THE EFFECT OF SEMANTIC MAPPING ON STUDENT'S READING COMPREHENSION AT GRADE VIII SMPN 1ANGKOLA MUARATAIS

A THESIS

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

Written By :

ISRA SOLIYAH SIREGAR
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ENGLISH EDUCATION DEPARTMENT

TARBIYAH AND TEACHER TRAINING FACULTY
STATE INSTITUTE FOR ISLAMIC STUDIES
PADANGSIDIMPUAN
2021

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Padangsidimpuan, Juni 2021

To:
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Assalamu 'alaikumwr.wb.

After reading, studying and giving advice for necessary revision on the thesis belongs to **Isra Soliyah Siregar**, entitled **"The Effect of Semantic Mapping on Students Reading Comprehension at Grade VIII SMP N Angkola Muaratais"**. We assumed that the thesis has been acceptable to complete the assignments and fulfill the requirements for graduate degree of Education (S.Pd.) in English Education Department, Tarbiyah and Teacher Training Faculty in IAIN Padangsidimpuan.

Therefore, we hope that the thesis will soon be examined by the thesis examiner team of English Education Department of Tarbiyah and Teacher Training Faculty IAIN Padangsidimpuan. Thank you.

Wassalamu'alaikumwr.wb.

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DECLARATION OF SELF THESIS COMPLETION

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The thesis has been accepted as a partial fulfillment of the requirement for degree of graduate of Education (S.Pd) in English.

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Title of Thesis : **The Effect of Semantic Mapping on Students Reading Comprehension at Grade VIII SMPN 1AngkolaMuaratais**

ABSTRACT

This research focused on the effect of Semantic Mapping on Students Reading Comprehension at grade VIII SMPN 1 Angkola Muaratais. The students' problems in Reading were: 1)Students did not have many vocabularies. Mastering vocabulary is one way to comprehend the sentence. But in reality, they did not have many vocabularies.2)Students do not know about the components of the paragraph so do not know the main idea, the content is also the conclusion of the text,3)students find it difficult to understand the text they read. The last strategy used by teacher is still conventional. Finally, the students were difficult in every fields of their learning process such as listening, speaking, reading and writing.

The formulation is How far is students' reading comprehension descriptive text before using semantic mapping strategies at grade VIII students of SMPN I Angkola Muaratais?.How far is students' reading comprehension descriptive text after using semantic mapping strategies at grade students VIII SMPN I Angkola Muaratais?.Is there the significant effect of semantic mapping strategies of students' reading comprehension descriptive text at grade VIII students SMPN I Angkola Muaratais?.The purpose of this research was to know whether there is the significant effect of Semantic Mapping on Students Reading Comprehension at Grade VIII SMPN 1 Angkola Muaratais.

The method used in this research was experimental research. Two classes were chosen randomly as the sample. They were VIII-A as experimental class that consisted of 24 students and VIII-B as control class that consisted of 24 students. It was taken after conducting normality and homogeneity test. The data was derived from pre-testand post-test. To analyze the data, the researcher used t-test formula.

After analyzing the data, the researcher found that mean score of experimental class after using Semantic Mapping was higher than control class. Mean score of experimental class before using Semantic Mapping was 58.62 and mean score after using Semantic Mapping was 81.91. Meanwhile, the mean score of control class in post test was 71.87. Besides it, the score of t_{count} was bigger than t_{table}(4.462>0.021). It meantthat the hypothesis alternative (H_a) was accepted. There was a significant effect of Semantic Mapping toward Reading Comprehension at grade VIII students of SMPN 1 Angkola Muaratais.

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ABSTRACT

Penelitian ini difokuskan pada Pengaruh Pemetaan Semantik terhadap Pemahaman Membaca Siswa Kelas VIII SMPN 1 Angkola Muaratais. Masalah siswa dalam Membaca adalah: 1) Siswa tidak memiliki banyak kosakata. Penguasaan kosakata merupakan salah satu cara untuk memahami kalimat. Namun pada kenyataannya mereka tidak memiliki banyak kosakata.2)Siswa tidak mengetahui komponen-komponen paragraf sehingga tidak mengetahui ide pokok, isi juga kesimpulan teks,3)siswa kesulitan memahami isi paragraf. teks yang mereka baca. Strategi terakhir yang digunakan guru masih konvensional. Akhirnya, para siswa mengalami kesulitan dalam setiap bidang proses belajar mereka seperti mendengarkan, berbicara, membaca dan menulis.

