quadrate, it was used significant level 5 % (0,05) and degree of freedom as big as total of frequency is lessened 3 (dk = k – 3). If result $x^2_{count} < x^2_{table}$. So, it is can be concluded that the data is distributed by normal.

b. Homogeneity variant test

Homogeneity variant test will be used to know whether control class and experimental class have the same variant or not. If the both of classes is same, it is can be called homogeneous. To test it, researcher used formula as follow:

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

Where:

n_1 = Total of the data that bigger variant

n_2 = Total of the data that smaller variant

Hypothesisis rejectedif $F \leq F_{\frac{1}{2}\ (n_1-1)(n_2-1)}$ while if $F_{count} > F_{table,}$ hypothesis is accepted. It determined with significant level 5 % (0,05) anddknumerator is (n_1-1) whiledkdenominatoris (n_2- 1).[42]

2. **Post Test**

After teaching for six meetings, the researcher give test to both experimental class one and experimenalt class two. Researcher get student's answer sheet of

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[42]Sudjana, *MetodaStatistika*, (Jakarta: Tarsito, 2002), p. 250.

vocabulary test, the researcher give score. The score of the test will use as the data of this researcher. The result of the test will be used as the data, researcher examine and analyze the student's answer sheet one by one. The possible maximum score is 20 and minimum score 0. The correct answer give score 1 and the wrong answer is 0. Then the researcher compare the total score of the gained by the experiment group one and experiment group two in order to know which is more effective using picture or guessing game towards the students' vocabulary achievment.

F. Data Analysis

Data Analysis was used to test the hypothesis by using t-test, that:

Hypothesis: "There is significant difference of guessing game and using picture on the students' ability in vocabulary"

If the hypothesis test showed $\mu_1 > \mu_2$, it is mean the result of vocabulary by using guessing game and using picture to the fourth grade students SDN 200205 Padangsidimpuan is significant difference. But, if the hypothesis test showed $\mu_1 \leq \mu_2$ it is mean the result of vocabulary by using guessing game and using picture to the foyrth grade students of SDN 200205 is no significant difference. To testing the hypothesis, researcher used the formula as follow:

$$t = \frac{\overline{x_1} - \overline{x_2}}{s\sqrt{\dfrac{1}{n_1} + \dfrac{1}{n_2}}}$$

Where:

$$\overline{x_1} \quad = \text{Mean of experimental class sample}$$

$$\overline{x_2} \quad = \text{Mean of control classsample}$$

$$n_1 \quad = \text{Total of experimental class one sample}$$

$$n_2 \quad = \text{Total of experimentall class two sample}[43]$$

and the formula of standard deviation is:

$$s \quad = \sqrt{\frac{(n_1 - 1)s_1{}^2 + (n_2 - 1)s_2{}^2}{n_1 + n_2 - 2}}$$

Where:

$$s \quad = \text{Variant}$$

$$s_1{}^2 \quad = \text{Variant of experimental class one}$$

$$s_2{}^2 \quad = \text{Variant of experimental class two}[44]$$

To test criteria of hypothesis is if result of the hypothesis test is accepted by

$-t_{table} < t_{count} > t_{table}.$ By opportunity $\left(1 - \dfrac{1}{2}\alpha\right)$ and dk = $(n_1 + n_2 - 2)$ andhypothesis is

rejected if there is t-test has the other results.

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[43]*Ibid*, p. 239.
[44]*Ibid*, p. 239.

CHAPTER IV

DESCRIPTION OF THE DATA AND DISCUSSION

To evaluate the result of teaching vocabulary by using guessing game and picture to the fourth grade students of SDN 200205 Padangsidimpuan, researcher has calculated the data by pre-test and post-test. Next, researcher described the data as follow:

A. Description of the Data

1. Pre-Test

a. Statistic Description of Data Pre-test Students' Ability in Vocabulary in Experimental Class

Based on result of student's score in pre-test, researcher described the result of data analysis. It can be seen as follow:

Table 4
Result of Data Analysis from the Both Classes in Pre-Test (Experimental Class)

Experimental Class by Using Guessing Game						Experimental Class by Using Picture					
$\sum_{x1}$	n_1	$\bar{x}_1$	SD_t	Me	Mo	$\sum_{x2}$	n_2	$\bar{x}_2$	SD_t	Me	Mo
2485	46	43.70	9.72	46.10	49.46	2470	46	43.82	9.90	47.30	48.50

The Data in the table above explained that data the result of students' ability in vocabulary by using guessing game and picture before researcher

gave the treatment (pre-test) to the both classes as experimental class. The first class as experimental class one by using guessing game showed that the sample = 46, researcher found that total of score $\sum_{x1}$ = 2485 with mean ($\bar{x}_1$) = 43.70 standard deviation (SD_t) = 9.72, median (Me) = 46.10, and modus (Mo) = 49.46. For the data the result of students' ability in vocabulary before researcher gave treatment (pre-test) in the second class as experimental class two by using picture showed that the sample = 46, researcher found that total of score $\sum_{x2}$ = 2470 with mean ($\bar{x}_2$) = 43.82, standard deviation (SD_t) = 9.90, median (Me) = 47.30, and modus (Mo) = 48.50. Researcher calculation, it can be seen on the appendix XII.

From distributing of the variable data of the test result of students' ability in vocabulary at SDN 200205 Padangsidimpuan can be seen to the table and histogram, and difference between the both class (experimental class) in pre-test as follow:

Table 5
Distributing of the Variable Score Frequency of the Result of Students' Ability in Vocabulary by Using Guessing Game before Gave Treatment (Pre-test) in the Experimental Class One

Experimental Class by Using Guessing Game			
No.	Interval	F	%
1.	40-45	10	21.73%
2.	46-51	14	30.43%

3.	52-57	12	26.08%
4.	58-63	2	4.34%
5.	64-69	1	2.17%
6.	70-75	7	15.21%
	Total	46	100%

Based on table above is explained that in the experimental class one by using guessing game, score often appear is 46-51. It is proven that students' average mastery is in the interval of that score.

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

Distributing of the data in the Experimental class two by using picture
can be seen in the table as follow:

Table 6
Distributing of the Variable Score Frequency of the Result of Students' Ability
in Vocabulary by Using Picture before Gave Treatment (Pre-test) in the
Experimental Class Two

Experimental Class By Using Picture			
No.	Interval	F	%
1.	40-45	10	21.73%
2.	46-51	16	34.78%
3.	52-57	10	21.73%
4.	58-63	1	2.17%
5.	64-69	2	4.34%
6.	70-75	7	15.21%
Total		46	100 %

Based on the table above is explained that in the Experimental class two
by using picture, score often appear is 46-51. It is proven that students' average
mastery is in the interval of that score.

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

Based on result of the test students' ability in vocabulary, researcher found that mean score of students in the experimental class one by using guessing game is 43.70. Highest score is 75 and smallest score is 40. While, mean score of students in the experimental class two by picture is 43.82. Highest score in is 75 and smallest score is 40.

To more explicit about difference discription of the pre-test result of students' ability in vocabulary by using guessing game and picture before researcher gave the treatment to the both classes can be seen to the chart, as follow:

Figure 3.
Achievement Chart the Result of Students' Ability in Vocabulary by Using
Guessing Game and Picture
(Pre-test)
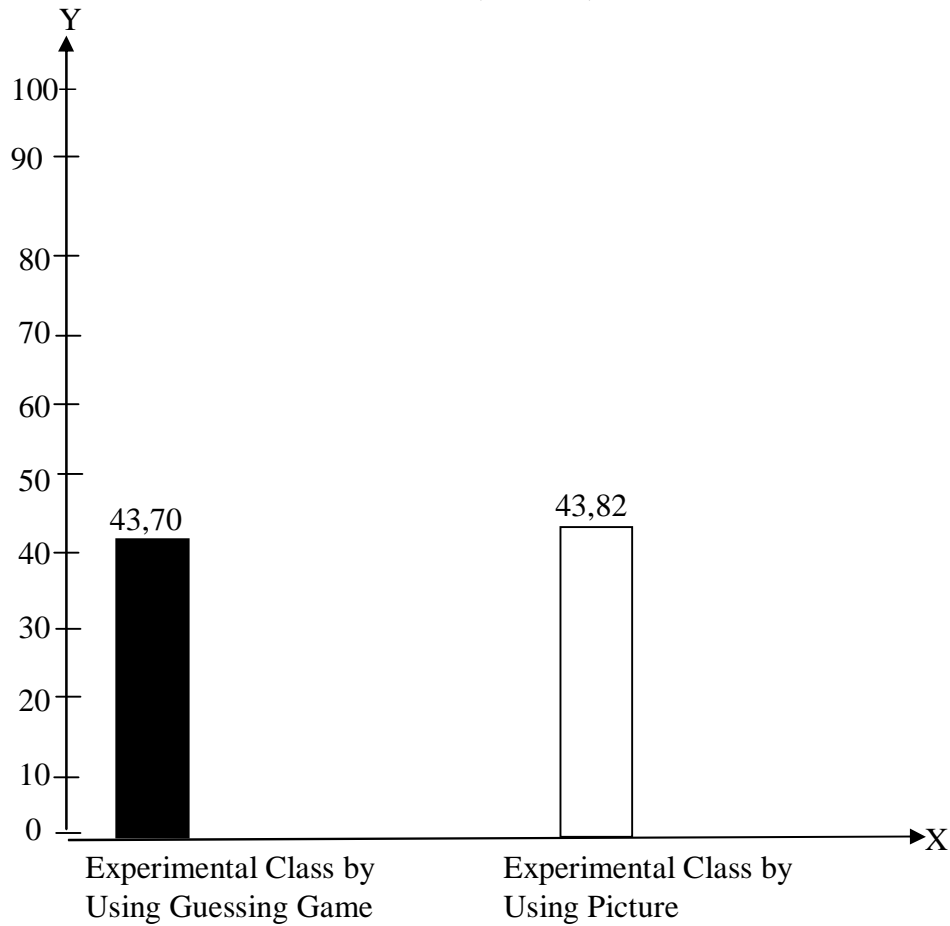
Based on the chart above, the black chart as experimental class by using guessing game showed that tall of the chart achieved 43.70, it was between 50-60 in position of Y. and the white chard as experimental class by using picture showed that tall of the chard achieved 43.82, the both classes were same in position of Y. The difference was just little of average from the both classes.

