



**THE EFFECT OF CHAIN DRAWING GAME ON THE VOCABULARY
MASTERY AT THE SEVENTH GRADER OF
SMP SETIA BUDI BINJAI**

A THESIS

*Submitted to the Faculty of Tarbiyah and Teacher Training State Islamic
University of North Sumatera Medan as a Partial Fulfillment of the Requirements
for the Degree of Sarjana Pendidikan*

By:

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**DEPARTMENT OF ENGLISH EDUCATION
FACULTY OF TARBIYAH AND TEACHERS TRAINING
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MEDAN
2018**

Nomor : Istimewa
Lamp : -
Perihal : Skripsi
a.n. **Siti Zahbi Sa'diyah Sir**

Medan, 2018
Kepada Yth:
Bapak Dekan FITK
UIN-SU
di-
Tempat

Assalamualaikum Wr. Wb.

Setelah membaca, meneliti dan memberi saran-saran perbaikan seperlunya terhadap skripsi mahasiswa a.n. **Siti Zahbi Sa'diyah Siregar** yang berjudul:

“THE EFFECT OF CHAIN DRAWING GAME ON THE VOCABULARY MASTERY AT THE SEVENTH GRADE OF SMP SETIA BUDI”,

maka kami berpendapat bahwa skripsi ini sudah dapat diterima untuk melengkapi syarat-syarat untuk mencapai gelar Sarjana Pendidikan (S.Pd.) pada Fakultas Ilmu Tarbiyah dan Keguruan UIN Sumatera Utara Medan.

Demikian kami sampaikan, atas perhatian Bapak kami ucapkan terima kasih. Wassalamualaikum Wr. Wb

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PERNYATAAN KEASLIAN SKRIPSI

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Menyatakan dengan sebenarnya bahwa skripsi yang saya serahkan ini benar-benar merupakan hasil karya sendiri, kecuali kutipan-kutipan dari ringkasan-ringkasan yang semuanya telah saya jelaskan sumbernya. Apabila di kemudian hari terbukti atau dapat dibuktikan skripsi ini hasil jiplakan, maka gelar ijazah yang diberikan oleh Universitas batal saya terima.

Medan, 2018

Yang Membuat Pernyataan

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ABSTRACT

SITI ZAHBI SA'DIYAH SIREGAR, NIM.34144033, THE EFFECT OF CHAIN DRAWING GAME ON THE VOCABULARY MASTERY AT THE SEVENTH GRADE OF SMP SETIA BUDI BINJAI

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

Keywords: Chain Drawing Game, Students' Vocabulary Mastery

This research was intended to find out the empirical evidence of the students' vocabulary mastery by using chain drawing game at the seventh grade students of SMP Setia Budi Binjai Sumatera Utara. This research was pre-experimental research. The population of this research was students' of class VII of SMP Setia Budi Binjai Sumatera Utara. The samples of this research were taken from 21 students of pre-experimental class (class VII-1. The instrument for collecting data were pre-test and post-test. After analyzing the data, the researcher got; (1) The students' vocabulary mastery of the pre-test got the mean 62.85 and standard deviation was 7.67; (2) The students' vocabulary mastery post-test got the mean 83.33 and standard deviation was 5.08. The value of $t_{observed}$ was 46.9 and that of t_{table} was 2.02. So the value of $t_{observed}$ was higher than that of t_{table} . It means that there was significant effect of using chain drawing game on students' vocabulary mastery.

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Finally, the writer realizes that this paper is far from being perfect and to suggestion and correction. It is a great pleasure for the writer to receive critics and suggestions in developing this research and it will has some values for the writer and for a better thing in the future. Hopefully this thesis may give the advantages for all.

Medan, Agustus 2018

SITI ZAHBI SA'DIYAH SIREGAR
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CHAPTER I

INTRODUCTION

A. The Background of the Study

The objective of teaching vocabulary are that the students is expected to be able to learn new vocabulary words, use them correctly in a sentence, and understand their meaning in the context. All languages have words. Language emerges first as words, both historically, and in terms of the way each of us learned our first and any subsequent languages. The coining of new words never stops. Nor does the acquisition of word. Even in our first language we are continually learning new words, and learning new meanings for old words.¹Vocabulary is one element that cannot be separated from language learning as it links the four language skills, namely : speaking, listening, reading and writing.

One's comprehension on a text either written or spoken will be highly depended on his/her level of vocabulary mastery. If he has sufficient numbers of vocabulary, he will easily comprehend the points either what writer delivers in a written text or message delivered in spoken text. Therefore, vocabulary mastery has become one of the indications to measure one's depth of knowledge. Without grammar very little can be conveyed, without vocabulary nothing can be

¹ Scott Thornburry. *How to Teach Vocabulary*, (Oxford : Pearson, 2002), p. 1

conveyed.

To achieve the objective, the teacher has done several efforts. First, the teacher ordered the students to read the text. Second, the teacher introduced students to new words they might find in the text. Third, the teacher gave directions to the students to give the meaning of the words in their native language. Fourth, the teacher gave students time to recall the words. Fifth, the teacher checked their understanding by asking them to use the vocabulary again or by asking the meaning of the vocabulary they have just learnt.

However, in fact based on the writer's experience during conducting *Praktek Pengalaman Lapangan (Teaching Practicum)* at Islamic Junior High School 2017, the writer found most of the students have difficulties in vocabulary mastery. Firstly, the students are difficult to recall their vocabularies. They just get the vocabulary and the meaning from their teacher or dictionary to be remembered., teacher must have a good method or technique to teach vocabularies. Secondly, students are difficult to master vocabulary because of minimum motivation and creativity from the teacher.

There are several factors causing vocabulary mastery to be still low. The first is from the internal factors that is :interest, motivation, personality, and learning style. The second is from the external factors that is : teachers method, the lack of facilities, friends' and the material.

The practice of teaching vocabulary which is typically done in many schools also makes students do not have creativity and initiatives. Mostly, students only ask teachers to provide the meaning of unfamiliar words found in a text. They wait for teachers to control the lesson by providing the meaning of the words and

write them on their notebooks or to use them to complete their exercise. As a result, students can only use the word in the exact form they have taught and not knowing how to use them in different contexts in the real life communication.

But, some of the students have realized the importance of vocabulary in learning a foreign language. They also have strategies and ways to enhance the number of vocabulary they have, usually, they carry a bilingual dictionary anywhere they go. As soon as they meet unfamiliar words, they will look up the new meaning of those words from the dictionary and write them on their notebooks. But, after a while, they soon realize that this is not an effective way to improve the number of their vocabulary mastery. Most of the time, students feel bored and frustrated learning this way because they often forget the words as soon as they write them. Sometimes, this condition might lead them to be conclusion that they have bad memorizations and this condition is concern to lead them to lose motivation.

The teacher's creativity to bring some method or technique in teaching English that are interesting for students into classroom is needed. One of the methods or technique is using game in teaching English. The problem of students in teaching vocabulary at junior high school can be lack of preparing facilities, the lack of English book and the lack of students' parents' attention to control their children to learn English. Another problem also comes from the teacher such as the teaching media or topic which is use by the English teacher does not arise the students' interest. So. Teacher need to create or to think an interesting way to enrich the students' vocabulary.

In language teaching, games often been used to stimulate students

motivation and interest as games are fun challenging. *Chain drawing* game is a suitable game to be used in teaching Junior High School students. First, the students feel happy, enjoy and interest. As the result, teacher is easier to conduct the students in the learning process. Second, the students become more active in doing activities such as; answering teacher's questions, listening, speaking and working together with their friends. So, they do not feel bored in their study. Finally, they could improve their confidence in English class.

The chain drawing game is one way to increase vocabulary, also to makes the teacher more creative and responsible. Teacher becomes more serious in teaching and the learning process prepared well. This game creates an ideal condition because teacher explains the materials by fun learning activities in classes. Furthermore, there are feedback and interaction between teacher and the students. Thus, the goals of education are easy to be reach.

Based on this background, the writer is interested in conducting a research and find out: **“The Effect of Chain Drawing Game on Students’ Vocabulary Mastery at the Seventh Grade in SMP Setia Budi Binjai”**.

B. The statements of the Problems

Based on the background of the study above, it can be identified on some problems:

1. The students’ difficulties in understanding English language because lack of vocabulary.
2. The students are lazy to memorize vocabularies because the teacher

teaches them monotonous in other word the teacher is not creative.

3. The students' difficulties in using the English vocabulary in the sentence.

C. The Research Question

Based on the background which was given above, this study will investigate the use of chain drawing game in teaching vocabulary in the classrooms. Based above notions above, the problems of the study can be formulated as follows: Is there any significant effect of the students' vocabulary mastery taught by chain drawing game?

D. The Purpose of the Study

The aim of this pre-experiment research is to find out the students' vocabulary mastery who are taught by chain drawing game.

E. The Significances of the Study

Theoretically, this study is significant to enrich the theory of teaching vocabulary. Practically, this research is significant for: 1.) The students' as an input to improve their vocabulary master ; 2.) The English teachers as an input to increase their skills in teaching vocabulary; 3.) The headmaster as an input to improve the quality of the teachers in doing better instruction.

E. The Limitation of the study

Based on the problem that identify above, the researcher limits the research focus to statement of the problem. The problem of the students is lack of vocabulary, lazy to memorize the vocabulary, and the difficult using the vocabulary in a sentence. And the solutions of the problems focus on chain drawing game. To know the effect of chain drawing game on students' vocabulary mastery.