Rumusannya adalah Seberapa jauh pemahaman membaca teks deskriptif siswa sebelum menggunakan strategi pemetaan semantik pada siswa kelas VIII SMPN I Angkola Muaratais?. Seberapa jauh pemahaman membaca teks deskriptif siswa setelah menggunakan strategi pemetaan semantik pada siswa kelas VIII SMPN I Angkola Muaratais?. Adakah pengaruh yang signifikan strategi pemetaan semantik terhadap kemampuan membaca teks deskriptif pemahaman siswa kelas VIII SMPN I Angkola Muaratais?. Tujuan dari penelitian ini adalah untuk mengetahui apakah ada pengaruh yang signifikan Pemetaan Semantik terhadap Pemahaman Membaca Siswa Kelas VIII SMPN 1 Angkola Muaratais.

Metode yang digunakan dalam penelitian ini adalah penelitian eksperimen. Dua kelas dipilih secara acak sebagai sampel. Mereka adalah kelas VIII-A sebagai kelas eksperimen yang terdiri dari 24 siswa dan kelas VIII-B sebagai kelas kontrol yang terdiri dari 24 siswa. Itu diambil setelah melakukan uji normalitas dan homogenitas. Data diperoleh dari pre-test dan post-test. Untuk menganalisis data, peneliti menggunakan rumus uji-t.

Setelah menganalisis data, peneliti menemukan bahwa nilai rata-rata kelas eksperimen setelah menggunakan Semantic Mapping lebih tinggi daripada kelas kontrol. Rerata skor kelas eksperimen sebelum menggunakan Semantic Mapping adalah 58,62 dan skor rata-rata setelah menggunakan Semantic Mapping adalah 81,91. Sedangkan nilai rata-rata kelas kontrol pada post test adalah 71,87. Selain itu, nilai thitung lebih besar dari ttabel (4,462>0,021). Artinya alternatif hipotesis (Ha) diterima. Ada pengaruh yang signifikan Pemetaan Semantik terhadap Pemahaman Membaca pada siswa kelas VIII SMPN 1 Angkola Muaratais.

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بِسۡمِ ٱللَّهِ ٱلرَّحۡمَٰنِ ٱلرَّحِيمِ

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Researcher realizes this thesis is imperfect. Therefore, critics and suggestions are really needed to make this thesis become better in the future.

Padangsidimpuan, April 2021
Researcher

ISRA SOLIYAH SIREGAR
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CHAPTER I

INTRODUCTION

A. The Background of the Problem

English in general is international language that used by many people in some countries for establishing social relationship.In this globalization era, English is also used as the language of commerse. English is very important for us, especially in the fields of technology and science.

The position of English in the curriculum as a main subject from junior high school to university. English becomes one of the important subject for the students so that they can follow the development of science and technology. The establishment of national curriculum standard is seen as an essential component in educational reform.

The material of teaching English is the context of communicative competence includes four major aspects categorized in to main ways was productive competence and receptive competence. Productive competence consists of two different modes of language behavior, speaking and writing namely listening and reading. Receptive competence consists of two modes, namely listening and reading.

Reading is one of the important skills in English, students can get information and they can increase their knowledge and their experiences through reading. By having a good skill in reading, the students will be easy to get

information from many sources from books, magazines, newspapers, and brochures. On the other hand, if the students have a good ability in reading, they will be successful in their study and they understand what about the text.

The efforts in teaching reading comprehension are many strategies that can be used to improve reading comprehension skill.They are semantic mapping, skimming, scanning, summarizing, guessing and others.And then the govement change the curriculum based on KTSP become K13. The teacher should be given a wide authority in the selection of teaching methodologies, teaching resources and materials.

Condition of reading comprehension mastery in eight students of SMP N I Angkola Muarataisstill poor. Based on with the teacher in SMP N I Angkola Muaratais. English teacher said

> Some students have problems in reading comprehension seen from the learning process of students because during this time in reading learning.the first problem students did not have many vocabularies. Mastering vocabulary is one way to comprehend the sentence. But in reality, they did not have many vocabularies. Secondly students do not know about the components of the paragraph so do not know the main idea, the content is also the conclusion of the text. So students find it difficult to understand the text they read. The last strategy used by teacher is still conventional.[1]

[1]Private interview, Miss. Nurlan Waruwu teacher of SMP Negeri 1 Angkola Muaratais, (Juli 30th 2018, at : 09.00 WIB).