2. Post test

a. Result of Data Post-Test Students' Ability in Vocabulary in the Both Classes as Experimental Class (IV-A and IV-B)

Based on result of student's score in post-test, researcher described the result of data analysis. It can be seen as follow:

Table 7
Result of Data Analysis from the Both Classes in Post-Test (Experimental Class)

Experimental Class by Using Guessing Game						Experimental Class by Using Picture					
$\sum_{x1}$	n_1	$\bar{x}_1$	SD_t	Me	Mo	$\sum_{x2}$	n_2	$\bar{x}_2$	SD_t	Me	Mo
3275	46	81.06	7.98	75.30	76.50	3055	46	75.55	8.55	85.75	71.70

The data in the table above explained that data the result of students' in vocabulary by using guessing game (post-test) showed that sample is 46, researcher found that total of score $\sum_{x1}$ = 3275 with mean ($\bar{x}_1$) = 81.06, standard deviation (SD_t) = 7.98, median (Me) = 75.30, and modus (Mo) = 76.50. For the data the result of students' vocabulary by using picture (post-test) showed that sample is 46, reseracher found that total of score $\sum_{x2}$ = 3055 with mean ($\bar{x}_2$) = 75.55, standard deviation (SD_t) = 8.55, median (Me) = 85.75, and modus (Mo) = 71.70. Researcher calculation, it can be seen on the appendix XV.

From distributing of the variable data the test result of students' ability in vocabulary to the fourth grade students of SDN 200205 Padangsidimpuan can be seen to the table and histogram, and difference between the both classes as experimental class (post-test) as follow:
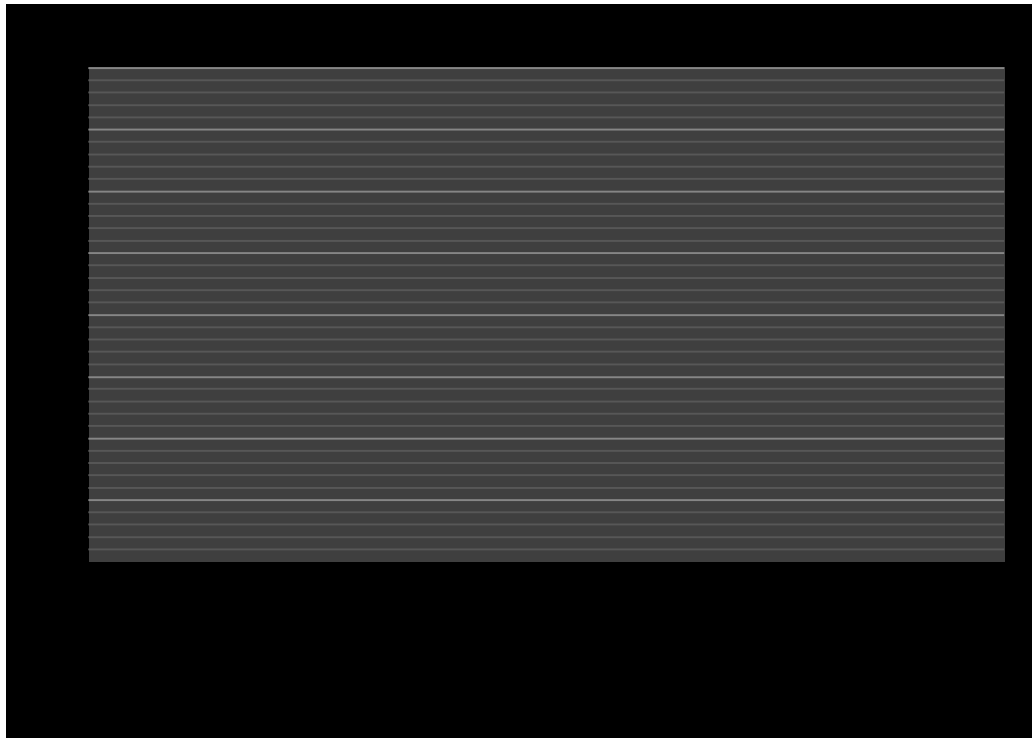
Table 8
Distributing of the Variable Score Frequency of the Result of Students' Ability in Vocabulary by Using Guessing Game after Gave Treatment (Post-test) in the Experimental Class

No.	Interval	F	%
Experimental Class by Using Guessing Game			
1.	50-55	3	6.52%
2.	56-61	3	6.52%
3.	62-67	7	15.21%
4.	68-73	10	21.73%
5.	74-79	13	28.26%
6.	80-85	10	21.73%
Total		46	100 %

Based on table above is explained that in the experimental class by using guessing game, score often appear is 74-79. It is proven that students' average mastery is in the interval of that score.

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

47

Distributing of the data in the experimental class by using picture can be

seen to the table as follow:

Table 9
Distributing of the Variable Score Frequency of the Result of Students' Ability
in Vocabulary by Using Picture after Gave Treatment (Post-test) in the
Experimental Class

No.	Interval	F	%
Experimental Class by Using Picture			
1.	50-54	3	6.52%
2.	55-59	5	10.86%
3.	60-64	8	17.39%
4.	65-69	6	13.04%
5.	70-74	14	30.43%
6.	75-79	4	8.69%
7.	80-84	6	13.04%
Total		46	100 %

Based on table above is explained that in the experimental class by using picture, score often appear is 70-74. It is proven that students' average mastery is in the interval of that score.

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

Based on result of the test of students' ability in vocabulary, researcher found that mean score of the students in the experimental class by using guessing game is 81.06 with the highest score is 85 and smallest score is 50. While, mean score of students in the experimental class by using picture is 75.55 with the highest score in the control class is 80 and smallest score is 50.

To more explicit about difference discription of the post-test result of students' ability in vocabulary by using guessing game and picture in the both classes as experimental class can be seen in the chart as follow:

Figure 6.
Achievement Chart the Result of Sstudents' Ability in Vocabulary by Using Guessing Game and Using Picture
(Post-test)
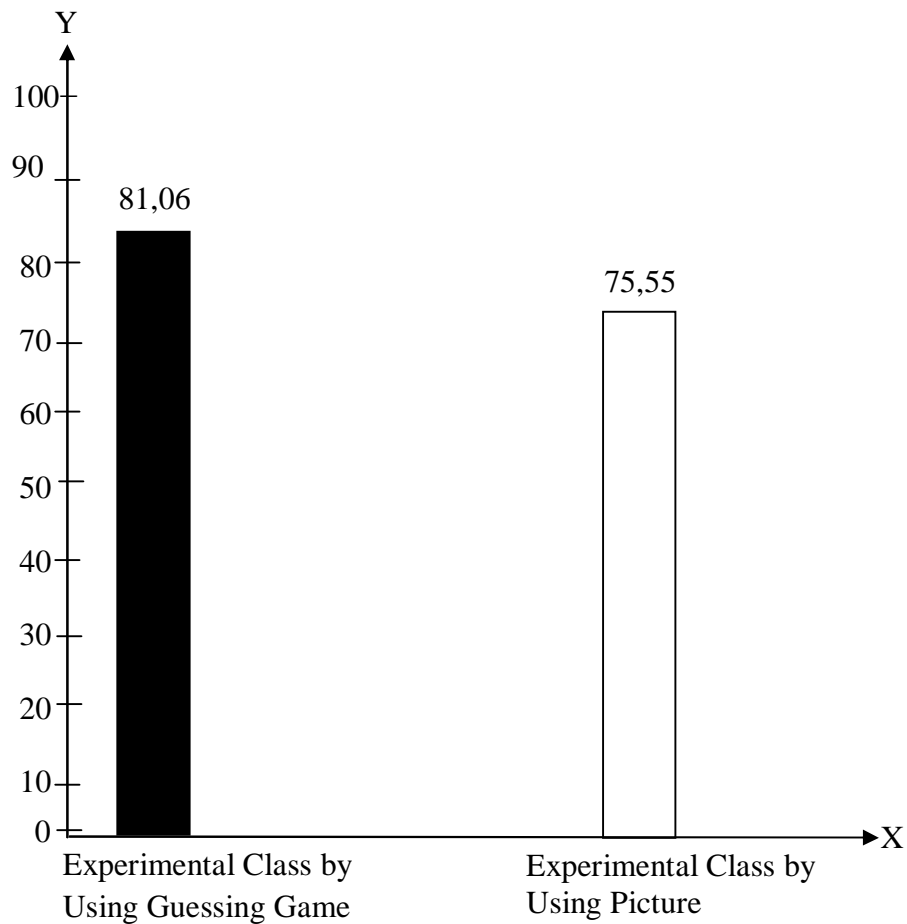
Based on the chart above, the black chart as experimental class by using guessing game showed that tall of the chart achieved 81.06, it was between 80-

90 in position of Y. While the white chard as experimental class by using

picture showed that tall of the chard achieved 75.55, it was between 70-80 in

position of Y. It means that, the both classes was significant difference after

gave the treatment (post-test).

b. Requirement Test

1). Normality Test

Table of the Frequency Distribution is Expected and Observation for Experimental Class 1

Interval of Score	Real Upper Limit	$Z -$ Score	Limit of Large of the Area	Large of area	f_h	f_0	$\dfrac{(f_0-f_h)}{f_h}$
	85,5	0,55	0,2088				
80-85				0,1335	6,14	10	0,62
	79,5	-0,19	0,0753				
74-79				0,2511	11,55	13	0,12
	73,5	-0,94	0,3264				
68-73				0,1281	5,89	10	0,69
	67,5	-1,69	0,4545				
62-67				0,1119	5,14	7	0,36
	61,5	-2,45	0,3426				
56-61				0,0211	0,97	3	2,09
	55,5	-3,20	0,3215				
50-55				0,0583	2,68	3	0,11
	49,5	-3,95	0,2632				
							3,99

Based on table above, researcher found that $x^2_{count} = 3,99$ while

$x^2_{table} = 7,81$, cause $x^2_{cause} < x^2_{table}$ (3,99 < 7,81) with degree of freedom dk

$= 6 - 3 = 3$ and significant level $\alpha = 5\%$. So distribution of experimental

class by using guessing game (Post-test) is normal.