CHAPTER II

REVIEW OF LITERATURE

A. Theoretical Framework

1. Vocabulary Mastery

Vocabulary mastery is closely related to the ability of learners to understand and use the vocabularies orally and literally. According to Ellis et al, mastery is comprehensive knowledge or use of a subject or instrument. Mastering a word mean mastering the aspects of word knowledge. Ellis summarize that word knowledge include, the meaning, the spoken form, the written form, the grammatical behavior, the word derivation, the collocation of the words, the register of the word, spoken and written, the connotation or associations of the word, and word frequency.²

Mastery is 1) the authority of a master: dominion, the upper hand in a contest or competition: superiority, ascendancy. 2) possession or display of great skill or technique, skill or knowledge that makes one master of a subject: command.³

²Ellis et al. *Vocabulary Mastery*, accessed on 27th February 2018, (www.wordpress.com)

³Merriam Webster, *Definition of Mastery*, accessed on 31st March 2018,

Mastering vocabulary is one of the tools which are used by someone to master a certain language. One learns English in order to enable him to communicate in that language. He intends to be able to listen, speak, read, and write. To achieve those aims, he must master a number of vocabularies and their meaning.

According to Oxford Dictionary, a vocabulary is defined as “all the words known and used by a particular person”. A person’s vocabulary is the set of words they are familiar with in a language. Learning a language means learning the words and their meanings. ⁷ and which form. We try to send message, share information and ideas by using the language.⁴ In teaching vocabulary, the students need to know the meaning of the word, the form of the word, and use correctly in the context. The meaning of the word, make sure it is clear (may be check in learner dictionary before the lesson if you are not confident). Remember to ask questions to check they have understand properly. The form of the word, students need to know if it is a verb / a noun / a adjective etc to be able to use it effectively.

Vocabulary is the range or words that can be used to performance better in all aspect or English language work. A large vocabulary can help to express ideas precisely and vividly. The vocabulary can be different for its meaning relation, namely synonym, antonym, and homophon. Synonym is a word that means that same thing. Example : See / Look, Fast / Quick, etc. Antonym is a word of opposite meaning. Example : Long X Short, Difficult X Easy, etc.

(<https://www.merriam-webster.com/dictionary/mastery>)

⁴ AS Hornby, *Oxford Learners Pocket Dictionary*, (New York: University Press, 2003) p. 462

Homophones are words having the same sound but different meaning. Example :
Hear (verb) and Here (adverb).

Schmitt states that vocabulary is made of more than just single words.⁵ Words can also be related because they enter into semantic relations of antonymy, synonymy, etc. According to Richard vocabulary is defined as a set of lexemes including single words, compound words, and idioms. A lexeme is the smallest unit in the meaning system of the language that can be distinguished from other similar units.

Vocabulary is the knowledge of words and word meanings.⁶ As Steven Stahl puts it, “vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world.” Vocabulary knowledge is not something that can ever be fully mastered; it is something that expands and deepens over the course of a lifetime.⁷ Stahl states that there are four types of vocabulary which must be known and mastered for any skills, such as reading, listening, writing, and speaking. (a) Reading vocabulary : Reading vocabulary is all the words he or she can recognize when reading. This is the largest type of vocabulary simply because it includes the other types of vocabulary. (b) Listening vocabulary : Listening vocabulary is all the words he or she can recognize when listening to speech. This vocabulary varies in size by context and tone and voice. (c) Writing vocabulary : Writing vocabulary is all the words he or she can employ in writing. Contrary to the previous two vocabulary types, the

⁵ Norbert Schmitt, *Vocabulary in Language Teaching*, (Cambridge : Cambridge University Press, 2000) p.96

⁶ Diamond, *Teaching Vocabulary*. Accessed On 28th February 2018 (www.Ldonline.org/article/9943.com)

⁷ Steven Stahl, *Teaching of Meaning (Literacy Teaching)*, Accessed On 28th February 2018, (<http://www.readnaturally.com/>)

writing vocabulary is stimulated by its user. (d) Speaking vocabulary :Speaking vocabulary is all the words he or she can use in speech. Due to spontaneous nature of speaking vocabulary, words are often missing. This may be compensated by facial expressions, tone of voice or hand gesture.

Teaching vocabulary is not only giving and explaining new words or vocabulary, but also implementing the vocabularies in many various contexts which make the students understand their meanings and then able to appropriately use them in the different contexts. The assumption that the weakness of junior high school students in understanding spoken and written text is that they lack vocabulary in their minds has supported the teacher to choose an appropriate method and medium to be used in teaching and learning process.

Vocabulary is one of the most obvious components of language and one of first things applied linguistics turned their attention. On the other hand, vocabulary is the stock of words used by people or particular uses or person, or a list of collection of the word of a language, book, author, and branch of science or the like, in alphabetical order and defined.⁸ According to Nation Words are not isolated units of the language but fit into many interlocking systems and levels. And he divided kinds of vocabulary into two that is receptive vocabulary and productive vocabulary. Receptive carries the idea that we receive language input from others through listening or reading and try to comprehend it. Productive carries the idea that we produce language form by speaking and writing to convey message the others. The term passive (for listening and reading) and active (for speaking and writing) are sometimes used as synonyms for receptive and

⁸Jeremy Harmer, *The Practice of English Language Teaching*. (Harlow:Loungman, 2001) p. 16

productive.⁹

Receptive vocabulary uses distinguishing the form of a word while listening or reading and retrieving meaning. Then productive vocabulary it used to express a meaning through speaking or writing and producing the appropriate spoken or written word from.¹⁰

Thornbury states that without grammar vary little can be conveyed, without vocabulary nothing can be conveyed. If you spend most of your time studying grammar, your English not improve very much. You will see most improvement if you learn more words and expressions. You can say very with grammar, but you can say almost anything with words. Thornbury defines that vocabulary has been seen as a major resource for language use. There are many types of vocabulary that are divided by the expert. In traditional classification, there are four types of vocabulary. They are verb, noun, adverb, and adjective.¹¹

Vocabulary is core components of listening, speaking, reading and writing. It is due to the fact that learning vocabulary is essential aspect that cannot be separated from learning other skills in English.¹²In order to understand the language, vocabulary is crucial to be mastered by the learner. Vocabulary mastery is needed to express our ideas and to be able to understand other people's saying.¹³ Vocabulary mastery according to Marksheffel(in Asian pacific journal of Didik Santoso) is the ability to give meaning to words. Understanding

⁹Nation, *Learning Vocabulary in Another Language*, (Cambridge: Cambridge University Press, 2001) p. 37

¹⁰*Ibid*, p.38

¹¹Thornbury, *op.cit*, p.13

¹² Richard, *Methodology in Language Teaching : An Anthology of Current Practice*, (New york : Cambridge University Press, 2005) p.255

¹³ Al qahtani, mofareh, *The Importance of Vocabulary in Language Learning and How to Be Taught*, (Saudi Arabia : International Journal of teaching and Education, 2015), accessed on 18th March 2018

meaning of a single word is important. But the problem is one word does not always represent one meaning. To understand meaning needs not just knowing literal meaning but also contextual meaning.¹⁴

The concept of a word can be defined in various ways, but three significant aspect teachers need to be aware of and focus on are *form, meaning,* and *use*.¹⁵ These are classified according to the various aspects of what is involved in knowing a word as in the table below :

Table 2.1. A Range of Activities for Vocabulary Learning

Form	Spoken form	Pronounce the word Read aloud
	Written form	Word and sentence dictation Finding spelling rules
	Words part	Filling word part table Cutting up complex words Buildings complex words Choosing a correct form
	Form meaning connection	Matching word and definition Discussing the meaning of phrases

¹⁴Santoso, Didik, *The Effect of Instructional Approaches on English Vocabulary Mastery of Economic Vocational School Students* (Singapore : Asia Pacific Journal of Linguistics, 2013), accessed on 15th March 2018

¹⁵ Nation, *op.cit*, pp.39-40

		<p>Drawing and labeling pictures</p> <p>Peer teaching</p> <p>Riddles</p>
Meaning	Concept and reference	<p>Finding common meaning</p> <p>Choosing the right meaning</p> <p>Semantic feature analysis</p> <p>Answering questions</p> <p>Word detectives</p>
	Associations	<p>Finding substitutes</p> <p>Explaining connections</p> <p>Making words maps</p> <p>Classifying words</p> <p>Finding opposites</p> <p>Suggesting causes or effects</p> <p>Suggesting associations</p> <p>Finding example</p>
	Grammar	Matching sentence halves

Use		Putting words in order to make sentence
	Collocates	Matching collocates Finding collocates
	Constraints on use	Identifying constraints Classifying constraints

Each aspect in the learning goal of the activity. Some of the activities could be classified under several aspects of what is involved knowing a word. The first is form : spoken form, written form, words part, and form meaning connection. According to Nation, the form of a word involves its pronunciation (spoken form), spelling (written form), and any word parts that make up this particular item (such as prefix, root, and suffix). Spoken form has the goals of getting learner to be able to recognize a word when they hear it, and to able to pronounce a word correctly. The activity of spoken form can be pronounce the word, read aloud, etc. Written form has irregular spelling system. The activity of written word is the learners write words and sentences that the teacher dictates to them. Form meaning connection tries to separated recognizing the form and knowing a meaning from being able to connect a particular form to a particular meaning. The activity of form meaning connection is matching word and definition, discussing the meaning of phrases, drawing and labeling picture, peer teaching, and riddles.

The second is meaning : concept and reference, and association. According to Nation, Meaning encompasses the way that form and meaning work together, in other words, the concept and what items it refers to, and the associations that come to mind when people think about a specific word or expression. Concept and reference having a clear idea of the underlying meaning of a word that runs through its related uses, and also involve being aware of the range of particular uses it has, that is, what can refer to. The activity is finding common meaning, choosing the right meaning, semantic feature analysis, answering questions, and word detectives. Association of a word to a large degree are a result of the various meaning systems that the word fits into. These include, for example synonymy, antonymy, superordinate and subordinate words. The activity of association is finding substitutes, explaining connection, making words maps, classifying words, finding opposites, suggesting causes or effects, suggesting association, and finding example.