The factors of reading comprehension mastery are working memory, vocabulary, motivation, learning style and strategy in teaching.[2] .strategy is simply and interesting which can make teaching, and it can help the teacher and it make students enjoyable.There are many strategies that can be used to improve reading comprehension skill.They are semantic mapping, metacognition, answering question, summarizing, generating question, monitoring comprehension and others.[3]

Semantic mapping is strategy that becomes an option for authors apply in an effort to improve students reading comprehension Semantic mapping strategy is an alternative strategy that has significant effect on teaching reading comprehension.It also believed that semantic mapping strategy can motivate and involve students in thinking and reading.

Semantic mapping is a visual form of note taking that offers an overview of a topic and its complex information,allowing student to comprehend,create new ideas and build connections. Through the use of colors,images and words,semantic mapping encourages students to thebegin with a central idea and expand outward more in-depts sub-topics.[4] Semantic mapping helps students

[2] Sanford Karen L, Factors that affect the Reading Comprehension of Secondary Students with disabilities. Available at htpp://repository.usfca.edu/diss, (Accessed on august, 18,2020.11. 23. am).

[3] Adler.c.r, Seven Strategies to Teach Student Text Comprehension. Available at https://readingrockets.org/article/sevenstrategies, (Accessed on August,26,2020,10.15.am).

[4] Mohammad PiriArdakana and Anita Lashkarian,"Using Mind Mapping Strategy to Improve Reading Comprehension Ability to Intermediate Iranian Student", *Science Journal*, Vol. 36 No. 3, Mei 2015, hlm.3 .

structure and order their thinking by creating a visual representation of concepts and their understanding.

The role of semantic mapping in teaching reading comprehension. The first, semantic mapping is grouping ideas into meaningful clusters, helps the students to provide some order to the chaos. Second, readers can easyidentify,understand and recall the meaning of words they read in the text. Finally, to help students identify important ideas and how these ideas fit together to provide an alternative format to the outline.

Based on the explanation above, researcher wants to conduct a research on title:**"THE EFFECT OF SEMANTIC MAPPING ON STUDENTS READING COMPREHENSION AT GRADE VIII STUDENTS OF SMP NEGERII ANGKOLA MUARATAIS"**

B. The Identification of the Problem

Reading comprehension is theability to process text,understand its meaning, and to integratewith what the reader already knows. Reading comprehension are complex process which take part of useful of good and poor ability. Researcher concluded that reading comprehension is the ability the reader to understand the text and comprehend the mean of text.

There are many factors of reading comprehension mastery are working memory, vocabulary, motivation, learning style and strategy. However, the

researcher chose semantic mapping strategy as a learning method to solve the problem in reading comprehension descriptive text.

C. The Limitation of the Problem

Based on identification of above, the researcher has identified many problems As mentioned above, there are many factors of reading comprehension mastery are working memory, vocabulary, motivation, learning style and strategy. Here, the researcher does not discuss all the factors.

This research discusses one factor only that is the reading strategy. So, the researcher limitation of the problem and focus in semantic mapping on students' reading comprehension descriptive textat grade students of VIII SMP N I AngkolaMuaratais.

Researcher choose this research because semantic mapping is one of the reading comprehension strategy to help students identify important ideas and how these ideas fit together to provide an alternative format to the outline.

D. The Formulation of the Problem

Based on the above identification of problem, this research formulate the problems as below:

1. How far is students' reading comprehension descriptive text before using semantic mapping strategies at grade VIII students of SMPN I AngkolaMuaratais?

2. How far is students' reading comprehension descriptive text after using semantic mapping strategies at grade students VIII SMP N I Angkola Muaratais?
3. Is there the significant effect of semantic mapping strategies of students' reading comprehension descriptive text at grade VIII students SMP N IAngkola Muaratais.

E. The Purposes of the Research

From above formulation of the problem, the purposes of this research were:

1. To describe the students' reading comprehension before using semantic mapping at grade VIII SMP N I Angkola Muaratais.
2. To describe the students' reading comprehension after using semantic mapping at grade VIII SMP N I Angkola Muaratais.
3. To describe whether there is or there is not any significant effect of semantic mapping method of students' reading comprehension at grade SMP N I Angkola Muaratais.