Table of the Frequency Distribution is Expected and Observation for Experimental Class 2

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\dfrac{(f_0 - f_h)}{f_h}$
	84,5	1,04	0,3508				
80-84				0,1736	7,98	6	0,24
	79,5	0,46	0,1772				
75-79				0,0901	4,14	4	0,03
	74,5	-0,12	0,0871				
70-74				0,1709	7,86	14	0,78
	69,5	-0,70	0,2580				
65-69				0,1435	6,60	6	0,09
	64,5	-1,29	0,4015				
60-64				0,0678	3,11	8	1,57
	59,5	-1,87	0,4693				
55-59				0,0538	2,47	5	1,02
	54,5	-2,46	0,4931				
50-54				0,0311	1,43	3	1,09
	49,5	-3,04	0,4620				
							4,82

Based on table above, researcher found that $x^2_{count} = 4,82$ while $x^2_{table} = 5,99$, cause $x^2_{cause} < x^2_{table}$ (4,82 < 5,99) with degree of freedom dk = 5 – 3 = 2 and significant level α = 5%. So distribution of control class by using intensive reading (Post-test) is normal

Table 10
Result of Normality Test from the Both Class in Students' Ability in Vocabulary by Using Guessing Game and Picture after Gave Treatment (Post-test)

Treatment	Highest score	Smallest score	Range	Mean	Standard Deviation	Chi-Quadrate
Experimental Class by Using Guessing Game	85	50	35	81.06	7.98	3.99
Experimental Class by Using Picture	80	50	30	75.55	8.55	4.82

Based on researcher calculation of normality test to the experimental class by using guessing game in post-test, researcher found that the score x^2_{table} with degree of freedom dk = (k – 3) = (6 – 3) = 3 and significant level α = 5 %, researcher found that x^2_{table} = 7.81, x^2_{count} in the experimental class by using guessing game< x^2_{table} and in the expermental class by using picture score x^2 with digree of freedom dk = (k – 3) = (5 – 3) = 2 and significant level α = 5%, researcher found that x^2_{table} = 5.99. Cause the both classes x^2_{count} < $x^2_{table.}$ So, hypothesis is rejected, it means that the both classes as experimental class are destributed normal. Researcher calculation, it can be seen on the appendix XV.

2). Homogeneity Test

Calculation of parameter to get variant of the first class as experimental class sample by using extensive reading and variant of the second class as control class sample by using intensive reading were used homogeneyity test by using formula:

$$ S^2 = \frac{n\Sigma xi^2 - (\Sigma xi)}{n(n-i)} $$

Hypothesis:

H_0 : $\delta_1^2 = \delta_2^2$

H_1 : $\delta_1^2 \neq \delta_2^2$

A. variant of the experimental class sample by using guessing game is:

n = 46

Σxi = 3275

$\Sigma_{xi} 2 = 236175$

$$S^2 = n\Sigma xi^2 - (\Sigma xi)^2$$

$$= \frac{46(236175) - (3275)^2}{46(46-1)}$$

$$= \frac{10864050 - 10725625}{46(45)}$$

$$= \frac{138425}{2070}$$

$$= 66,87$$

B. Variant of the control class sample by using picture is:

n   = 46
Σxi = 3055
$\Sigma_{xi} 2 = 206275$

$$S^2 = \frac{n\Sigma x_1^2 - (\Sigma x_1)^2}{n(n-1)}$$

$$= \frac{46(206275) - (3055)^2}{46(46-1)}$$

$$= \frac{9488650 - 9333025}{46(45)}$$

$$= \frac{155625}{2070}$$

$$= 75,18$$

The formula was used to test hypothesis was:

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

So: $F = \frac{75,18}{66,87}$

$$= 1,12$$

Table 11
Homogeneity Test and Variant Test after Gave Treatment (Post-test)
to the Both Classes as Experimental Class

Source of Variation	Experimental Class by Using Guessing Game	Experimental Class by Using Picture
Total	3275	3055
N	46	46
Mean	81.06	75.55
Variant	66.87	75.18
Standard Deviation	7.98	8.55

Based on researcher calculation, Researcher found that F_{count} was 1.12 with significant level $\alpha = 5\%$ with dk = 46 from the distributing list F, researcher found that F_{table} was 1.66, cause $F_{count} < F_{table}$ (1.12 < 1.66). So, no difference the variant between the both of classes (homogeneous). It can be seen on the appendix XVIII.

B. Hypothesis test

Hypothesis test uses the difference test of the both averages with criteria:

Hypothesis: $\mu_1 > \mu_2$: "there is significant difference of guessing game and picture on the students' ability in vocabulary".

Researcher used the formula t-test to find the hypothesis test as follow:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s\sqrt{\frac{1}{n} + \frac{1}{n}}} \quad \text{with} \quad s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

H$_0$ is accepted if t $\geq$ t$_{(1-a)\,(n1 + n2)}$ with opportunity (1-α) = 1 – 5 = 95 % and dk = (n1 + n2 – 2)

So:

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{(46 - 1)(66{,}87) + (46 - 1)(75{,}18)}{46 + 46 - 2}}$$

$$= \sqrt{\frac{45(66{,}87) + 45(75{,}18)}{90}}$$

$$= \sqrt{\frac{3009{,}15 + 3383{,}10}{90}}$$

$$= \sqrt{\frac{6392{,}25}{90}}$$

$$= \sqrt{71{,}02}$$
$$= 8{,}42$$

So:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt[5]{\dfrac{1}{n_1} + \dfrac{1}{n_2}}}$$

$$= \frac{81{,}06 - 75{,}55}{8{,}42\sqrt{\dfrac{1}{46} + \dfrac{1}{46}}}$$

$$= \frac{5{,}51}{8{,}42\sqrt{\dfrac{2}{46}}}$$

$$= \frac{5{,}51}{\sqrt[8{,}42]{0{,}04}}$$

$$= \frac{5{,}51}{1{,}68}$$

$$= 3{,}27$$

Based on researcher calculation, researcher found that $t_{count} = 3.27$ with s = 8.42. While, from the distributing list t_{table}, researcher found that $t_{table} = 1.66$ with opportunity $(1 - \alpha) = 1 - 5\% = \%$ and dk $= (n_1 + n_2 - 2) = (46 + 46 - 2) = 90$, cause $t_{count} > t_{table}$ (3.27> 1.66). It described that the hypothesis is accepted, it means there is significant difference of guessing game and picture on the students' ability in vocabulary. Researcher calculation, it can be seen on the appendix XIX.

Next, the category significant difference of guessing game and picture on the students' ability in vocabulary was enough, with 81,06-75,55 = 0,51. It would be interpreted from the table below:

Table 12: The score of interpretation

Interval	Interpretation
0,00 – 0,20	Very low
0,21 – 0,40	Low
0,41 - 0,60	**Enough**
0,61 - 0,80	High
0,81 - 1,00	Very High

C. Discussion

1. Discussing About Result of the Research

The first time on this research, researcher gave pre-test to the sample (the both classes class as experimental class). Pre-test indicated that the mean score in experimental class by using guessing game is 43.70 and in the experimental class by using picture is 43.82. From the mean score of the both class indicated the students' ability in vocabulary was still enough category. And after gave the treatment (post-test), the mean score of experimental class by using guessing game is 81.06 and in experimental class by using picture is 75.55. It means that the students' ability in vocabulary is high category. And researcher concluded that the better method in students' ability in vocabulary is guessing game.

2. Discussing About the Weakness of Researcher

In processing during this research, researcher had weakness when direct observation. They are:

1. During this research, the time was needed to teaching and learning of vocabulary in the school was limited by English teacher. So that, the observation was imperfect.

2. Researcher also needed time to make more comfortable class and then teaching and learning was begun.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

The first formulation of the problem is "How far is students' ability in vocabulary learning by guessing game at SDN 200205 Padangsidimpuan?" Students' ability in vocabulary before giving the treatment was low category, but in post-test was high category. It can be seen from the mean score of experimental class by using guessing game in pre-test. Mean score of experimental class by using guessing game in pre-test was 43.70, it is lower than total score of experimental in post test (after giving the treatment), it was 81.06.

The second formulation of the problem is "How far is students' ability in vocabulary learning by picture at SDN 200205 Padangsidimpuan? Students' ability in vocabulary of experimental class by using picture in pre-test was low, but in post-test was high. It can be seen from the mean score of experimental class by using picture in pre-test. Mean score of experimental class in pre-test was 43.82, it is lower than mean score of experimental class in post test, and it was 75.55.

The last formulation of the problem is "Which technique is the better one in teaching vocabulary by using guessing game or intensive reading?" The technique in teaching vocabulary by using guessing game is the better technique than picture technique; it can be seen in the mean score of the both classes in post-test (after gave treatment). The mean score of experimental class by using guessing game in post-test was 81.06, while mean score of experimental class by using picture in post-test was 75.55.

And the last, the hypothesis in this research is, "there is significant difference of guessing game and picture on the students' ability in vocabulary?" Based on researcher calculation, reseracher that t_{count} = 3,27 with s = 8,42. While, from the distributing list t_{table}, researcher found that t_{table} = 1,66 with opportunity (1 - α) = 1 – 5 % = % and dk = (n_1 + n_2 – 2) = (46 + 46 – 2) = 90, cause t_{count} > t_{table} (3.27> 1.66). It means the hypothesis is accepted, it means there is significant difference of guessing game and picture on the students' ability in vocabulary.