The third is use : grammar, collocates, and constraints on use. According to Nation, Use involves the grammatical function of the word or phrase, collocations that normally go with it, and finally any constraints on its use, in terms of frequency. Grammar is knowing a word involves knowing how to use in sentences. The activity of grammar is the learners are given sentences halves containing vocabulary they have met before and they have to match the halves to make complete sensible sentence, and ordering words. Collocations is knowing what words can occur with other words help language use and contributes to the fluency with which language can be used. The activity of collocates is matching and finding collocates.

Vocabulary mastery is competence to know words and meaning. The students are not only hoped to know the words but also their meaning. It is the duty of the teacher to select with what words are suitable to be taught to the students, so the students will learn more easily.¹⁶

In learning vocabulary, students might get some difficulties. Some factors that often course this problem are:¹⁷ (a) pronunciation: research shows that re difficult to pronounce are more difficult to learn. Potentially difficult words will typically be those that contain sounds that are familiar to same group of learners such as *regular* and *lorry* for Japanese speakers, (b) spelling: words that contain silent letters are particularly problematic, such as *foreign, listen, climbing, honest, etc.* (c) length and complexity: long words seem to be no more difficult to learn that short ones. But, as a rule of thumb, high frequency words tend to be short in English, and therefore the learner is likely to meet them more often, a factor favoring their 'learn ability', (d) meaning: when two words overlaps in meaning, learners are likely to confuse them. *make* and *do* are a case in point: You make breakfast and make an appointment, but you do the housework and do a questioner. (e) Range, connotation, and idiomatic: word that can be used in a wide range of contexts will generally be perceived as easier than their synonyms with a narrower range.

Mastery the knowledge also importance in Islam. The importance of mastery the knowledge is supported by teaching of Islam. Islam is a religion which establishes compulsory education with the following hadith :

¹⁶ Martha, 2010, *Definition of Vocabulary Mastery*, accessed on 28th February 2018 (<http://id.scribd.com/doc/18475644/vocabulary-mastery>)

¹⁷ Thornburry, *op.cit*, pp.27-28

طَلِبُ الْعِلْمِ فَرِيضَةٌ عَلَى كُلِّ مُسْلِمٍ وَمُسْلِمَةٍ

The meaning : “Seek knowledge is obligation for moeslim”.¹⁸ Based on the above hadith the Prophet confirms obligation to see a knowledge.

Allah SWT has given us ability to do everything even to communicate especially in developing vocabulary. He says the words in Quran surah Al-Baqarah in the 31-33th verse :

It means “And He taught Adam all the names (of things) all over, then forward it to the angels, saying: “Mention me the names of these if you are really frightened of the truth”. They said: “Glory to Allah, that we know nothing other than what you have taught us. Allah is Al-knowing and wisely. He said: O Adam! Inform them of their names, and when he had

¹⁸ Ibnu Hajar Al- Asqalani, *Ringkasan Taribghib waTarhib*, Jakarta: Pustaka Azzam, 2006, p. 27.

informed of their names, he said: Did I not tell you that I know the secret of the heavens and the earth? And I that which ye disclose and which ye hide”¹⁹

In conclusion, Vocabulary mastery is competence to know words and meaning. The students are not only hoped to know the words but also their meaning. Vocabulary mastery is skill or knowledge that makes one master of a vocabulary.

2. Chain Drawing Game

a. Definition Chain Drawing Game

According to Sutrisno,²⁰ chain drawing game is a game that the fun activity can be used with all groups. This games give the opportunity to express their idea through draw. And music playing when their express their idea through drawing. In teaching English, game is one of ways to make the students interest following the teaching learning activity. Chain drawing game suitable or right for Junior High School degree.

According to Budden,²¹ chain drawing game is a game that the fun activity can be used with all groups. The activity of this game can be reveal the idea, concept, opinion or thought and feeling through drawing. Everybody knows

¹⁹ Yusuf Ali, Abdullah, *English Translation of Al Qur'an*, accessed on 10th March 2018 (www.alqur'an/englishtranslate)

²⁰Sutrisno, *50 Games Inovatif :UntukMempermudahBelajarBahasaInggris*, (Yogyakarta : MitraBuku, 2012) p. 56

²¹Budden Joanna, *Chain Drawing*. British Council : 2008, accessed on 2nd November 2017 (<http://www.teachingenglish.org.uk/article/chain-drawings.com>)

that game are fun, but some people think that they are only fun. In fact, game not only fun and enjoyable teaching learning for the students to follow such as chain drawing game. Chain drawing game make the students actively involved in the teaching learning process.

Chain game is combined of chain game and drawing game. Chain game is students extends a sentence by adding more and more vocabulary items. And drawing game is students draw vocabulary items for others to guess.²²Games are highly motivating and they give students more opportunity to express their opinions, and feelings. Chain drawing is the picturing or drawing activity doing by one of the student and add the other students of their team. Chain drawing game bring in relaxation and fun for students when they listening music, Thus help them learn and express their idea more easily and involve a good teamwork.

From these definition above, chain drawing game is a game that fun activity can be used with all groups that the students express their idea through draw and adding more drawing from other students.

b. Principle of Chain Drawing Game

The chain drawing game inspired by the cooperative learning. Chain drawing supports vocabulary acquisition. this theory said cooperative or collaborative learning essentially involves students learning from each other in groups. In chain drawing game, teachers teach students collaborative or social skills so that they can work together more effectively. Indeed, cooperative not

²²Molinsky, *Handbook of Vocabulary Teaching Strategies*, (New Jersey: Paramount, 2000) p.6

only a way of learning but also a theme to be communicated about and studied.²³

The vocabulary lesson will be done in cooperative groups. Each student is to help the other students learn the new vocabulary words. The principle is students are encouraged to think in terms of positive interdependence, which means that the students are not thinking competitively and individualistically, but rather cooperatively and in terms of the group. In cooperative learning, students often stay together in the same groups for a period of time so they can learn how to work better together.

c. Design of Chain Drawing Game

Chain drawing game used to familiarize students with new terms, teaching them the necessary steps to acquire and implement new words into their vocabulary as they see, hear, recognize, know and use the words. Students will draw, identify, write the words in their draw. This is a great way to help students enhance their vocabulary.

The vocabulary lesson will be done in cooperative groups. Each students is to help the other students learn the new vocabulary words, the students ask which groups they should form. The teacher give paper and color pencils to prepare the drawing and doing sustainable. The groups discuss how to make the word from the their drawing. The teacher give feedback on how students did on the target social skill. Teacher not only teach language especially in vocabulary mastery,

²³ Diane, *Technique and Principles in Language Teaching* (Oxford : Oxford University Press, 2008) p. 264

they teach cooperation as well.

d. Procedure of Chain Drawing Game

The procedure of chain drawing game is : 1) Give each students a piece of paper and some colored pencils. 2) Tell them that you are going to play some music and you want them to draw whatever comes into their heads. 3) As the music is playing, all students should be drawing. 4) After 20 or 30 seconds, stop the music. 5) Students stop drawing and pass their picture to the person to the left of them in the circle. 6) Play the music again and they continue with the drawing the person next to them had started. 7.) Stop the music again, pass pictures on and this continues until the end of the song. 8) When you have finished each student will have a picture that several students contributed to. 9) Then it's up to you what to do with the pictures. They can be used to describe to the group, to write a story about. Or they can pretend they were a dream the student had last night and the rest of the class can try to analyze the meaning of the dream. 10) Use different types of music to get different types of pictures. I've found that reggae and samba produce happy beach scenes and dance music gets futuristic city scenes!. 11) If you want to 'force' the pictures towards a topic you are studying, ask some questions about the topic first and get students into thinking about the theme.²⁴

e. Advantage and Disadvantage of Chain Drawing Game

Same with the other learning method, the chain drawing game also has some advantages and disadvantages. The advantages of chain drawing game are

²⁴Sutrisno, *op cit*, p.57

:(a) Make the students' interest. (b) Suitable for Junior High School. (c) Make the students' active and creative. (d) Make the students enjoyable and fun. The disadvantages of chain drawing game are: (a) Need the higher creativity from the students. (b) Get out much fund.

B. Relevant Study

There are several related studies done by some researcher :

1.) Purwanto²⁵, conducted a research about "Improving the students mastery of English vocabulary by using chain drawing strategy (An action research in the case of the fourth grade students of SD Muhammadiyah 1 Kudus)". The objectives of this research is to know the improvement of the students' vocabulary mastery of English vocabulary of the fourth grade students of SD Muhammadiyah 1 Kudus in academic year 2012/2013 by using chain drawing game. The population of this study was the fourth grade of SD Muhammadiyah 1 Kudus. The researcher taking sample in IV C. there are 29 person in sample (17

²⁵ Muhammad DwiPurwanto, *Improving the Students Mastery of English Vocabulary by Using Chain Drawing Strategy*, skripsi (Kudus: Muria KudusUniversity, 2012)

male students and 12 female students). The researcher used a classroom action research. This research consisted of 3 cycles and each cycle consist of planning, action, observation, and reflection. The instrument of the research were by using test and observations.

2.) Asy'ari²⁶, did a research about “ The Effectiveness of Talking Stick Method Toward Vocabulary Size at 11th Graders of MAN Model Palangka Raya”. This research aims at measuring the effect of talking stick method on vocabulary size gained by eleventh graders of MAN PalangkaRaya. The type of this study was quasi-experimental especially non-randomized control group, pre-test post-test design and it was used quantitative approach in finding out the answer of the problem of the study, the data collecting technique used test. There were two classes of study namely XI MIPA 3 as experiment group and XI I.S 2 as control group. The total number of XI MIPA 3 are 38, the total number of XI I.S 2 are 31. The sample of study is determined using cluster sampling technique. The result of hypothesis was found that the calculated value ($t_{observed}$) was greater than (t_{table}) at 1% and 5 significance level.