F. The Significances of the Research

The result of the research is expected give more information used to:

1. For headmaster of SMPN 1 AngkolaMuaratais as information to improve the quality students of english education.
2. The result of this research was expected to be useful for the English teachers in SMPN IAngkolaMuarataistheir information or their source in teaching reading. This research is also expected to be able to become a motivation for the teacher to always make an interesting and fun strategy in teaching reading.
3. The result of this research was expected to enhances the knowledge of the reader as the reading materials for students.

G. Definition of operational variables

There are two variables in this research that should be clarified are as follows:

1. Variable X

   Semantic Mappingone of the strategies in teaching reading comprehension.SemanticMapping is graphic organizer in which the major categories radiate from a central ideas and sub-categories are represented as branches of larger branches. It is a visual tool that can

be used to generate ideas,takenotes,organizethinking,and develop concepts. [5]

2. Variable Y

Reading comprehension is a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal improving some aspect of comprehension. Consider a very simple-minded strategy for purposes of illustration. Teacher often instruct students to look up a word in a dictionary when they encounter a rare word with which they are unfamiliar.[6]

H. The Systematic of the Thesis

The systematic of this research was divided into five chapters. Each chapter consists of many sub chapters with detail, as follow:

1. The first chapter, it consisted of background of the problem, identification of the problem, formulation of the problem, limitation of the problem, purpose of research, significances of the research, definition of operational variables, and the outline of the thesis
2. The second chapter, it consisted of the theoretical description. It was divided into subchapters which consist of description of semantic mapping, definition of reading comprehension.

[5]Mohammad Piri Ardakana and Anita Lashkarian,"Using Mind Mapping Strategy…p.86

[6]Danielle S. Mcnamara, *Reading Comprehension Strategies* (Amerika: Lawrence Erlbaum Associate, 2007), hlm. 6 .

CHAPTER II

LITERATURE REVIEW

A. Theoritical Descriptions

1. Reading comprehension

a. Definition of Reading Comprehension

Reading comprehension is the process of simultareously extracting and constructing meaning through interaction and involvement with written language.[7]Reading comprehension is interaction between thought and language and bases evaluation of success in comprehension on the extent the reader's reconstructed message agrees with the writer's intended massage.[8]

Reading comprehension as the process of creating meaning from text. The purpose is to get an understanding of the textrather than to acquire meaning from individual words or sentences.[9]

From the explanation above, this research concludes that reading comprehension is the process of extracting the meaning from the text.

[7] Karen Tankerslay. *Literacy Strategies* (Virgina USA:ASCD. 2005),p. 108

[8] Wayne Otto, et. al. *How to Teach Reading*, (USA: Addison-Wesley Publishing Company, 1979), p.151

[9]Abbas parhosein Gilak Jani,"*How Can Student Their Reading Comprehension*", Education journal, Vol. 6 No. 2, Mei 2016,hlm. 230

b. The Purposes of Reading Comprehension

Every lesson has purpose; it is used to know where the direction of the lesson is. Reading also has many purposes; it is used to get involved in reading assignment. The purposes are as follow:

1) Reading for Pleasure
   Reading is not for pressure. For instance, if the readers read recipes for pleasure, indirectly the readers are as unusual as the guy who reads about molecules for pleasure. Most people read recipes with the purpose of using or applying the information the readers read.
2) Reading for Practical Application
   Another purpose for reading is to gain the information which the reader can apply to or use in a particular situation. For example, when a reader reads directions in order to put a model airplane together, or a reader reads a shop manual to learn how to run a piece of equipment.
3) Reading for General Ideas
   If the purpose of reading is to get a general idea of the material being read, then the reader can read at faster speed, skipping sections and looking only for main ideas reading bold print headings and sub-headings and summary statements usually presented at the end of the material.
4) Reading to Locate Specific Information
   One of purpose in reading is to locate specific information. When the readers know what they are looking for. The readers can skim and skip over material at very rapid rates.
5) Reading to Critically Evaluate
   Reading critically is the process of being aware of an author's intent or the point of writing, his use of facts, his attitude and bias toward his subject matter.[10]

According to Cahyono .the purpose of reading comprehension as follows:

a. Readers are able to discriminate among events as they have been presented.
b. They recognize the order of presentation in the stated sequence.