B. Suggestion

After finishing the research, researcher gets much information, which relates to the teaching and learning process. In addition, the result of the research a significant effect is guessing game technique on students' ability in vocabulary and it could help the students to improve their vocabulary. Therefore, researcher has suggestion:

a. Researcher hopes that the students especially the fourth grade of SDN 200205 Padangsidimpuan will improve their vocabulary by using guessing game technique in the other time.

b. The students should memorize and practice their vocabulary in their daily activities.

c. For the teacher, guessing game technique can use as a technique in teaching vocabulary cause the students will be easy to understanding of text.

CURRICULUM VITAE

A. Identity

   Name   : SEPTI ANZANI PUTRI HARAHAP

   NIM   : 08 340 0036

   Place and Birthday   : Medan, 13 September 1990

   Sex   : Female

   Religion   : Moslem

   Address   : Rantauprapat, Sumatra Utara

B. Parent

   1. Father's name   : Ghazali Harahap

   2. Mother's name   : Monita Ginting

C. Education Background

   1. Graduated from Kindergarten School in Taman Kanak-Kanak Kembang Jaya II Medan from 1995-1996

   2. Graduated from Elementary School in Peguruan Panglima Polem Rantau Prapat from 1996-2002

   3. Graduated from Junior High School in SLTP Negeri 3 Rantauprapat from 2002-2005.

   4. Graduated from Senior High School in SMA Negeri 1 Rantauprapat from 2005-2008.

   5. Graduated from STAIN Padangsidimpuan. From 2013

Appendix I

<div align="center">

Vocabulary Test for Pre Test

</div>

Isilah dengan member tanda silang (X) pada jawaban yang benar!

1.   What is this?

                             This is a ……
                             a. Ruler   b. Pen   c. Blackboard d. Book

2.   What is this?
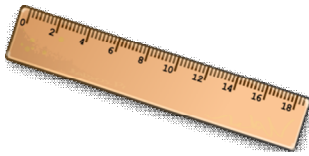
                             This is a ……
                             a. Ruler   b. Pen   c. Blackboard d. Flag

3.   What is this?

                             This is a ……
                             a. Flag   b. Pen   c. Book   d. Dictionary

4.   What is this?

                             This is a ……
                             a. Flag   b. Pen   c. Book   d. Pencil case

5.   What is this?

                             This is a ……
                             a. Pen   b. Class   c. Blackboard d. School

6.   What is this?
                             This is a ……
                             a. Flag   b. Pencil case c. Dictionary d. Pen

7.

What is this?
This is a ……
a. Calculator   b. Pen   c. Dictionary d. Class

8.

What is this?

This is a ……
a. Eraser   b. Uniform   c. Bag   d. Calculator

9.
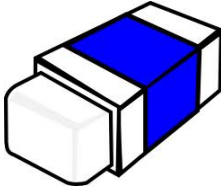
What is this?

This is a ……
a. Uniform   b. Pencil case c. Eraser   d. Sharpener

10.

What is this?
This is a ……
a. Calculator   b. Uniform   c. Book   d. Shoes

11 Bentuknya petak dan punya banyak tombol di badannya. Kau menggunakannya untuk membantumu berhitung. What is it?
a. Calculator   b. Board marker   c. Shoes   d. Bag

12 Ruangan yang kau pakai untuk belajar setiap hari bersama teman-temanmu, berisi papan tulis serta banyak meja dan kursi. What is it?
a. Dictionary   b. Bag   c. Class   d. Flag

13 Berwarna merah dan putih, dikibarkan di lapangan sekolah setiap hari Senin. What is it?
a. Flag   b. School   c. Pen   d. Dictionary

14 Kau menggunakannya untuk menutupi badanmu saat pergi kesekolah. Hari Senin – Kamis warnanya merah putih, tapi hari Jumat-Sabtu berwarna coklat muda dan tua. What is it?
a. Flag   b. Uniform   c. Tipp-ex   d. Book

15 Warnanya hitam dan bertali. Kau memakainya di kaki setiap kali pergi ke sekolah. What is it?
a. Shoes   b. Pen   c. Book   d. Calculator

16 Bentuknya seperti buku tapi jauh lebih tebal dan berisi banyak sekali kata-kata. Kau menggunakannya tiap kali belajar B. Inggris untuk membantumu mengartikan kata yang sulit. What is it?
a. Tipp-ex   b. Book   c. Clock   d. Dictionary

17 Bentuknya kecil dan bermacam-macam. Berisi cairan putih dank au menggunakannya untuk memperbaiki tulisanmu. What is it?

a. Class   b. School   c. Calculator   d. Tipp-ex

18 Bentuknya seperti pensil dan pulpen tapi sedikit lebih gendut, tintanya tebal dan kau menggunakannya untuk menulis di papan tulis putih. What is it?

a. Pen   b. Shoes   c. School   d. Board Marker

19 Bentuknya bulat dan digantungkan di dinding kelas, punya 12 angka dan 3 jarum untuk menunjukkan waktu. What is it?

a. Chalk   b. Class   c. Book   d. Clock

20 Dia punya banyak ruang kelas dan sebuah lapangan yang luas untuk upacara dan bermain, murid-murid datang kesitu setiap hari kecuali hari Minggu. What is it?

a. Flag   b. Uniform   c. Pencil case   d. School

Appendix II

Vocabulary Test for Post Test

Isilah dengan member tanda silang (X) pada jawaban yang benar!

1. Bentuknya panjang, tipis, lurus. Kau menggunakannya untuk membuat garis. What is it?
   a. Ruler   b. Pen   c. Blackboard   d. Dictionary

2. Bentuknya panjang, terbuat dari kayu. Kau menggunakannya untuk menulis dan menggambar. What is it?
   a. Ruler   b. Pencil   c. Bag   d. Pencil case

3. Bentuknya bermacam ragam, ada yang petak, tabung, bujur sangkar. Kau menggunakannya untuk menyimpan peralatan tulismu didalamnya. What is it?
   a. Flag   b. Pen   c. Pencil case   d. Black board

4. Bentuknya kecil dan bulat tapi ada juga yang petak, didalamnya terdapat pisau kecil untuk menjamkan pensilmu. What is it?
   a. Sharpener   b. Chalk   c. Book   d. Dictionary

5. Bentuknya bulat panjang dan berwarna putih. Kau menggunakannya untuk menulis di papan tulis. What is it?
   a. Blackboard   b. Calculator   c. Chalk   d. Book

6. Bentuknya besar dan lebar berwarna hitam, biasanya digantungkan di dinding kelas. What it it?
   a. Dictionary   b. Blackboard   c. Uniform   d. Pencil case

7. Betuknya panjang berisi tinta. Kau menggunakannya untuk menulis. What is it?
   a. Eraser   b. Pen   c. Class   d. Bag

8. Bentuknya besar dan bermacam ragam, kau bisa menyandangnya di bahu atau pundakmu. Digunakan untuk menyimpan buku-buku dan peralatan sekolahmu. What is it?
   a. Bag   b. Calculator   c. Book   d. Pencil

9. Bentuknya persegi panjang, berisi banyak lembaran putih kosong, untuk kau tulisi dengan pensil dan pulpenmu. What is it?
   a. School   b. Uniform   c. Book   d. Pen

10. Bentuknya kecil dan terbuat dari karet. Kau menggunakannya untuk menghapus gambaran pensilmu. What is it?
    a. Eraser   b. Pensil case   c. Chalk   d. Class

11.

What is this?
This is a ……
a. Flag   b. Shoes   c. Uniform   d. Book

12.

What is this?
This is a ……
a. Shoes   b. Dictionary   c. Book   d. Uniform

13.

What is this?
This is a ……
a. Bag   b. Dictionary   c. Book   d. Class

14.

What is this?
This is a ……
a. School   b. Board Marker   c. School   d. Tipp-Ex

15.

What is this?
This is a ……
a. Clock   b. School   c. Board Marker

16.

What is this?
This is a ……
a. Pencil   b. Clock   c. Book

17.

What is this?
This is a ……
a. School   b. Sharpener   c. Chalk

18.

What is this?
This is a ……
a. Sharpener   b. Pencil   c. Chalk

19.

What is this?
This is a ……
a. Sharpener   b. Chalk   c. Book

20.

What is this?
This is a ……
a. Calculator   b. Chalk   c. Class

The Key Answers of Try Out

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

The Key Answers of Pre-Test

1. C	11. A
2. A	12. C
3. A	13. A
4. C	14. B

5. B	15. B
6. B	16. D
7. B	17. D
8. C	18. D
9. C	19. D
10. A	20. D

The Key Answers of Post-Test

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

Appendix XII

A. Range, Standard Deviation, Mean, Median, Modus, and normality test of Experimental Class by Using Guessing Game in Pre-test

Riduwan's book of *Belajar Mudah Penelitian Untuk Guru, Karyawan, dan Peneliti Pemula* determined score and category from the result of the test as table below:

The Students' Score Classification

Score	Category
81 - 100	Very high
61 – 80	High
41 – 60	Enough
21 – 40	Low
0 - 20	Very low

Based on the table above researcher described the scores of test in some category as follow:

Result of the Normality Test of Experimental Class by Using Guessing Game in Pre-Test

No	Students' Initial	Correct	Score	Category
1	RSL	15	75	High
2	AKH	9	45	Enough
3	ANP	13	65	High
4	NNT	11	55	Enough
5	AGY	12	60	Enough
6	MST	11	55	Enough
7	USN	10	50	Enough
8	EVS	8	40	Low
9	HPS	10	50	Enough
10	EVF	9	45	Enough
11	RIF	9	45	Enough
12	RHL	11	55	Enough
13	ZUF	10	50	Enough
14	SIF	15	75	High
15	RAD	11	55	Enough
16	FAH	14	70	High
17	LAN	11	55	Enough
18	FHN	10	50	Enough
19	ELJ	11	55	Enough
20	RAA	10	50	Enough
21	AWA	9	45	Enough
22	ANS	10	50	Enough
23	AMI	11	55	Enough
24	ISN	10	50	Enough
25	KHA	14	70	High
26	ESL	10	50	Enough
27	FUY	11	55	Enough
28	NDN	10	50	Enough
29	RAL	15	75	High
30	MAA	10	50	Enough
31	RAR	14	70	High
32	RAI	9	45	Enough
33	RHN	10	50	Enough
34	PAM	9	45	Enough
35	LIK	10	50	Enough
36	MSN	10	50	Enough
37	RIS	8	40	Low
38	WSL	10	50	Enough
39	WAL	11	55	Enough
40	RIZ	9	45	Enough
41	DRA	11	55	Enough
42	MKN	14	70	High
43	NHS	12	60	Enough
44	SAS	11	55	Enough