C. Conceptual Framework

Vocabulary is a breath of language, without vocabulary proficiency the students automatically cannot obtain the four skills of English such as listening, speaking, reading and writing. Vocabulary is made up of more than just single words.²⁷

²⁶FathanAsy'ari, *The Effectiveness of Talking Stick Method Toward Vocabulary Size at 11TH Graders of MAN Model Palangka Raya*, Skripsi (Palangka Raya: The State Islamic Institute of Palangka Raya, 2016)

²⁷Schimitt, *op.cit*, p.96

Teaching vocabulary is very important task in teaching English. By using good method, way or technique to present and revise new vocabulary item used in text book, students will find words easier to remember and will become more motivated in class so that they can enrich vocabulary mastery.

Vocabulary mastery is competence to know words and meaning. The students are not only hoped to know the words but also their meaning. It is the duty of the teacher to select with what words are suitable to be taught to the students, so the students will learn more easily.

In relation to the vocabulary teaching, the teacher should present the new vocabulary within some interesting learning activities so that they are arouse the students' interest. One way to create an interesting teaching-learning vocabulary activity is by involving the students. It can be the students-centered activity rather than teacher-centered. Moreover, one of the interesting activities that can involve the students and help them in memorizing new vocabulary is games.

Game makes the students learn the target language without feeling but they are forced to learn it. They feel relax and have fun with learning English through games. Furthermore, if game which focus on vocabulary are implemented, they can improve the students' vocabulary mastery.

Chain drawing game is a way which used to stimulate students motivation and interest as games are fun challenging. And chain drawing used in junior high school to stimulate the students in order to master the number of vocabulary.

D. Research hypothesis

Based on the explanation theoretical framework above, the hypothesis of

this research is to know the significant effect of the students' vocabulary mastery who are taught by chain drawing game is than the students' who are taught without chain drawing game.

CHAPTER III

RESEARCH METHODOLOGY

A. The Place and Time of the Study

The research was held at SMP Setia Budi Binjai, which is location on Jl. Perintis Kemerdekaan no 111 A Binjai Sumatera Utara. The first grade students of academic year 2018/2019 was take as the sample of the research. The reason for choosing this school because: 1.) The location which researcher choose has never been teach at there, so the researcher wants to get a new experience. 2.) The researcher wants to give positive contribution to the students in this school especially in mastering vocabulary.

B. The Population and Sample

1. Population

Population was totally of object which researched. Population also can be called universe.²⁸ The population of this research at SMP Setia Budi Binjai was the seventh grade students of 2018/2019 academic year which consist of 120 students. That are class VII-1 consist 21 students, VII-2 consist 22 students, VII-3 consist 21 students, VII-4 consist 23 students, VII-5 consist 23 students.

2. Sample

Sample is part of population of object which research.²⁹ The researcher chooses VII-1 class with 21 student: 25 % sample to observe by using cluster random sampling.

C. The Research Method

The research method used in this study is pre-experimental method by using “one class pre-test and post-test design”, where the researcher did an experiment in a single class only.

Table 3.1

Pre-test and post-test design

²⁸Syahrum and Salim, *Metodo logiPenelitian Kuantitatif*(Bandung: Cipta pustaka Media, 2012) p.113

²⁹*Ibid*, pp. 113-114

Pre-test	Treatment	Post-test
O₁	X	O₂

In collecting the data, this research use the vocabulary test.

1. Pre-test

Pre-Test in the pre-experimental was given before treatment. The teacher would asked the students to answer the multiple choice test

2. Treatment

After giving the pre-test, the students will be given the treatment. In language experiment, a treatment is something done to a person that might have an effect. in order to find out the effect of chain drawing game, the pre-experiment class receives the treatment through chain drawing game.

3. Post test

Post-test is conduct to know the differences score pre-test and post-test. Post-test will be held after all treatments are conducted. This test is used to measure students' achievement after they are given treatments. The result of test will be analyzed statistically by looking for the mean and percentage of the test result. Then, the result is counted by using t-test formula in order to know the significances of the research.

D. The Instrumentation of the Research

The instrument of this research is a vocabulary test. To construct the vocabulary test, the writer follows this procedure :

1. Conceptual Definition

Vocabulary mastery is always related to communication. Vocabulary mastery can be stated as the ability understand words , know the meaning word and use them correctly in sentences.

2. Operational Definition

Vocabulary mastery is the score that the students obtain after answering the vocabulary test which cover preparation. The indicators of the students have mastered the vocabulary were: (1) the students could know the new word, (2) the students would the meaning of the word, (3) the students could make them in correctly in sentence.

3. Specification

The instrument of this research is vocabulary test consisting of 50 (twenty) questions. The test is multiple choices, those question based on some nouns, adjectives, verb, synonym, and antonym.

Table 3.4. The criteria of Test

Criteria	Number	Count
Easy	1,3,13,17,20,27,29,30,31,32,33,34,37,38,42	30%
Modernate	2,6,7,8,9,10,11,12,14,15,16,18,19,21,22,23,24,25,26,28, 33,35,36,39,41,44,45,47,49	60%
Difficult	4,43,46,48,50	10%

Table 3.5. Specification of Number Test

No	Indicator	Sub Indicator	Number Test	Total
1	Nouns	Things, animals, place,etc	2,3,5,20,21,22,23,24,25,26,27, 28,29,30,31,32,33,34,35,36,37,3 8,40,41,42,43,46,47,48,49,50	30
2	Adjectives	Good, clean, soft, thin, etc	1,6,7,13	4
3	Verb	Brring, make,etc	1,8,9,11,15,17	6
4	Synonym	Look = see, hear = listen, etc	10,12,14,18,39,44,45	7
5	Antonym	fat/thin, hot/cool, etc	4,16,19	3
Total				50

4. Calibration

a. Validity

There were characteristics of a good test. One of them was validity. The validity of the test was extent to which measure what is supposed to measure or nothing else. In other words, a test is said to be valid only if it is capable of measuring what it intends to measure.

The content validity of the test must show that a test represent all the

materials and objectives to be obtained by the students. To count validity, the writers use this formula:

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

Where:

r_{xy} = validity coefficient of the test

x = sum of score of each test number

y = sum of total score

N = number of students

x^2 = quadrate sum of score of each test number

y^2 = quadrate sum of total score

b. Reliability

Reliability was the stability of the test score. The test can said reliable if it can show stable outcome. It means, if the test was repeated on different occasions or by different people, the outcomes of the test should not fluctuate too much, the

test is unreliable.

To get reliability of the test, the writer used Spearman-Brown formula as follow:

$$r_{11} = \frac{2r_{\frac{11}{22}}}{\left(1+r_{\frac{11}{22}}\right)}$$

r = reliability of the test

$r_{\frac{11}{22}}$ = r_{xy} as coefficient correlation

The criteria for the reliability coefficient as the following:

0,800 – 1,000 = High

0,600 – 0,800 = Sufficient

0,400 – 0,600 = Rather Low

0,200 – 0,400 = Low

0,000 – 0,200 = Very Low

E. Data Analysis

Data analysis is the last step in the procedure of experiment, in this case, processing the data. The data processing is the steps to know the result of both the experimental class and control class and also their differences.

To find out the differences of students' scores in using chain drawing game in teaching vocabulary, the writer used t-test

The data analysis by using t-test formula is:

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

In which:

Ma : the mean of post- test

Mb : the mean of pre- test

Da² : the standard of deviation of post- test

Db² : the standard of deviation of pre- test

Na : the total numbers of pre- test

Nb : the total numbers of pot- test³⁰

³⁰ Suharsimi Arikunto, *Prosedur Penelitian*, Jakarta : PT. Rineka Cipta, 2010, p.352.

CHAPTER IV
RESEARCH FINDINGS AND DISCUSSIONS

A. Research Findings

1. Description of the Data

After analyzing the data, the result show that the pre-test and post-test vocabulary score of the students' who were taught by chain drawing game can be described as follows :

Table 4.1 Research Result Data

Statistic Source	Chain Drawing Game	
	Pre- test	Post- test
N	21	21
\bar{X}	62.85	83.33
S	7.67	5.08

a. The Students' Vocabulary Scores of the Pre- test

The result of the descriptive statistic show that the lowest score of the vocabulary in the pre- test was 50 and the highest score was 75. The mean

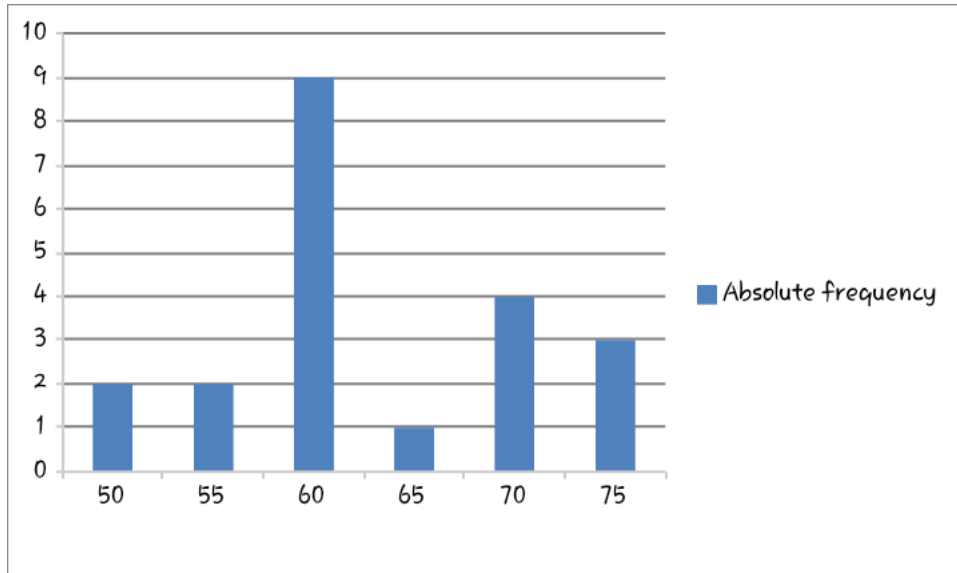
of pre- test was 62.85, the standard deviation was 7.67 (see Appendix)