[10] W. Royce Adams, *Reading Skills A Guide for Better Reading* (London: Cambridge University, 1998), p. 8-11.

c. The reader identifies the main idea of a paragraph.
d. They must have knowledge of prescribed of denotative meaning.
e. They understand form of figurative language.[11]

In relation to the purposes of reading tarigan classify the purposes of reading in to 6 they are:

1) Reading is for identifying important information.
2) Reading is for main ideas.
3) Reading is for finding the specific information.
4) Reading is for underlining the important information.
5) Reading is to classify the difficult word.
6) Reading is to evaluate.[12]

Based on explanation above, this research can be concluded that the purposes of reading comprehension is to find general ideas or important information.

c. The Processes of Reading Comprehension

Nunan the reading comprehension process there are five categories that are: bottom-up models, phonich approach, intensive reading, top-down models, extensive reading:

1) Bottom-up models typically consist of lower-level reading process student start with the fundamental basics of letter and sound recognition.
2) Phonics approach to teaching reading supports a bottom-up model. The approach is used i many reading seies.
3) Intensive reading involves a short reading passage followed by textbook activities to developed comprehension and/or particular reading skill.
4) Top-down models, on the other hand begin with the idea that comprehension resides in the reader.

[11] Cahyono, Mukmin, *Teaching and Strategies to Enhance English Language Learning*. (Malang: University of Malang Press, 2011), p. 68.

[12] Henry Guntur Tarigan. *Membaca Sebagai Suatu Keterampilan Berbahasa* ,(Bandung: Aksara, 1986), p. 9.

5) Extensive reading plays a key role in top-down approaches to reading.[13]

Based on explanation above, it can be concluded that there are five stage of models of reading comprehension that are: bottom-up models is the proses of reading start from basic of letter until large text, phonics approach teaching reading support bottom-up, intensive reading to developed comprehension and/or particular reading skill, top-down models is the process of reading star from the background knowledge until word by word, and extensive plays a key role in top-down.

d. Types of Readings

Beside have the models reading material also have types,several types of reading are identified. Each type or genre of written text has its own set of governing rules and conventions. A reader must be able to anticipate in order processing efficiently. The are the genres of reading, such as:

1) Academic reading: general interest articles (in magazine, newspaper, etc), technical reports (e. g. lab report), professional journal articles, reference material (dictionaries, etc), text book,theses, essays, paper, testdirections, editorials and opinion writing.
2) Job-related reading: massages, letter/email, memos, report (e. g. job evaluations, roject reports), schudels, labels, signs, announcements, orms, applications, questionnaries, financials documents,(e.g.bills, invoices, etc), and directories.
3) Personal reading: newspaper and magazine, letter, emails, greeting cards, invitations, massages, notes, lists, schedules (train, bus, plane,

[13]David Nunan, *Practical English Language Teaching*, (New York: McGraw-Hill Companies, 2003). p. 70-72

etc.), recipes, menus, maps, calendars, advertisements, novels, short stories, jokes, drama, poetry, financial documents, forms, questionnaries, medical reports, immigrations documents, comic strips and cartoon.[14]

In the case of reading, variety of performance is derived more from the multiplicity of types of reading (the genres listed above)than from the variety of over types of reading performance,nevertheless,for considering assessment procedures,several types of reading performance are typically identified. The various assesment tasks as follow:

a. Perceptive reading, it is involve attending to the components of larger strecthes of discourse letters, words, punctuations, and others graphemic. Bottom-up prossesing is implied.
b. Selective reading, this category is lagely an artifact of assesment formats. In order to ascertain one's reading recognitions of lexical, grammatical, or discourse futures of language within a very short stretch of language, certain typical task are used: picture-cued task, matching, true/false, multiple-choice, etc. a combination of bottom-up and top-down processing may be used.
c. Interactive reading. Because reading is a process of negotiating meaning; the reader brings to the text a set of schemata for understanding it, and take is the product of that interaction. Materials use in interactive reading must be interesting and comprehensible, both semantically and syntatically, and they should include some elements slightly beyond the students present levels.
d. Extensive reading involves some what longer texts than we have been dealing with up to this point. Journal articles, technical report, longer assay, short story, and books fall into this category. The reason for placing such reading into a separate category is that reading of the type og discourse almost always involves a focus on meaning using mostly top-down processing, with only occasional use of targeted buttom-up strategy. Also because of the extent of such reading, formal assesment is unlikely to be contained within the time contraints of a typical

[14] David Nunan, *Practical English*….186

formal testing framework, which presents a unique challenge for assessment purpose.[15]

So, reading is a complex process that involved the features of parts of success ability and failure. After reading, readers must be able to remember and understanding about the text, because reading is a meaning getting processes, so readers must be able to get the information from what they reads.

e. The Material of Reading Comprehension in Junior High School

Reading is one of the English skills. It is taungh in vocational school with different materials. The materials of reading at VIII vocational school are descriptive text, recount text, procedure text and short story text.[16].