45	MRY	8	40	Low
46	AHK	11	55	Enough
		497	2485	

1. High   = 75
   Low   = 40
   Range   = High – Low
                = 75 – 40
                = 35

2. Total of Classes   = 1 + 3,3 log (n)
                          = 1 + 3,3 log (46)
                          = 1 + 3,3 (1,66)
                          = 1 + 5,47
                          = 6,47
                          = 6

3. Length of Classes $= \dfrac{range}{total\ of\ class}$ $= \dfrac{35}{6} = 5,83 = 6$

4. Mean

Interval Class	f	X	x'	fx'	x'^2	fx'^2
40-45	10	42,5	1	10	1	10
46-51	14	48,5	0	0	0	0
52-57	12	54,5	-1	-12	1	12
58-63	2	60,5	-2	-4	4	8
64-69	1	66,5	-3	-3	9	9
70-75	7	72,5	-4	-28	16	112
$i = 6$	46			-37	174	151

$$Mx = M^1 + i\frac{\Sigma fx^1}{N}$$

$$= 48,5 + 6\left(\frac{-37}{46}\right)$$

$$= 48,5 + 6\ (\text{-}0,80)$$

$$= 48,5 + (\text{-}4,80)$$

$$= 43,70$$

$$SD_t = i\ \sqrt{\frac{\Sigma fx'^2}{N} - \left[\frac{\Sigma fx'}{N}\right]^2}$$

$$= 6\sqrt{\frac{151}{46} - \left[\frac{-37}{46}\right]^2}$$

$$= 6\sqrt{3,28-(-0,80)^2}$$
$$= 6\sqrt{40,63-0,64}$$
$$= 6\sqrt{2,64}$$
$$= 6\,(1,62)$$
$$= 9,72$$

Table of the Frequency Distribution is Expected and Observation

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\dfrac{(f_0 - f_h)}{f_h}$
	75,5	3,27	0,4990				
70-75				0,1480	4,48	7	0,56
	69,5	2,65	0,4015				
64-69				0,0773	3,55	1	0,71
	63,5	2,03	0,4788				
58-63				0,0581	2,67	2	0,25
	57,5	1,41	0,4207				
52-57				0,1326	6,09	12	3,25
	51,5	0,80	0,2881				
46-51				0,2167	9,96	14	0,40
	45,5	0,18	0,0714				
40-45				0,0950	4,37	10	1,28
	39,5	-0,43	0,1664				
							6,47

Based on table above,reseracher found that $x^2_{count} = 6,47$ while $x^2_{table} = 7,81$, cause $x^2_{cause} < x^2_{table}$ (6,47< 7,81) with degree of freedom dk = 6 – 3 = 3 and significant level α = 5%. So distribution of experimental class by using guessing game (Pre-test) is normal.

5. Median

No	Interval of Classes	F	fk
1	40-45	10	10
2	46-51	14	24
3	52-57	12	36
4	58-63	2	38
5	64-69	1	39
6	70-75	7	46

Explanation :

$$Me = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

Me = Median
Bb = Low limit of the interval median conceives Me
Fm = Frequency of class conceives Me
F = Frequency of cumulative before interval of classes conceives Me
i = Length of classes
n = Total of sample

Position of Me in the interval of classes is number 1, that:

Bb = 39,5
F = 12
fm = 10
i = 6
n = 46

So :

$$Me = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

$$= 393,5 + 6 \left(\frac{23 - 12}{10} \right)$$

$$= 39,5 + 6 \, (11/10)$$
$$= 39,5 + 6 \, (1,10)$$
$$= 39,5 + 6,60$$
$$= 46,10$$

6. Modus = Mo = $Bb + i \left(\dfrac{b1}{b1 + b2} \right)$

Explanation :

Bb = Low limit of interval conceives Mo
b1 = Quarrel of frequency conceives modus with frequency before
b2 = Quarrel frequency conceives modus with frequency next
i = Length of classes

Mo reside in interval number 2, that:

Bb = 45,5
b_1 = 14 − 10 = 4
b2 = 14 − 12 = 2
i = 6

So:

$$\text{Modus} = Mo = Bb + i \left(\frac{b1}{b1 + b2} \right)$$

$$= 45,5 + 6 \left(\frac{4}{4 + 2} \right)$$

$$= 45,5 + 6 \left(\frac{4}{6} \right)$$
$$= 45,5 + 6 \, (0,66)$$
$$= 45,5 + 3,96$$
$$= 49,46$$

7. Score Interpretation $= \dfrac{2485}{100 \times 46} \times 100\%$

$$= \dfrac{2485}{4600} \times 100\%$$

$$= 54 \, \%$$

The table score of interpretation

Interval	Interpretation
0% - 20%	Very low
21% - 40%	Low
41% - 60%	**Enough**
61% - 80%	High
81% - 100%	Very High

B. Range, Standard Deviation, Mean, Median, Modus, and Normality Test of Experimental Class by Using Picture in Pre-test

Result of the Normality Test of Experimental Class by Using Picture in Pre-Test

No	Students' Initial	Correct	Score	Category
1.	NUK	10	50	Enough
2.	IMP	8	40	Low
3.	ABR	15	75	High
4.	SKS	11	55	Enough
5.	RIM	9	45	Enough
6.	NZA	12	60	Enough
7.	MEY	11	55	Enough
8.	MEH	9	45	Enough
9.	AHA	14	70	High

10.	EFD	10	50	Enough
11.	MUH	8	40	Low
12.	ARD	10	50	Enough
13.	RSL	10	50	Enough
14.	NIH	14	70	High
15.	BSD	11	55	Enough
16.	AHF	10	50	Enough
17.	RFS	9	45	Enough
18.	NAH	11	55	Enough
19.	BUD	13	65	High
20.	RKN	10	50	Enough
21.	ISW	10	50	Enough
22.	ENA	11	55	Enough
23.	ALA	10	50	Enough
24.	BAR	14	70	High
25.	SHN	15	75	High
26.	SAP	9	45	Enough
27.	JUN	11	55	Enough
28.	DPD	14	70	High
29.	ERA	11	55	Enough
30.	IRP	10	50	Enough
31.	LEY	8	40	Low
32.	MER	10	50	Enough
33.	MHB	10	50	Enough
34.	NAL	9	45	Enough
35.	RIK	10	50	Enough
36.	FIL	11	55	Enough
37.	NUR	10	50	Enough
38.	YEM	8	40	Low
39.	NUS	11	50	Enough
40.	RID	13	65	High
41.	RIH	11	55	Enough
42.	NUZ	14	70	High
43.	RAA	10	50	Enough
44.	RUD	9	45	Enough
45.	SMR	10	50	Enough
46	SOH	10	50	Enough
		494	2470	

1. High   = 75
   Low   = 40
   Range   = High – Low
                  = 75 – 40
                  = 35

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

$\qquad$ = 1 + 3,3 log (46)

$\qquad$ = 1 + 3,3 (1,66)

$\qquad$ = 1 + 5,47

$\qquad$ = 6,47

$\qquad$ = 6

3. Length of Classes $\quad =\dfrac{range}{total\ of\ class} \qquad = \dfrac{35}{6} = 5,83 = 6$

4. Mean

Interval Class	f	X	x'	fx'	x'^2	fx'^2
40-45	10	42,5	1	10	1	10
46-51	16	48,5	0	0	0	0
52-57	10	54,5	-1	-10	1	10
58-63	1	60,5	-2	-2	4	4
64-69	2	66,5	-3	-6	9	18
70-75	7	72,5	-4	-28	16	112
$i = 6$	46			-36	174	154

$Mx = M^1 + i\dfrac{\Sigma fx^1}{N}$

$\quad = 48,5 + 6\left(\dfrac{-36}{46}\right)$

$\quad = 48,5 + 6\ (-0,78)$

$\quad = 48,5 + (-4,68)$

$\quad = 43,82$

$SD_t = i\ \sqrt{\dfrac{\Sigma fx'^2}{N} - \left[\dfrac{\Sigma fx'}{N}\right]^2}$

$\quad = 6\ \sqrt{\dfrac{154}{46} - \left[\dfrac{-36}{46}\right]^2}$

$\quad = 6\sqrt{3,34 - (-0,78)^2}$

$\quad = 6\ \sqrt{3,34 - 0,60}$

$\quad = 6\sqrt{2,74}$

$\quad = 6\ (1,65)$

$\quad = 9,90$

Table of the Frequency Distribution is Expected and Observation

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)}{f_h}$
	75,5	3,20	0,4990				
70-75				0,0955	4,39	7	0,59
	69,5	2,59	0,4035				
64-69				0,0726	3,33	2	0,39
	63,5	1,98	0,4761				
58-63				0,0599	2,75	1	0,63
	57,5	1,38	0,4162				
52-57				0,1368	6,29	10	0,58
	51,5	0,77	0,2794				
46-51				0,2158	9,92	16	0,61
	45,5	0,16	0,0636				
40-45				0,1028	4,37	10	1,28
	39,5	-0,43	0,1664				
							3,08

Based on table above, researcher found that $x^2_{count} = 3,08$ while $x^2_{table} = 7,81$, cause $x^2_{cause} < x^2_{table}$ (3,08 < 7,81) with degree of freedom dk = 6 – 3 = 3 and significant level $\alpha = 5\%$. So distribution of cexperimental class by usingpicture (Pre-test) is normal.