Table 4.2 The Frequency of Student's Score in Pre- test

No	Score	Absolute Frequency	Relative Frequency
1	50	2	9.5
2	55	2	9.5
3	60	9	42.9
4	65	1	4.76
5	70	4	19.02
6	75	3	14.28
Total		21	100

The score frequency distribution histogram of student's vocabulary score in pre- test can be showed in the following figure:

Figure I. The Frequency Distribution of the Pre- test



b. The Students' Vocabulary Scores of the Post- test

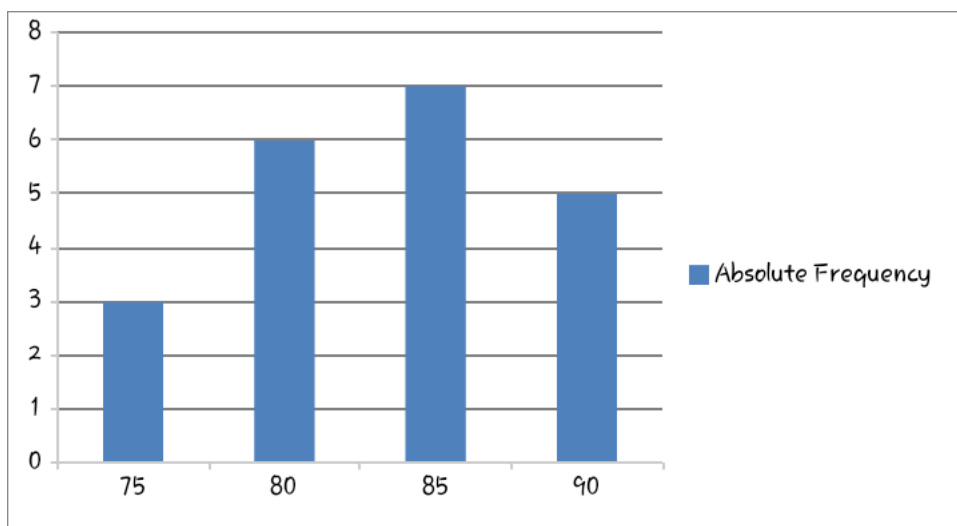
The result of the descriptive statistic show that the lowest score of the vocabulary in the pre- test was 75 and the highest score was 90. The mean of post- test was 83.33, the standard deviation was 5.08 (see Appendix)

Table 4.3 The Frequency Distribution of Students' Score in Post- test

No	Score	Absolute Frequency	Relative Frequency
1	75	3	14.3
2	80	6	28.57
3	85	7	33.33
4	90	5	23.80
Total		21	100

The score frequency distribution histogram of student's vocabulary score in post-test be showed in the following figure:

Figure II. The Frequency Distribution of the Post-test



2. Analysis Requirement Testing

a. Normality Testing

Normality testing used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed. (See Appendix)

Table 4.4 Normality Testing

No	Data	N	α	$L_{observed}$	L_{table}	Conclusion
1	Pre-test	21	0.05	0.027	0.19	Normal
2	Post-test	21	0.05	0.09	0.19	Normal

Based on the table above, it be concluded that all of f data distribution was normal, because $L_o < L_t$.

b. Homogeneity Testing

Table 4.5 Homogenous Testing

Data	$F_{observed}$	F_{table}	Conclusion
Pre-test	2.25	2.29	Homogenous
Post-test			

So, of $F_{observed} < F_{table}$, it can be concluded that the variant is homogenous.

3. Hypot hesis Testing

The result of hypot hesis of this study can be shown from the table below.

Table 4.6 T- Test Result of Pre- test and Post Test

Data	T_{observed}	T_{table}	Conclusion
Pre- test	46.9	2.02	There is significant effect of chain drawing game on the student s' vocabulary mastery
Post- test			

B. Discussion

The result of the research shows that there is a significant effect in

students' vocabulary mastery who are taught by using chain drawing game. Chain drawing game has some advantages: the first is the students' interest following the teaching learning activity, because chain drawing game is fun activity. Students' interest in follow learning proven by curiosity know students' to the material being taught. Interest is more flavor like it and a sense of attraction on something or activity, without there is order ". The students' who have interest to subject certain tend for give attention more big to subject that. Interest someone caused by some case, namely an interest or feeling of pleasure, attention and need.

The second is suitable for Junior High School level, because chain drawing game is activities conducted in groups so that need cooperation a group. Junior High School students' really like to socialize or make friend and make group friend. According to the social development of Junior High School students' awareness will silence encourage Junior High School students' for hang out. Junior High School is called a social period because throughout the Junior High School social relations will be more clearly visible and more dominant.

The third is make student active and creative, because in game chain drawing students existing ideas in his mind in picture on a paper. Then the student move give paper that has been drawn to next student in one group. Next students creating new ideas what else would draw it paper friends before. Therefore, chain drawing game make the students active and creative.

This results support by Purwanto research, conducted a research about "Improving the students mastery of English vocabulary by using chain drawing game". The results of the test shows that the students' score in cycle I is 72.5. in

cycle II, the result of test is 76.55 and the result of test in cycle III is 80.52. It means that chain drawing game can improve the students' mastery of English vocabulary.

CHAPTER V

CONCLUSION, IMPLICATION AND SUGGESTION

A. Conclusion

After carrying pre-experimental and according to the result of students' post-test, the researcher found that the students' post-test got higher result than the students' pre-test who are taught chain drawing game. It can be proven that in the gained score of post-test is higher than gained score of pre-test.

Based on the data, it can be seen that there is a significant difference between the pre-test and post-test. The researcher compared t_{count} and t_{table} to know whether using chain drawing game is effective to students' vocabulary mastery.

The students' vocabulary mastery score of post-test is higher with the mean 83.33 than the pre-test with the mean 62.85. Chain drawing game is significant to be used in affecting the students' vocabulary mastery score. The result of $t_{observed}$ is 46.9 and t_{table} is 2.02 ($t_{observed} > t_{table}$, $46.9 > 2.02$). It means that

H_0 is rejected and H_a is accepted. There is a significant effect of chain drawing game on the students' vocabulary mastery.

B. Implication

Implications are drawn from the research finding. The research came with a finding that there is a significant effect on the students' vocabulary mastery between pre-test and post-test that the students are taught by using chain drawing game. Moreover, research implies that the use of chain drawing game is needed in teaching English especially English vocabulary.

Students are motivated and relaxed in learning vocabulary when they are taught by using chain drawing game. Therefore, implies that the use of chain drawing game can keep students' interest and help them to master the vocabulary.

In summary, the use of chain drawing game during the research can affect the students' vocabulary mastery. Therefore, the application of chain drawing game needs to be applied continuously in teaching vocabulary. It is because the use of chain drawing game can be affective learning model to help the students' enthusiastic increased so that the standard competence of learning process can be achieved.

C. Suggestion

Based on the conclusion above, the researcher gives some recommendations as follows: Firstly, English teachers are recommended to use chain drawing game in their teaching learning process in order to affect the students' vocabulary mastery. Secondly, The researchers who are interested in doing a research related to this study should try to apply chain drawing game on different level of learners through different genre to prove the effect of chain drawing game on the students' vocabulary mastery. Finally, the researcher considers that this study still need validity from the next researcher that has the similar topic with this study.

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Appendix II

Pre-test

Choose the correct answer a, b, c, or d !

1. After eating or drinking in the restaurant, you give the bill to the...
 - a. Waiter
 - b. Cashier
 - c. Waitress
 - d. Manager
2. We often watch in the evening.
 - a. Newspaper
 - b. Radio
 - c. Magazine
 - d. Television
3. I often listen some news from the....
 - a. Newspaper
 - b. Radio
 - c. Magazine
 - d. Televison
4. My mother usually slices some meat with a....

- a. Stick
b. Fork
- c. Knife
d. Spoon
5. To protect your head, you need....
- a. Sandals
b. Clothes
- c. Hat
d. Shoes
6. The tool of music that we should use stick and we should blow is the
- a. Guitar
b. Piano
- c. Drum
d. Keyboard
7. Ali: A pilot flies by.....
- a. Boat
b. Train
- c. Plane
d. Bus
8. A chef cooks the rice by
- a. Oven
b. Mixer
- c. Rice cooker
d. Dispenser
9. Coffee, syrup, tea, and milk. They are called....
- a. Vegetables
b. Food
- c. Fruits
d. Drinks
10. Pizza, noodle, sandwich, and burger. They are called...
- a. Vegetables
b. Food
- c. Fruits
d. Drinks



11. The fruits on the middle line are....
- a. Apple, orange, melon
b. Mango, banana, apple
- c. Blueberry, apple, melon
d. Banana, blueberry, mango
12. Onion, spinach, potato, and tomato. They are called...

- a. Vegetables
b. Food
- c. Fruits
d. Drinks
13. We need.... to write a letter.
- a. Glue and pen
b. Stamp and ink
- c. Book and Coin
d. Pen and book
14. Students have to wear uniform to go to....
- a. School
b. Mall
- c. Bed
d. Party
15. What do you use to find a way.....
- a. Car
b. Bicycle
- c. Map
d. Shoes
16. What do you wear to go to bed.....
- a. Dress
b. Jacket
- c. Uniform
d. Pajamas
17. Ant, monkey, lion, tiger, rabbit. They are called
- a. Fruits
b. Places
- c. Animals
d. Vegetables
18. In the following include of animals, except....
- a. Cat
b. Zebra
- c. Spider
d. Stove
19. The synonym of little is.....
- a. Huge
b. Big
- c. Small
d. Fast
20. Where do people go to send the letter...
- a. Beach
b. Post office
- c. Zoo
d. Station

Appendix III

Post-test

Choose the correct answer a, b, c, or d !