1. Descriptive text
   1) Definition of descriptive text

      Descriptive text is a text which tells us what a person or a thing is like. Like describes the character of a person, animal, place, or thing.
   2) Generic structures descriptive text
      - Identification

        Identifications contains about the general introduction of person, place, animal, object will be describe.
      - Description

        Description of something such animals, things, place or person by describing its features, forms, colors, or anything related to what the writer describes.[17]

        Example: descriptive text

PETER

[15] H. Douglas Brown,*Language Assessment Principle and Classroom Practices*,(Pearson Education Inc,2004) p.186.

[16]Entin Sutinah and Friends, *Get Alingwith English,* (Bandung: Englangga, 2010), p.

[17]Wishon George E, *let's write English, (*Bandung: Litton educational, 1980), P. 64

Peter is the youngest in our family. He is fourteen years old and four years younger than me. Event though is young but he is very independent.

He has long straight hair, bright eyes and a friendly smile. Sometimes he is rather naughty at home, but he usually does what he is asked to do. Peter is interested in sports very much, and at school, he plays football and tennis. He is the best badminton player in our family and and peter's favorite sport is badminton.

Peter is my youngest brother who is independent and very fond of sports.

1. What is the main idea of the first paragraph?
   a. Peter is the youngest child in his family
   b. Peter is the oldest in his family
   c. Peter is diligent in his family
   d. Peter is the stupid in his family

2. How is peter in his family?
   a. He is the best badminton player in his family
   b. He is the best cooker in his family
   c. He is the best dancer in his family
   d. He is the best singer in his family

3. What the characteristic of peter?
   a. He has long straight hair
   b. Curly hair
   c. Dark eyes
   d. Ignora

4. "He is fourteen years old…Than *me*." The underlined word refers to?
   a. Peter
   b. The writer
   c. The writer's brother
   d. The writer's family[18]

2. Semantic Mapping

[18]"Media inggris"(http://www.media inggris.com, accesed on November 29, 2020

a. Definition of Semantic Mapping

Semantic Mapping is strategy for graphically representing concepts. Semantic mapping portray the schematic relations that compose a concept .[19] Semantic mapping is a tool that teacher can use to help students connect prior knowledge with new science concepts to be learned in terms of a schema conceptual system.

Semantic Mapping is a grapic organize used to connect a word with many associations. On an unlined piece of paper,learners create a ”map” with the word or concept in the center and associations with the word branching out from it in various direction.[20]

From the explanation above, the researcher concludes that semantic mapping is semantic is a strategy for graphically representing concepts. It assumes that there are multiple relations between a concept and the knowledge that is associated with the concept.

Semantic Mapping especially helps activate a students prior knowledge for reading and brainstorming before beginning to write.[21]

b. The Purpose of Semantic Mapping

[19] .Adelia puspa and Syahrial “Improving Reading Comprehension Throught Semantic Mapping Strategy for Indonesian Senior High School Student” *journal of Applied linguistics*, Vol. 1 No.1, June 2016, hlm.51

[20] Kristin Lems, *Teaching Reading to English Language Learners* (New york:The Guildford Press. 2010),p. 178.

[21]Mohammad Piri Ardakana and Anita Lashkarian,”Using Mind Mapping Strategy to Improve Reading Comprehension Ability to Intermediate Iranian Student”, *Science Journal*, Vol. 36 No. 3, Mei 2015, hlm.10

Semantic mapping have grade many purposes. According to Buzan and Barry the purposes of mind mapping are:

a. To explore all the creative possibilities of a given subject.
b. To clear mind of previous assumptions about the subject, thus providing space for new creative thought.
c. To generate ideas that result in specific actions being taken, or physical realyta being created or chenged.
d. To encourage more consistent creative thinking.
e. To create new conceptual frameworks whitin which previous ideas can be reorganised.
f. To capture and develop "flashes" of insight when they occour.
g. To plan creatively[22].