5. Median

No	Interval of Classes	F	Fk
1	40-45	10	10
2	46-51	16	26
3	52-57	10	36
4	58-63	1	37
5	64-69	2	39
6	70-75	7	46

Explanation :

$$Me = Bb + i\left(\frac{n/2 - F}{fm}\right)$$

Me = Median
Bb = Low limit of the interval median conceives Me
Fm = Frequency of class conceives Me
F = Frequency of cumulative before interval of classes conceives Me
i = Length of classes
n = Total of sample

Position of Me in the interval of classes is number 1, that:
Bb = 39,5
F = 10
fm = 10
i = 6
n = 46

So :

$$Me = Bb + i\left(\frac{n/2 - F}{fm}\right)$$

$$= 39,5 + 6\left(\frac{23 - 10}{10}\right)$$

$$= 39,5 + 6\ (13/10)$$
$$= 39,5 + 6\ (1,30)$$
$$= 39,5 + 7,80$$
$$= 47,30$$

6. Modus = Mo = $Bb + i\left(\frac{b1}{b1 + b2}\right)$

Explanation :
Bb = Low limit of interval conceives Mo
b1 = Quarrel of frequency conceives modus with frequency before
b2 = Quarrel frequency conceives modus with frequency next
i = Length of classes

Mo reside in interval number 2, that:
Bb = 45,5
b_1 = 14 – 10 = 4
b2 = 14 – 10 = 4
i = 6

So:

$$\text{Modus} = Mo = Bb + i\left(\frac{b1}{b1 + b2}\right)$$

$$= 475, 5 + 6\left(\frac{4}{4 + 4}\right)$$

$$= 45{,}5 + 6 \left(\frac{4}{8} \right)$$
$$= 45{,}5 + 6 \, (0{,}50)$$
$$= 45{,}5 + 3{,}00$$
$$= 48{,} \, 50$$

7. Score Interpretation $= \dfrac{2470}{100 \times 46} \times 100\%$

$$= \dfrac{2470}{4600} \times 100\%$$

$$= 53 \ \%$$

The table score of interpretation

Interval	Interpretation
0% - 20%	Very low
21% - 40%	Low
41% - 60%	**Enough**
61% - 80%	High
81% - 100%	Very High

Appendix XV
A. Range, Standard Deviation, Mean, Median, Modus, and Normality Test of Experimental Class by Using Guessing Game in Post-test

Result of the Normality Test of Experimental Class by Using Guessing Game in Post-Test

No	Students' Initial	Correct	Score	Category
1	RSL	17	85	Very High
2	AKH	13	65	High
3	ANP	16	80	High
4	NNT	15	75	High
5	AGY	16	80	High
6	MST	16	80	High
7	USN	13	65	High
8	EVS	12	60	Enough
9	HPS	15	75	High
10	EVF	13	65	High
11	RIF	13	65	High
12	RHL	15	75	High
13	ZUF	10	50	Enough
14	SIF	17	85	Very High
15	RAD	15	75	High
16	FAH	16	80	High

17	LAN	15	75	High
18	FHN	14	70	High
19	ELJ	15	75	High
20	RAA	14	70	High
21	AWA	13	65	High
22	ANS	14	70	High
23	AMI	15	75	High
24	ISN	14	70	High
25	KHA	16	80	High
26	ESL	14	70	High
27	FUY	15	75	High
28	NDN	14	70	High
29	RAL	16	80	High
30	MAA	14	70	High
31	RAR	16	80	High
32	RAI	13	65	High
33	RHN	14	70	High
34	PAM	13	65	High
35	LIK	14	70	High
36	MSN	14	70	High
37	RIS	10	50	Enough
38	WSL	12	60	Enough
39	WAL	15	75	High
40	RIZ	12	60	Enough
41	DRA	15	75	High
42	MKN	16	80	High
43	NHS	15	75	High
44	SAS	15	75	High
45	MRY	11	55	Enough
46	AHK	15	75	High
		677	3275	

1. High   = 85
   Low   = 50
   Range   = High – Low
            = 85 – 50
            = 35

2. Total of Classes   = 1 + 3,3 log (n)
            = 1 + 3,3 log (46)
            = 1 + 3,3 (1,66)
            = 1 + 5,47
            = 6,47
            = 6

3. Length of Classes $= \dfrac{range}{total\ of\ class}$ $= \dfrac{35}{6} = 5{,}83 = 6$

4. Mean

Interval Class	f	X	x'	fx'	x'^2	fx'^2
50-55	3	52,5	4	12	16	48
56-61	3	58,5	3	9	9	27
62-67	7	64,5	2	14	2	14
68-73	10	70,5	1	10	1	10
74-79	13	76,5	0	0	0	0
80-85	10	82,5	-1	-10	1	10
$i = 6$	46			35	29	109

$$Mx = M^1 + i\,\frac{\Sigma fx^1}{N}$$
$$= 76{,}5 + 6\left(\frac{35}{46}\right)$$
$$= 76{,}5 + 6\,(0{,}76)$$
$$= 76{,}5 + 4{,}56$$
$$= 81{,}06$$

$$SD_t = i\,\sqrt{\frac{\Sigma fx'^2}{N} - \left[\frac{\Sigma fx'}{N}\right]^2}$$
$$= 6\sqrt{\frac{109}{46} - \left[\frac{35}{46}\right]^2}$$
$$= 6\sqrt{2{,}35 - (0{,}76)^2}$$
$$= 6\sqrt{2{,}35 - 0{,}57}$$
$$= 6\sqrt{1{,}78}$$
$$= 6\,(1{,}33)$$
$$= 7{,}98$$

Table of the Frequency Distribution is Expected and Observation

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\dfrac{(f_0 - f_h)}{f_h}$
	85,5	0,55	0,2088				
80-85				0,1335	6,14	10	0,62

Interval	Boundary	z	F(z)	Area	fe	fo	x^2
	79,5	-0,19	0,0753				
74-79				0,2511	11,55	13	0,12
	73,5	-0,94	0,3264				
68-73				0,1281	5,89	10	0,69
	67,5	-1,69	0,4545				
62-67				0,1119	5,14	7	0,36
	61,5	-2,45	0,3426				
56-61				0,0211	0,97	3	2,09
	55,5	-3,20	0,3215				
50-55				0,0583	2,68	3	0,11
	49,5	-3,95	0,2632				
							3,99

Based on table above, researcher found that $x^2{}_{count} = 3,99$ while $x^2{}_{table} = 7,81$, cause $x^2{}_{cause} < x^2{}_{table}$ (3,99 < 7,81) with degree of freedom dk = 6 – 3 = 3 and significant level $\alpha = 5\%$. So distribution of experimental class by using guessin game (Post-test) is normal.

5. Median

No	Interval of Classes	F	fk
1	50-55	3	3
2	56-61	3	6
3	62-67	7	13
4	68-73	10	23
5	74-79	13	36
6	80-85	10	46

Explanation :

$$Me = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

Me = Median
Bb = Low limit of the interval median conceives Me
Fm = Frequency of class conceives Me
F = Frequency of cumulative before interval of classes conceives Me
i = Length of classes
n = Total of sample

Position of Me in the interval of classes is number 1, that:
Bb = 67,5

$$F \quad = 10$$
$$fm \quad = 10$$
$$i \quad = 6$$
$$n \quad = 46$$

So :

$$Me \quad = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

$$= 67,5 + 6 \left(\frac{23 - 10}{10} \right)$$

$$= 67,5 + 6 \, (13/10)$$

$$= 67,5 + 6 \, (1,30)$$

$$= 67,5 + 7,80$$

$$= 75,30$$

6. Modus $= Mo = Bb + i \left(\dfrac{b1}{b1 + b2} \right)$

Explanation :

$$Bb \quad = \text{Low limit of interval conceives Mo}$$
$$b1 \quad = \text{Quarrel of frequency conceives modus with frequency before}$$
$$b2 \quad = \text{Quarrel frequency conceives modus with frequency next}$$
$$i \quad = \text{Length of classes}$$

Mo reside in interval number 2, that:

$$Bb \quad = 73,5$$
$$b_1 \quad = 13 - 10 = 3$$
$$b2 \quad = 13 - 10 = 53$$
$$i \quad = 6$$

So:

$$Modus \quad = Mo \quad = Bb + i \left(\frac{b1}{b1 + b2} \right)$$

$$= 73, 5 + 6 \left(\frac{3}{3 + 3} \right)$$

$$= 73,5 + 6 \left(\frac{3}{6} \right)$$

$$= 73,5 + 6 \, (0,50)$$

$$= 73,5 + 3,00$$

$$= 76,50$$

7. Score Interpretation $= \dfrac{3275}{100 \times 46} \times 100\%$

$$= \frac{3275}{4600} \times 100\%$$

$$= 71 \%$$

The table score of interpretation

Interval	Interpretation
0% - 20%	Very low
21% - 40%	Low
41% - 60%	Enough
61% - 80%	**High**
81% - 100%	Very High

B. Range, Standard Deviation, Mean, Median, Modus, and Normality Test of Experimental Class by Using Picture in Post-test

Result of the Normality Test of Experimental Class by Using Picture in Post-Test

No	Students' Initial	Correct	Score	Category
1.	NUK	14	70	High
2.	IMP	12	60	Enough
3.	ABR	16	80	High
4.	SKS	14	70	High
5.	RIM	13	65	High
6.	NZA	14	70	High
7.	MEY	14	70	High
8.	MEH	13	65	High
9.	AHA	16	80	High
10.	EFD	14	70	High
11.	MUH	11	55	Enough
12.	ARD	13	65	High
13.	RSL	14	70	High
14.	NIH	16	80	High
15.	BSD	14	70	High
16.	AHF	14	70	High
17.	RFS	13	65	High
18.	NAH	14	70	High
19.	BUD	15	75	High
20.	RKN	14	70	High
21.	ISW	12	60	Enough
22.	ENA	13	65	High
23.	ALA	14	70	High
24.	BAR	16	80	High
25.	SHN	16	80	High
26.	SAP	13	65	High
27.	JUN	14	70	High