1. After eating or drinking in the restaurant, you give the bill to the...
 - a. Waiter
 - b. Cashier
 - c. Waitress
 - d. Manager
2. We often watch in the evening.
 - c. Newspaper
 - d. Radio
 - c. Magazine
 - d. Television
3. I often listen some news from the....
 - c. Newspaper
 - d. Radio
 - c. Magazine
 - d. Television
4. My mother usually slices some meat with a....
 - c. Stick
 - d. Fork
 - c. Knife
 - d. Spoon
5. To protect your head, you need....

- c. Sandals
d. Clothes
- c. Hat
d. Shoes
6. The tool of music that we should use stick and we should blow is the
- c. Guitar
d. Piano
- c. Drum
d. Keyboard
7. Ali: A pilot flies by.....
- c. Boat
d. Train
- c. Plane
d. Bus
8. A chef cooks the rice by
- c. Oven
d. Mixer
- c. Rice cooker
d. Dispenser
9. Coffee, syrup, tea, and milk. They are called....
- c. Vegetables
d. Food
- c. Fruits
d. Drinks
10. Pizza, noodle, sandwich, and burger. They are called...
- c. Vegetables
d. Food
- c. Fruits
d. Drinks



11. The fruits on the middle line are....
- c. Apple, orange, melon
d. Mango, banana, apple
- c. Blueberry, apple, melon
d. Banana, blueberry, mango
12. Onion, spinach, potato, and tomato. They are called...
- c. Vegetables
d. Food
- c. Fruits
d. Drinks
13. We need.... to write a letter.

- c. Glue and pen
d. Stamp and ink
- c. Book and Coin
d. Pen and book
14. Students have to wear uniform to go to....
- c. School
d. Mall
- c. Bed
d. Party
15. What do you use to find a way.....
- c. Car
d. Bicycle
- c. Map
d. Shoes
16. What do you wear to go to bed.....
- c. Dress
d. Jacket
- c. Uniform
d. Pajamas
17. Ant, monkey, lion, tiger, rabbit. They are called
- c. Fruits
d. Places
- c. Animals
d. Vegetables
18. In the following include of animals, except....
- c. Cat
d. Zebra
- c. Spider
d. Stove
19. The synonym of little is.....
- c. Huge
d. Big
- c. Small
d. Fast
20. Where do people go to send the letter...
- c. Beach
d. Post office
- c. Zoo
d. Station

Appendix IV

Answer key of pre-test

1. B

2. D

3. B

4. C

5. C

6. C

7. C

8. C

9. D

10. B

11. D

12. A

13. D

14. A

15. C

16. D

17. C

18. D

19. C

20. B

Appendix V

Answer key of post-test

1. B

2. D

3. B

4. C

5. C

6. C

7. C

8. C

9. D

- 10. B
- 11. D
- 12. A
- 13. D
- 14. A
- 15. C
- 16. D
- 17. C
- 18. D
- 19. C
- 20. B

Appendix VI

STUDENTS' INITIAL AND REAL NAME
OF PRE- EXPERIMENTAL CLASS (VII- 1)

No.	Initial Name	Real Name
-----	--------------	-----------

1	AB	Absah Margareta
2	AN	Addrun Nafis
3	ATR	Alvin Tri Ramadhan
4	ADP	Aprilia Dara Puspita
5	AS	Asril Syahpuutra
6	BS	Bayu Sanjaya
7	CA	Chandra Ardiansyah
8	FS	Fita Sarri
9	MRPN	M. Rizki Parera Nst
10	MNH	M. Nabil Harianto
11	MH	M. Hafis
12	MRP	M. Reza Pratama
13	NA	Nazwa Anzalia
14	NNH	Nifa Nur Hazlin
15	R	Ramadhani
16	SN	Silvia Nirmala
17	WR	Wahyu Ramadhan
18	WA	Weni Anggreni
19	WH	Weldi Hasan
20	YA	Yuli Apriani
21	Z	Zainuddin

Appendix VII

The Score of Pre Test

No.	Students' Initial	Pre Test
1	AM	75
2	AN	75
3	ATR	60
4	ADP	70
5	AS	60
6	BS	60
7	CA	70
8	FS	60
9	MRPN	65
10	MNH	60
11	MH	55
12	MRP	60
13	NA	70
14	NNH	70
15	S	60

16	RN	55
17	WR	50
18	WN	75
19	WH	50
20	YA	60
21	Z	60
Total		$\Sigma = 1320$
Mean		62.85

Appendix VIII

The Score of Post-test

No.	Students' Initial	Post Test
1	AM	85
2	AN	80
3	ATR	75
4	ADP	85

5	AS	80
6	BS	75
7	CA	90
8	FS	80
9	MRPN	85
10	MNH	80
11	MH	85
12	MRP	80
13	NA	90
14	NNH	85
15	S	80
16	RN	75
17	WR	90
18	WN	90
19	WH	85
20	YA	90
21	Z	85
Total		$\Sigma = 1750$
Mean		83.33

Appendix IX

PERCENTAGE POINTS OF DISTRIBUTION

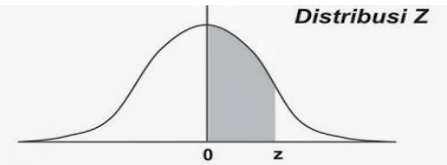
DF	A P	0.80 0.20	0.90 0.10	0.95 0.05	0.98 0.02	0.99 0.01	0.995 0.005	0.998 0.002	0.999 0.001
1		3.078	6.314	12.706	31.820	63.657	127.321	318.309	636.619
2		1.886	2.920	4.303	6.965	9.925	14.089	22.327	31.599
3		1.638	2.353	3.182	4.541	5.841	7.453	10.215	12.924
4		1.533	2.132	2.776	3.747	4.604	5.598	7.173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

23		1.319	1.714	2.069	2.500	2.807	3.104	3.485	3.768
24		1.318	1.711	2.064	2.492	2.797	3.090	3.467	3.745
25		1.316	1.708	2.060	2.485	2.787	3.078	3.450	3.725
26		1.315	1.706	2.056	2.479	2.779	3.067	3.435	3.707
27		1.314	1.703	2.052	2.473	2.771	3.057	3.421	3.690
28		1.313	1.701	2.048	2.467	2.763	3.047	3.408	3.674
29		1.311	1.699	2.045	2.462	2.756	3.038	3.396	3.659
30		1.310	1.697	2.042	2.457	2.750	3.030	3.385	3.646
31		1.309	1.695	2.040	2.453	2.744	3.022	3.375	3.633
32		1.309	1.694	2.037	2.449	2.738	3.015	3.365	3.622
33		1.308	1.692	2.035	2.445	2.733	3.008	3.356	3.611
34		1.307	1.691	2.032	2.441	2.728	3.002	3.348	3.601
35		1.306	1.690	2.030	2.438	2.724	2.996	3.340	3.591
36		1.306	1.688	2.028	2.434	2.719	2.991	3.333	3.582
37		1.305	1.687	2.026	2.431	2.715	2.985	3.326	3.574
38		1.304	1.686	2.024	2.429	2.712	2.980	3.319	3.566
39		1.304	1.685	2.023	2.426	2.708	2.976	3.313	3.558
40		1.303	1.684	2.021	2.423	2.704	2.971	3.307	3.551
42		1.302	1.682	2.018	2.418	2.698	2.963	3.296	3.538
44		1.301	1.680	2.015	2.414	2.692	2.956	3.286	3.526
46		1.300	1.679	2.013	2.410	2.687	2.949	3.277	3.515
48		1.299	1.677	2.011	2.407	2.682	2.943	3.269	3.505
50		1.299	1.676	2.009	2.403	2.678	2.937	3.261	3.496
60		1.296	1.671	2.000	2.390	2.660	2.915	3.232	3.460
70		1.294	1.667	1.994	2.381	2.648	2.899	3.211	3.435
80		1.292	1.664	1.990	2.374	2.639	2.887	3.195	3.416
90		1.291	1.662	1.987	2.369	2.632	2.878	3.183	3.402
100		1.290	1.660	1.984	2.364	2.626	2.871	3.174	3.391
120		1.289	1.658	1.980	2.358	2.617	2.860	3.160	3.373
150		1.287	1.655	1.976	2.351	2.609	2.849	3.145	3.357
200		1.286	1.652	1.972	2.345	2.601	2.839	3.131	3.340
300		1.284	1.650	1.968	2.339	2.592	2.828	3.118	3.323
500		1.283	1.648	1.965	2.334	2.586	2.820	3.107	3.310
∞		1.282	1.645	1.960	2.326	2.576	2.807	3.090	3.291

Appendix X

TABLE DSTRIBUTION NORMAL BAKU 0- Z

**Kumulatif sebaran frekuensi normal
(Area di bawah kurva normal baku dari 0 sampai z)**



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
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998
3.5	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998
3.6	0.4998	0.4998	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.7	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.8	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.9	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000

Dipergunakan untuk kepentingan Praktikum dan Kuliah Statistika Agrotek cit. Ade

Source : <http://jam-statistik.blogspot.co.id/2014/04/cara-menentukan-nilai-alpha-dengan.html>

Appendix XI

THE CRITICAL VALUE LILIEFORS TEST

Ukuran Sampel	Taraf Nyata (α)				
	0,01	0,05	0,10	0,15	0,20
n = 4	0,417	0,381	0,352	0,319	0,300
5	0,405	0,337	0,315	0,299	0,285
6	0,364	0,319	0,294	0,277	0,265
7	0,348	0,300	0,276	0,258	0,247
8	0,331	0,285	0,261	0,244	0,233
9	0,311	0,271	0,249	0,233	0,223
10	0,294	0,258	0,239	0,222	0,215
11	0,284	0,249	0,230	0,217	0,206
12	0,275	0,242	0,223	0,212	0,199
13	0,268	0,234	0,214	0,202	0,190
14	0,261	0,227	0,207	0,194	0,183
15	0,257	0,220	0,201	0,187	0,177
16	0,250	0,213	0,195	0,182	0,173
17	0,245	0,206	0,189	0,177	0,169
18	0,239	0,200	0,184	0,173	0,166
19	0,235	0,195	0,179	0,169	0,163
20	0,231	0,190	0,174	0,166	0,160
25	0,200	0,173	0,158	0,147	0,142
30	0,187	0,161	0,144	0,136	0,131
n > 30	$\frac{1,031}{\sqrt{n}}$	$\frac{0,886}{\sqrt{n}}$	$\frac{0,805}{\sqrt{n}}$	$\frac{0,768}{\sqrt{n}}$	$\frac{0,736}{\sqrt{n}}$

Appendix XII

Frequency Distribution of Pre Test

NO	Xi	Fi	FiXi	X_i^2	FiX_i^2
1	50	2	100	2500	5000
2	55	2	110	3025	6050
3	60	9	540	3600	32400
4	65	1	65	4225	4225
5	70	4	280	4900	19600
6	75	3	225	5625	16875
Total		21	1320	23875	84150

Based on the data above, the result of $F_i X_i^2$ is 84150 and $F_i X_i$ is 1320.

Then the following is the calculation of mean, variant and standard deviation.

a. Mean

$$\bar{x} = \frac{\sum F_i X_i}{\sum F_i}$$

Where:

\bar{x} = Mean of variable x

$\sum F_i X_i$ = Total number of score

$\sum F_i$ = Number of sample

So,

$$\begin{aligned}\bar{x} &= \frac{\sum F_i X_i}{\sum F_i} \\ &= \frac{1320}{21}\end{aligned}$$

$$= 62.85$$

b. Variant

Where:

$$S^2 = \text{Variant}$$

$$N = \text{Number of sample}$$

So,

$$\begin{aligned} S^2 &= \frac{n\sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)} \\ &= \frac{21 \times 84150 - (1320)^2}{21(21-1)} \\ &= \frac{1767150 - 1742400}{21(20)} \\ &= \frac{24750}{420} \\ &= 58.928 \end{aligned}$$

c. Standard Deviation

$$\begin{aligned} S &= \sqrt{S^2} \\ &= \sqrt{58.928} \\ &= 7.67 \end{aligned}$$

Appendix XIII

Frequency Distribution of the Post-test

NO	Xi	Fi	FiXi	Xi ²	FiXi ²
1	75	3	225	5625	16875
2	80	6	480	6400	38400
3	85	7	595	7225	50575
4	90	5	450	8100	40500
Total		21	1750	42575	146350

Based on the data above, the result of $F_i X_i^2$ is 146350 and $F_i X_i$ is 1750.

Then the following is the calculation of mean, variant and standard deviation.

a. Mean

$$\bar{x} = \frac{\sum F_i X_i}{\sum F_i}$$

Where:

\bar{x} = Mean of variable x

$\sum F_i X_i$ = Total number of score

$\sum F_i$ = Number of sample

So,

$$\bar{x} = \frac{\sum F_i X_i}{\sum F_i}$$

$$= \frac{1750}{21}$$

$$= 83.33$$

b. Variant

Where:

$$S^2 = \text{Variant}$$

$$N = \text{Number of sample}$$

So,

$$S^2 = \frac{n \sum F_i X_i^2 - (\sum F_i X_i)^2}{n(n-1)}$$

$$= \frac{21 \times 146350 - (1750)^2}{21(21-1)}$$

$$= \frac{3073350 - 3062500}{21(20)}$$

$$= \frac{10850}{420}$$

$$= 25.83$$

c. Standard Deviation

$$S = \sqrt{S^2}$$

$$= \sqrt{25.83}$$

$$= 5.08$$

Appendix XIV

Calculation Normality Testing of Pre Test

No	Score	Zi	F(Zi)	S(Zi)	F(Zi)-S(Zi)
1	50	-1.67	0.046	0.09	-0.044
2	50	-1.67	0.046	0.09	-0.044
3	55	-1.02	0.153	0.19	-0.037
4	55	-1.02	0.153	0.19	-0.037
5	60	-0.37	0.354	0.61	-0.256
6	60	-0.37	0.354	0.61	-0.256
7	60	-0.37	0.354	0.61	-0.256
8	60	-0.37	0.354	0.61	-0.256
9	60	-0.37	0.354	0.61	-0.256
10	60	-0.37	0.354	0.61	-0.256
11	60	-0.37	0.354	0.61	-0.256
12	60	-0.37	0.354	0.61	-0.256
13	60	-0.37	0.354	0.61	-0.256
14	65	0.28	0.609	0.66	-0.051
15	70	0.93	0.823	0.85	-0.027
16	70	0.93	0.823	0.85	-0.027
17	70	0.93	0.823	0.85	-0.027

18	70	0.93	0.823	0.85	-0.027
19	75	1.58	0.943	1	-0.057
20	75	1.58	0.943	1	-0.057
21	75	1.58	0.943	1	-0.057
Total	1320	L₀ = -0.027			
Mean	62.85	L_t = 0.19			

a. Finding Z score

$$\text{Formula: } Z_i = \frac{X_i - \bar{X}}{s}$$

$$Z_{i1} = \frac{50 - 62.85}{7.67} = -1.67$$

$$Z_{i2} = \frac{55 - 62.85}{7.67} = -1.02$$

$$Z_{i3} = \frac{60 - 62.85}{7.67} = -0.37$$

$$Z_{i4} = \frac{65 - 62.85}{7.67} = 0.28$$

$$Z_{i5} = \frac{70 - 62.85}{7.67} = 0.93$$

$$Z_{i6} = \frac{75 - 62.85}{7.67} = 1.58$$

b. Finding S(Z_i)

$$S(Z_i) = \frac{F_{\text{Kum}}}{N}$$

$$\frac{2}{21} = 0.09$$

$$\frac{4}{21} = 0.19$$

$$\frac{13}{21} = 0.61$$

$$\frac{14}{21} = 0.66$$

$$\frac{18}{21} = 0.85$$

$$\frac{21}{21} = 1$$

From the data above, it can be seen that the Liliefors Observation or $L_o = 0.027$ with $n = 21$ and at real level $(\alpha) = 0.05$ from the list critical value of Liliefors table, $L_t = 0.19$. it can be concluded that the data distribution was normal, because $L_o(0.186) < L_t (0.19)$

Appendix XV

Calculation Normality Testing of post-test

No	Score	Zi	F(Zi)	S(Zi)	F(Zi) - S(Zi)
1	75	-1.63	0.050	0.14	-0.09
2	75	-1.63	0.050	0.14	-0.09
3	75	-1.63	0.050	0.14	-0.09

4	80	-0.65	0.255	0.42	-0.165
5	80	-0.65	0.255	0.42	-0.165
6	80	-0.65	0.255	0.42	-0.165
7	80	-0.65	0.255	0.42	-0.165
8	80	-0.65	0.255	0.42	-0.165
9	80	-0.65	0.255	0.42	-0.165
10	85	0.32	0.628	0.76	-0.132
11	85	0.32	0.628	0.76	-0.132
12	85	0.32	0.628	0.76	-0.132
13	85	0.32	0.628	0.76	-0.132
14	85	0.32	0.628	0.76	-0.132
15	85	0.32	0.628	0.76	-0.132
16	85	0.32	0.628	0.76	-0.132
17	90	1.31	0.905	1	-0.095
18	90	1.31	0.905	1	-0.095
19	90	1.31	0.905	1	-0.095
20	90	1.31	0.905	1	-0.095
21	90	1.31	0.905	1	-0.095
Total	1750	Lo=0.09			
Mean	83.33	Lt = 0.19			

a. Finding Z score

$$\text{Formula: } Z_i = \frac{X_i - \bar{X}}{s}$$

$$Z_i = \frac{75 - 83.33}{5.08} = -1.63$$

$$Z_{i2} = \frac{80 - 83.33}{5.08} = -0.65$$

$$Z_{i3} = \frac{85 - 83.33}{5.08} = 0.32$$

$$Z_{i4} = \frac{90 - 83.33}{5.08} = 1.31$$

b. Finding S(Z_i)

$$S(Z_i) = \frac{F_{Kum}}{N}$$

$$\frac{3}{21} = 0.14$$

$$\frac{9}{21} = 0.42$$

$$\frac{16}{21} = 0.76$$

$$\frac{21}{21} = 1$$

From the data above, it can be seen that the Liliefors Observation or $L_o = 0.09$ with $n = 21$ and at real level $(\alpha) = 0.05$ from the list critical value of Liliefors table, $L_t = 0.19$. it can be concluded that the data distribution was normal, because $L_o(0.09) < L_t (0.19)$

Appendix XVI

The result of the Validity of the Test

No	$t_{observed}$	t_{table}	Status	No	$t_{observed}$	t_{table}	Status
1	1.180	0.423	Valid	26	1.165	0.423	Valid
2	0.861	0.423	Valid	27	2.676	0.423	Valid
3	0.996	0.423	Valid	28	1.620	0.423	Valid
4	0.784	0.423	Valid	29	2.592	0.423	Valid
5	0.785	0.423	Valid	30	1.705	0.423	Valid
6	0.755	0.423	Valid	31	1.197	0.423	Valid
7	1.448	0.423	Valid	32	1.823	0.423	Valid
8	0.861	0.423	Valid	33	0.802	0.423	Valid
9	0.936	0.423	Valid	34	0.743	0.423	Valid
10	1.086	0.423	Valid	35	0.845	0.423	Valid
11	1.332	0.423	Valid	36	1.327	0.423	Valid
12	1.207	0.423	Valid	37	1.126	0.423	Valid

13	1.026	0.423	Valid	38	1.028	0.423	Valid
14	0.869	0.423	Valid	39	0.876	0.423	Valid
15	1.273	0.423	Valid	40	0.621	0.423	Valid
16	1.508	0.423	Valid	41	0.949	0.423	Valid
17	0.776	0.423	Valid	42	1.026	0.423	Valid
18	0.996	0.423	Valid	43	0.129	0.423	Invalid
19	0.654	0.423	Valid	44	1.087	0.423	Valid
20	1.360	0.423	Valid	45	0.845	0.423	Valid
21	0.920	0.423	Valid	46	0.320	0.423	Invalid
22	0.993	0.423	Valid	47	0.931	0.423	Valid
23	1.429	0.423	Valid	48	0.268	0.423	Invalid
24	0.904	0.423	Valid	49	0.996	0.423	Valid
25	1.149	0.423	Valid	50	0	0.423	Invalid

To obtain the validity test, I applied 'Pearson Product Moment', with is formula as following :

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

The validity testing for item number one was counted as following :

$$\begin{aligned}
r_{xy} &= \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{NX^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}} \\
&= \frac{22 \times 490 - (15)(663)}{\sqrt{\{22 \times 15 - (15)^2\}\{22 \times 20197 - (663)^2\}}} \\
&= \frac{10780 - 9945}{\sqrt{\{105\}\{4765\}}} \\
&= \frac{835}{\sqrt{500325}} \\
&= \frac{835}{707.336} \\
&= 1.180
\end{aligned}$$

Calculation of test item validity was done by using software Ms.Excel.