28.	DPD	16	80	High
29.	ERA	14	70	High
30.	IRP	11	55	Enough
31.	LEY	11	55	Enough
32.	MER	10	50	Enough
33.	MHB	12	60	Enough
34.	NAL	10	50	Enough
35.	RIK	12	60	Enough
36.	FIL	10	50	Enough
37.	NUR	12	60	Enough
38.	YEM	11	55	Enough
39.	NUS	12	60	Enough
40.	RID	15	75	High
41.	RIH	15	75	High
42.	NUZ	15	75	High
43.	RAA	12	60	Enough
44.	RUD	11	55	Enough
45.	SMR	12	60	Enough
46	SOH	14	70	High
		611	3055	

1. High   = 80
   Low   = 50
   Range   = High – Low
                  = 80 – 50
                  = 30

2. Total of Classes   = 1 + 3,3 log (n)
                         = 1 + 3,3 log (46)
                         = 1 + 3,3 (1,66)
                         = 1 + 5,47
                         = 6,47
                          = 6

3. Length of Classes $= \dfrac{range}{total\ of\ class}$ $= \dfrac{30}{6} = 5,00 = 5$

4. Mean

Interval Class	f	X	x$'$	fx$'$	x$'^2$	fx$'^2$
50-54	3	52	4	12	16	48
55-59	5	57	3	15	9	45
60-64	8	62	2	16	4	32

65-69	6	67	1	6	1	6
70-74	14	72	0	0	0	0
75-79	4	77	-1	-4	1	4
80-84	6	82	-2	-12	4	24
$i = 5$	46			33		159

$$Mx = M^1 + i\frac{\Sigma fx^1}{N}$$
$$= 72 + 5\left(\frac{33}{46}\right)$$
$$= 72 + 5\,(0,71)$$
$$= 72 + 3,55$$
$$= 75,55$$

$$SD_t = i\sqrt{\frac{\Sigma fx'^2}{N} - \left[\frac{\Sigma fx'}{N}\right]^2}$$
$$= 5\sqrt{\frac{159}{46} - \left[\frac{33}{46}\right]^2}$$
$$= 5\sqrt{3,45 - (0,71)^2}$$
$$= 5\sqrt{3,45 - 0,50}$$
$$= 5\sqrt{2,95}$$
$$= 5\,(1,71)$$
$$= 8,55$$

Table of the Frequency Distribution is Expected and Observation

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$
	84,5	1,04	0,3508				
80-84				0,1736	7,98	6	0,24
	79,5	0,46	0,1772				
75-79				0,0901	4,14	4	0,03
	74,5	-0,12	0,0871				
70-74				0,1709	7,86	14	0,78
	69,5	-0,70	0,2580				
65-69				0,1435	6,60	6	0,09
	64,5	-1,29	0,4015				
60-64				0,0678	3,11	8	1,57
	59,5	-1,87	0,4693				
55-59				0,0538	2,47	5	1,02

50-54	54,5	-2,46	0,4931	0,0311	1,43	3	1,09
	49,5	-3,04	0,4620				
							4,82

Based on table above, researcher found that $x^2_{count} = 4,82$ while $x^2_{table} = 5,99$, cause $x^2_{cause} < x^2_{table}$ (4,82 < 5,99) with degree of freedom dk = 5 – 3 = 2 and significant level $\alpha = 5\%$. So distribution of experimental class by using picture (Post-test) is normal.

5. Median

No	Interval of Classes	F	fk
1	50-54	3	3
2	55-59	5	8
3	60-64	8	16
4	65-69	6	22
5	70-74	14	36
6	75-79	4	40
7	80-84	6	46

Explanation :

$$Me = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

Me = Median
Bb = Low limit of the interval median conceives Me
Fm = Frequency of class conceives Me
F = Frequency of cumulative before interval of classes conceives Me
i = Length of classes
n = Total of sample

Position of Me in the interval of classes is number 1, that:

Bb = 64,5
F = 6
fm = 4
i = 5
n = 46

So :

$$Me = Bb + i \left(\frac{n/2 - F}{fm} \right)$$

$$= 64,5 + 5 \left(\frac{23 - 6}{4} \right)$$

$$= 64,5 + 5 \ (17/4)$$

$$= 64,5 + 5 \ (4,25)$$

$$= 64,5 + 21.25$$
$$= 85,75$$

6. Modus $= Mo = Bb + i\left(\dfrac{b1}{b1+b2}\right)$

Explanation :

    Bb   = Low limit of interval conceives Mo
    b1   = Quarrel of frequency conceives modus with frequency before
    b2   = Quarrel frequency conceives modus with frequency next
    i   = Length of classes

Mo reside in interval number 2, that:

    Bb   = 69,5
    b_1 = 14 − 6 = 8
    b2   = 14 − 4 = 10
    i   = 5

So:

$$
\begin{aligned}
\text{Modus} = Mo \quad &= Bb + i\left(\frac{b1}{b1+b2}\right)\\[6pt]
&= 69,5 + 5\left(\frac{8}{8+10}\right)\\[6pt]
&= 69,5 + 5\left(\frac{8}{18}\right)\\[6pt]
&= 69,5 + 5\,(0,44)\\
&= 69,5 + 2,20\\
&= 71,70
\end{aligned}
$$

7. Score Interpretation $= \dfrac{3055}{100 \times 46} \times 100\%$

$$= \frac{3055}{4600} \times 100\%$$

$$= 66\ \%$$

The table score of interpretation

Interval	Interpretation
0% - 20%	Very low
21% - 40%	Low
41% - 60%	Enough
61% - 80%	**High**
81% - 100%	Very High

Appendix XVI

HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as experimental class sample by using guessing game and variant of the second class as experimental class sample by using picture are used homogeneity test by using formula:

$$S^2 = \frac{n\Sigma xi^2 - (\Sigma xi)}{n(n-i)}$$

Hypothesis:

$$H_0 \quad : \delta_1^2 = \delta_2^2$$
$$H_1 \quad : \delta_1^2 \neq \delta_2^2$$

A.   variant of the experimental class sample by using guessing game is:

n   = 46
Σxi = 2485

$\Sigma_{xi} 2$ = 138175

So:

$$S^2 = \frac{n\Sigma xi^2 - (\Sigma xi)}{n(n-i)}$$
$$= \frac{46(138175) - (2485)^2}{46(46-1)}$$
$$= \frac{6356050 - 6175225}{46(45)}$$
$$= \frac{180825}{2070}$$
$$= 87,35$$

B. Variant of the experimental class sample by using picture is:

n   = 46
Σxi = 2470

$\Sigma_{xi} 2$ = 136600

So:

$$S^2 = \frac{n\Sigma x_1^2 - (\Sigma x_1)^2}{n(n-1)}$$

$$= \frac{46(136600) - (2470)^2}{46(46-1)}$$

$$= \frac{6283600 - 6100900}{46\,(45)}$$

$$= \frac{182700}{2070}$$

$$= 88{,}26$$

The Formula was used to test hypothesis was:

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

So:

$$F = \frac{87{,}35}{86{,}26}$$

$$= 1{,}01$$

After doing the calculation, researcher found that $F_{count} = 1{,}01$ with α 5 % and dk = 46 from the distribution list F, researcher found that $F_{table} = 1{,}66$, cause $F_{count} < F_{table}$ $(1{,}01 < 1{,}66)$. So, there is no difference the variant between the first class as experimental class by using guessing game and the second class as experimental class by using picture (homogeneous).

Appendix XVII

HOMOGENEITY TEST OF THE BOTH AVERAGES

The formula was used to analyse homogeneity test of the both averages was t-test, that:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt[5]{\frac{1}{n_1} + \frac{1}{n_2}}} \quad \text{with} \quad S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

So:

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{(46 - 1)(87,35) + (46 - 1)(88,26)}{46 + 46 - 2}}$$

$$= \sqrt{\frac{45(87,35) + 45(88,26)}{90}}$$

$$= \sqrt{\frac{3930,75 + 3971,70}{90}}$$

$$= \sqrt{\frac{7902,45}{90}}$$

$$= \sqrt{87,805}$$

$$= 9,37$$

So:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt[5]{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$= \frac{43,70 - 43,82}{9,37\sqrt{\frac{1}{46} + \frac{1}{46}}}$$

$$= \frac{-0,12}{9,37\sqrt{\frac{2}{46}}}$$

$$= \frac{-0,12}{9,37\sqrt{0,04}}$$

$$= \frac{-0,12}{1,87}$$

$$= -0,06$$

Based on researcher calculation result of the homogeneity test of the both averages, researcher found that t_{count} = -0,06 with opportunity $(1-\alpha) = 1 – 5\% = 95\%$ and dk = n_1 + n_2 -2 = 46 + 46 – 2 = 90 , reseracher found that t_{table} = 1,66, cause $t_{count} < t_{table}$ (-0,06 < 1,66). So, H_0 is accepted, it means no difference the average between the first class as experimental class by using guessing game and the second class as experimental class by using picture in this research.

Appendix XVIII
HOMOGENEITY TEST (POST-TEST)

Calculation of parameter to get variant of the first class as experimental class sample by using guessing game and variant of the second class as experimental class sample by using picture were used homogeneyity test by using formula:

$$S^2 = \frac{n\Sigma xi^2 - (\Sigma xi)}{n(n-i)}$$

Hypothesis:

$$H_0 \quad : \delta_1^2 = \delta_2^2$$
$$H_1 \quad : \delta_1^2 \neq \delta_2^2$$

A. variant of the experimental class sample by using extensive readng is:

n $\quad = 46$

$\Sigma xi = 3275$

$\Sigma_{xi} 2 = 236175$

$$S^2 = n\Sigma xi^2 - (\Sigma xi)^2$$

$$= \frac{46(236175) - (3275)^2}{46(46-1)}$$

$$= \frac{10864050 - 10725625}{46(45)}$$

$$= \frac{138425}{2070}$$

$$= 66,87$$

B. Variant of the experimental class sample by using picture is:

n $\quad = 46$

$\Sigma xi = 3055$

$\Sigma_{xi} 2 = 206275$

$$S^2 = \frac{n\Sigma x_1^2 - (\Sigma x_1)^2}{n(n-1)}$$

$$= \frac{46(206275) - (3055)^2}{46(46-1)}$$

$$= \frac{9488650 - 9333025}{46(45)}$$

$$= \frac{155625}{2070}$$

$= 75{,}18$

The formula was used to test hypothesis was:

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

So:

$$F = \frac{75{,}18}{66{,}87}$$

$= 1{,}12$

After doing the calculation, reseracher found that $F_{count} = 1{,}12$ with α 5 % and dk = 90 from the distribution list F, researcher found that $F_{table} = 1{,}66$, cause $F_{count} < F_{table}$ $(1, 12 < 1{,}66)$. So, there is no difference the variant between experimental class by using guessing game and experimental class by using picture (homogeneous).

Appendix XIX

DIFFERENCE TEST OF THE BOTH AVERAGES

To test difference test of the both averages was used t-test formula, that:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt[5]{\frac{1}{n_1} + \frac{1}{n_2}}} \quad \text{with} \quad S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

H_0 is accepted if $t \geq t_{(1-a)\,(n1+n2)}$ with opportunity $(1-\alpha) = 1 - 5 = 95\%$ and dk = (n1 + n2 − 2)

So:

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{(46 - 1)(66,87) + (46 - 1)(75,18)}{46 + 46 - 2}}$$

$$= \sqrt{\frac{45(66,87) + 45(75,18)}{90}}$$

$$= \sqrt{\frac{3009,15 + 3383,10}{90}}$$

$$= \sqrt{\frac{6392,25}{90}}$$

$$= \sqrt{71,02}$$

$$= 8,42$$

So:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt[5]{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$= \frac{81,06 - 75,55}{\sqrt[8,42]{\frac{1}{46} + \frac{1}{46}}}$$

$$= \frac{5,51}{\sqrt[8,42]{\frac{2}{46}}}$$

$$= \frac{5,51}{\sqrt[8,42]{0,04}}$$

$$= \frac{5,51}{1,68}$$

$$= 3,27$$

      Based on calculation result of the difference test of the both averages, researcher found that $t_{count} = 3,27$ with opportunity $(1-\alpha) = 1 - 5\% = 95\%$ and dk = $n_1 + n_2$ -2 = 46 + 46 − 2 =

90, and researcher found that $t_{table} = 1,66$, cause $t_{count} > t_{table}$ ($3,27 > 1,66$). So, H_a is accepted, it means that there is significant difference of guessing game and picture on the students' ability in vocabulary.

Appendix XX

PRODUCT MOMENT r Table

N	Taraf 5 %	Signif 1 %	N	Taraf 5 %	Signif 1 %	N	Taraf 5 %	Signif 1 %
3	0,997	0,999	27	0,381	0,487	55	0,266	0,345
4	0,950	0,990	28	0,374	0,478	60	0,254	0,330
5	0,878	0,959	29	0,367	0,470	65	0,244	0,317
6	0,811	0,917	30	0,361	0,463	70	0,235	0,306
7	0,754	0,874	31	0,355	0,456	75	0,227	0,296
8	0,707	0,834	32	0,349	0,449	80	0,220	0,286
9	0,666	0,798	33	0,344	0,442	85	0,213	0,278
10	0,612	0,765	34	0,339	0,436	90	0,207	0,270
11	0,602	0,735	35	0,334	0,430	95	0,202	0,261
12	0,576	0,708	36	0,329	0,424	100	0,195	0,256
13	0,553	0,684	37	0,325	0,418	125	0,176	0,230
14	0,532	0,661	38	0,320	0,413	150	0,159	0,210
15	0,514	0,641	39	0,316	0,408	175	0,148	0,194
16	0,497	0,623	40	0,312	0,403	200	0,138	0,181
17	0,482	0,606	41	0,308	0,398	300	0,113	0,148
18	0,468	0,590	42	0,304	0,393	400	0,098	0,128
19	0,456	0,575	43	0,301	0,389	500	0,088	0,115
20	0,444	0,561	44	0,297	0,384	600	0,080	0,105
21	0,433	0,549	45	0,294	0,380	700	0,074	0,097
22	0,423	0,517	46	0,291	0,376	800	0,070	0,091
23	0,413	0,526	47	0,288	0,372	900	0,065	0,086
24	0,404	0,515	48	0,284	0,368	1000	0,062	0,081
25	0,396	0,505	49	0,281	0,364			
26	0,388	0,496	50	0,279	0,361			

Z-Table
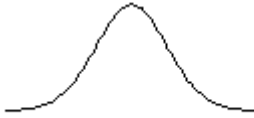
Density Function: Distribution Function:
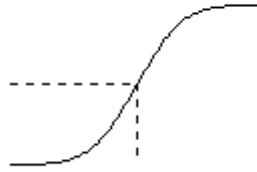
z = 0.00

p = .50

Area between 0 and z
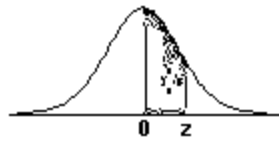
	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633

1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990

Chi-Square Table

df	0.995	0.99	0.975	0.95	0.90	0.10	0.05	0.025	0.01	0.005
1	---	---	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	79.490
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952

df	0.995	0.99	0.975	0.95	0.90	0.10	0.05	0.025	0.01	0.005
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169

Appendix XXIII

T-Table

df - degrees of freedom for t curve
P - area under the t curve with df degrees of freedom to the right of t(df)

Example:
P[t(2) > 2.92] = 0.05
P[-2.92 < t(2) < 2.92] = 0.9

	0.25	0.2	0.15	0.1	0.05	0.025	0.02	0.01	0.005	0.0025	0.001	0.0005
df												
1	1.000	1.376	1.963	3.078	6.31	12.70	15.90	31.82	63.65	127.3	318.3	636.619
2	0.817	1.061	1.386	1.886	2.920	4.303	4.849	6.965	9.925	14.08	22.33	31.599
3	0.765	0.979	1.250	1.638	2.353	3.182	3.482	4.541	5.841	7.453	10.22	12.924
4	0.741	0.941	1.190	1.533	2.132	2.776	2.999	3.747	4.604	5.598	7.173	8.610
5	0.727	0.920	1.156	1.476	2.015	2.571	2.757	3.365	4.032	4.773	5.893	6.869
6	0.718	0.906	1.134	1.440	1.943	2.447	2.612	3.143	3.707	4.317	5.208	5.959
7	0.711	0.896	1.119	1.415	1.895	2.365	2.517	2.998	3.499	4.029	4.785	5.408
8	0.706	0.889	1.108	1.397	1.860	2.306	2.449	2.896	3.355	3.833	4.501	5.041
9	0.703	0.883	1.100	1.383	1.833	2.262	2.398	2.821	3.250	3.690	4.297	4.781
10	0.700	0.879	1.093	1.372	1.812	2.228	2.359	2.764	3.169	3.581	4.144	4.587
11	0.697	0.876	1.088	1.363	1.796	2.201	2.328	2.718	3.106	3.497	4.025	4.437
12	0.696	0.873	1.083	1.356	1.782	2.179	2.303	2.681	3.055	3.428	3.930	4.318
13	0.694	0.870	1.079	1.350	1.771	2.160	2.282	2.650	3.012	3.372	3.852	4.221
14	0.692	0.868	1.076	1.345	1.761	2.145	2.264	2.624	2.977	3.326	3.787	4.140
15	0.691	0.866	1.074	1.341	1.753	2.131	2.249	2.602	2.947	3.286	3.733	4.073
16	0.690	0.865	1.071	1.337	1.746	2.120	2.235	2.583	2.921	3.252	3.686	4.015
17	0.689	0.863	1.069	1.333	1.740	2.110	2.224	2.567	2.898	3.222	3.646	3.965
18	0.688	0.862	1.067	1.330	1.734	2.101	2.214	2.552	2.878	3.197	3.610	3.922
19	0.688	0.861	1.066	1.328	1.729	2.093	2.205	2.539	2.861	3.174	3.579	3.883
20	0.687	0.860	1.064	1.325	1.725	2.086	2.197	2.528	2.845	3.153	3.552	3.850
21	0.686	0.859	1.063	1.323	1.721	2.080	2.189	2.518	2.831	3.135	3.527	3.819
22	0.686	0.858	1.061	1.321	1.717	2.074	2.183	2.508	2.819	3.119	3.505	3.792
23	0.685	0.858	1.060	1.319	1.714	2.069	2.177	2.500	2.807	3.104	3.485	3.768
24	0.685	0.857	1.059	1.318	1.711	2.064	2.172	2.492	2.797	3.091	3.467	3.745
25	0.684	0.856	1.058	1.316	1.708	2.060	2.167	2.485	2.787	3.078	3.450	3.725
26	0.684	0.856	1.058	1.315	1.706	2.056	2.162	2.479	2.779	3.067	3.435	3.707
27	0.684	0.855	1.057	1.314	1.703	2.052	2.158	2.473	2.771	3.057	3.421	3.690
28	0.683	0.855	1.056	1.313	1.701	2.048	2.154	2.467	2.763	3.047	3.408	3.674
29	0.683	0.854	1.055	1.311	1.699	2.045	2.150	2.462	2.756	3.038	3.396	3.659
30	0.683	0.854	1.055	1.310	1.697	2.042	2.147	2.457	2.750	3.030	3.385	3.646
40	0.681	0.851	1.050	1.303	1.684	2.021	2.123	2.423	2.704	2.971	3.307	3.551
50	0.679	0.849	1.047	1.299	1.676	2.009	2.109	2.403	2.678	2.937	3.261	3.496
60	0.679	0.848	1.045	1.296	1.671	2.000	2.099	2.390	2.660	2.915	3.232	3.460
80	0.678	0.846	1.043	1.292	1.664	1.990	2.088	2.374	2.639	2.887	3.195	3.416
100	0.677	0.845	1.042	1.290	1.660	1.984	2.081	2.364	2.626	2.871	3.174	3.390
1000	0.675	0.842	1.037	1.282	1.646	1.962	2.056	2.330	2.581	2.813	3.098	3.300
z*	0.674	0.841	1.036	1.282	1.645	1.960	2.054	2.326	2.576	2.807	3.090	3.291

50% 60% 70% 80% 90% 95% 96% 98% 99% 99.5% 99.8% 99.9%
Confidence level C