$r_{observed}$ consulted to r_{table} with significant level 0.05. The validity of each item was decided by comparing the result with r_{table} . If $r_{observed}$ is higher than r_{table} , the item is valid. From the data above, df is 20 ($N-2 = 22-2$), r_{table} with significant level 5 % (0.05) = 0,423. Number one is $r_{observed} > . r_{table}$ ($1.180 > 0.423$). Therefore, test item number one is **valid**. With the same formula, calculation for each test item validity was presented.

Appendix XVII

The result of the Reliability of the Test

No	$r_{observed}$	Criteria	No	$r_{observed}$	Criteria
1	1.082	High	26	1.076	High
2	1.585	High	27	1.455	High
3	0.997	High	28	1.236	High
4	0.878	High	29	1.443	High

5	0.879	High	30	1.260	High
6	0.860	High	31	1.089	High
7	1.183	High	32	1.291	High
8	0.601	Sufficient	33	0.890	High
9	0.966	High	34	0.852	High
10	1.041	High	35	0.915	High
11	1.142	High	36	1.140	High
12	1.093	High	37	1.059	High
13	1.012	High	38	1.013	High
14	0.829	High	39	0.933	High
15	1.120	High	40	0.766	High
16	0.202	High	41	0.973	High
17	0.873	High	42	1.012	High
18	0.997	High	43	0.228	Low
19	0.790	Sufficient	44	1.041	High
20	1.152	High	45	0.915	High
21	1.477	High	46	0.484	Rather Low
22	0.958	High	47	0.964	High

23	1.176	High	48	0.422	Rather Low
24	0.949	High	49	0.997	High
25	1.069	High	50	0	Very Low

Then the Spearman-Brown formula is implemented to measure the reliability of the test :

$$r = 0.848$$

$$\begin{aligned}
 r_{11} &= \frac{2r_{\frac{11}{22}}}{\left(1+r_{\frac{11}{22}}\right)} \\
 &= \frac{2,180}{(1+1,180)} \\
 &= \frac{2,36}{(2,180)} \\
 &= 1,082
 \end{aligned}$$

The calculation shows that the reliability of the test is 0,917. Based on the criteria of reliability coefficient, the test can be regarded as reliable. 0,917 placed between 0,800-1,000. Therefore, the reliability of the test is **high**.

Appendix XVIII

The Calculation of Homogeneity Testing

$$\begin{aligned}F_H &= \frac{S^2_1}{S^2_2} \\ &= \frac{58.295}{25.83} \\ &= 2.25\end{aligned}$$

From data above the coefficient of $F_{\text{observed}} = 2,25$ is compared with F_{table} , where F_{table} is determined at real level (α) = 0.05 and the same numerator dk = $n - 1 = 21 - 1 = 20$ that was exist dk numerator 20. Then F_{observed} can be calculated

$$F_{0.05(20,20)} = 2.29$$

So, of $F_{\text{observed}} < F_{\text{table}}$, it can be concluded that the variant is homogenous.

Appendix XIX

Hypothesis Testing

$$\begin{aligned}t &= \frac{Ma - Mb}{\sqrt{\left(\frac{da^2 + db^2}{Na + Nb - 2}\right)\left(\frac{1}{Na} + \frac{1}{Nb}\right)}} \\&= \frac{83.33 - 62.85}{\sqrt{\left(\frac{5.08^2 + 7.67^2}{21 + 21 - 2}\right)\left(\frac{1}{21} + \frac{1}{21}\right)}} \\&= \frac{20.48}{\sqrt{\left(\frac{25.8064 + 58.8289}{40}\right)(0.09)}} \\&= \frac{20.48}{\sqrt{\left(\frac{84.6353}{40}\right)(0.09)}} \\&= \frac{20.48}{\sqrt{(2.11)(0.09)}} \\&= \frac{20.48}{\sqrt{0.19}} \\&= 46.9\end{aligned}$$

After the scores were calculated, it was found that in this study the t_{observed} is higher than the t_{table} . It can be seen as follow: $t_{\text{observed}} > t_{\text{table}}(\alpha = 0.05)$ with df 20
 $46.9 > 2.08$

From the result above, it shows that the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected. It means that the vocabulary by used chain drawing strategy affect student's vocabulary mastery.

Appendix XX

DOCUMENTATIONS



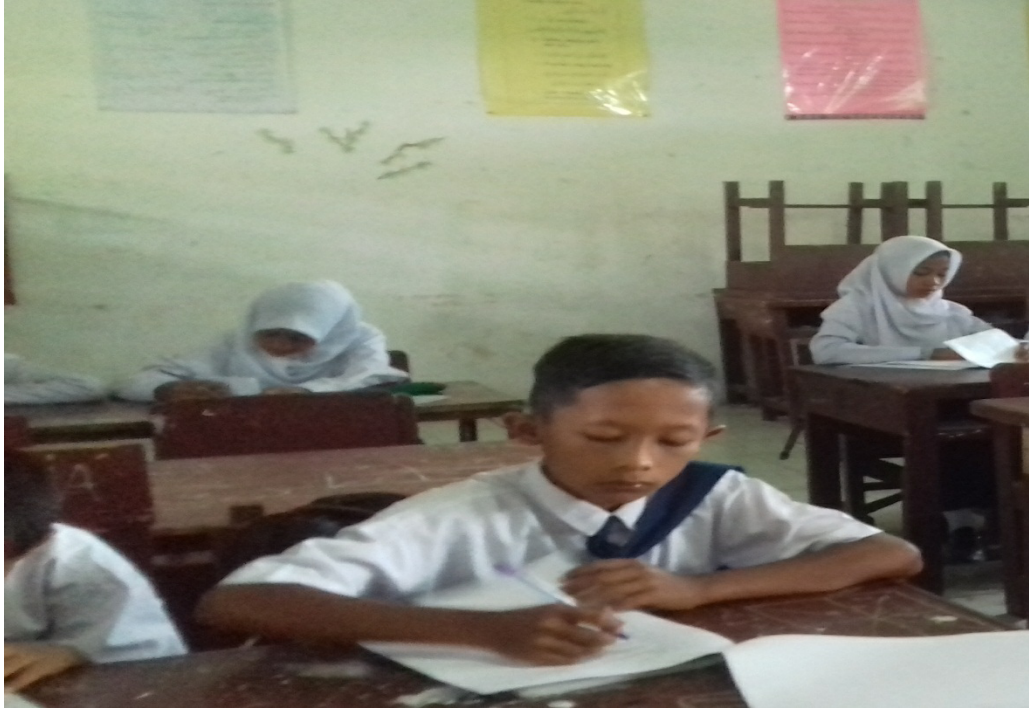
The researcher give the treatment in experimental class



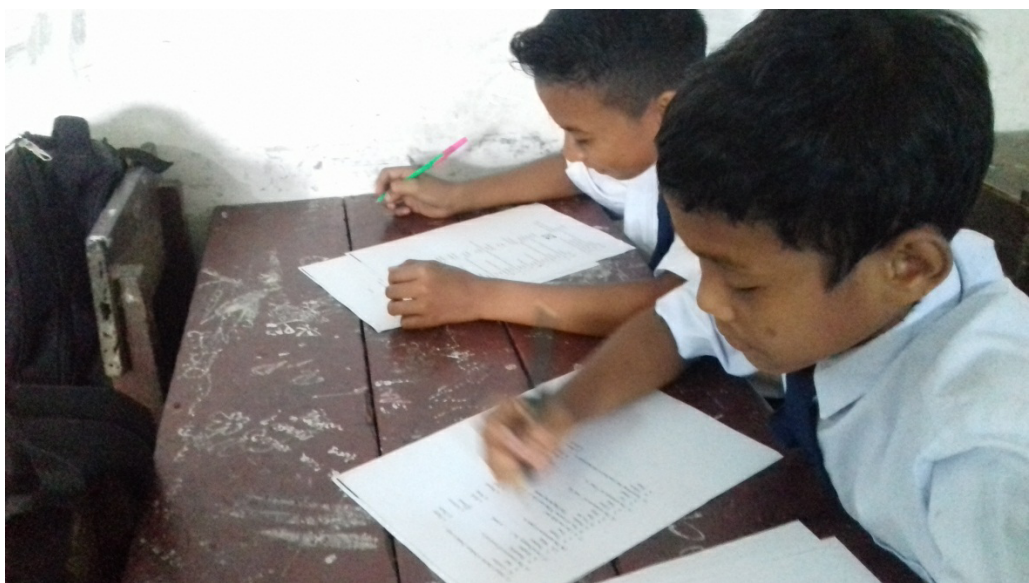
The students' doing the treatment of chain drawing



The teacher give the pre-test



The students' doing the pre-test



The students' doing the post-test