Based on explanation above, the purpose of mind mapping technique are help students to solve their subject with the explore all creative possibilities, clear mind previous assumptions, ganerate ideas., encourage more consisten creative thinking create new conceptual freme works capture and develop "flashes", and to plene creatively. The purpose of the semantic mapping is to help the students identify important ideas and how these fit together and to provide an alternative format the outline.

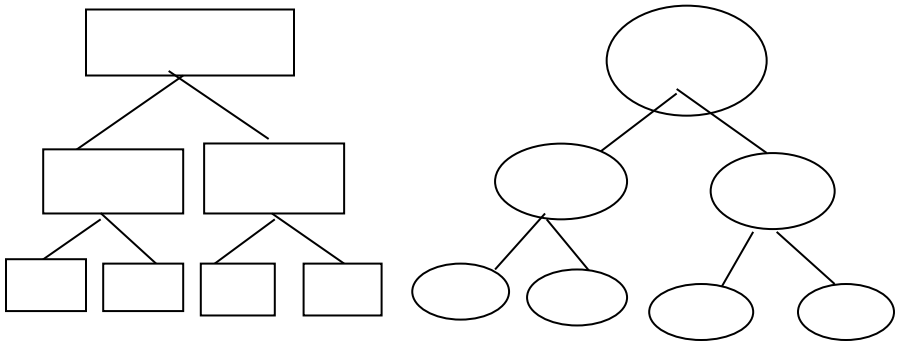
c. Kinds of Semantic Mapping Strategy

Semantic mapping is strategy which can make teaching strategy more simply and interesting, and it make students enjoyable, because there are four kinds of semantic mapping that cannot make students boring. They are; network tree, star, cycle, concept map, and spider concept map.

1) Network three

[22] Tony Buzan, Barry Buzan, *The Mind Mapping Book, How to Use Radiant Thingking to Miximize to Your Brain's Untapped Potential*, (New York: Hudson Street, 1994) p. 153-154

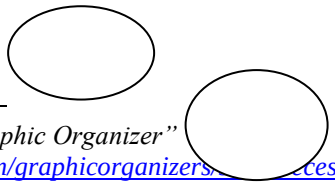
Network tree is one of the kinds of the research. The way for making network tree is so easy. Key word or idea of topic is making in rectangle, and another words is writing in line connection. This line is showing that concepts has related one word other words.[23] Appropriate with name of graphic, network tree is like as tree.



Picture 1. Network tree
(source: scholarly research journal)

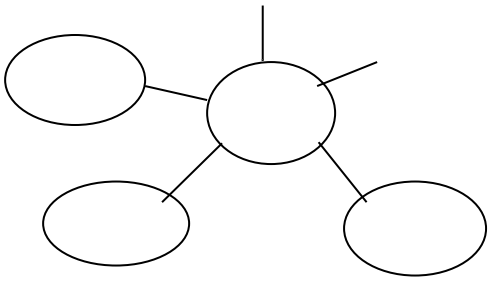
2) Star map

The second kinds of the semantic mapping is called star map. This kind also easy for making. Star diagram are useful for basic brainstorming about a topic or simply listing all the major traits related to a theme.[24] This graphic a like a star:



[23]Enchantedlearning,*"Graphic Organizer"* (*http://www.enchantedlearning.com/graphicorganizers/ accesed* on November 29, 2013 retrieved at 10.00 pm).

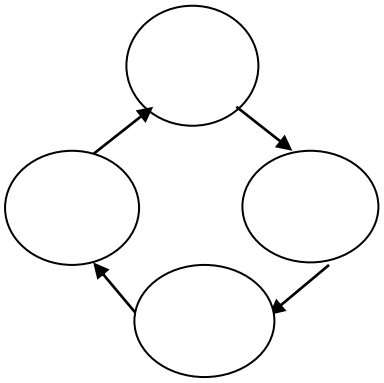
[24]Enchanted learning,"*Graphic Organizer"* (*http://www.enchantedlearning.com/graphicorganizers/sws/, accesed* on November 29, 2013 retrieved at 10.00 pm).



Picture 2. Star map
(source: scholarly research journal)

3) Cycle concept map

Cycle concept is kinds semantic mapping that can be used in teaching, especially in teaching vocabulary. Cycle concept map is used to related how one connection structure is connection structure is connecting.[25] For this one the graphic is made like as cycle.

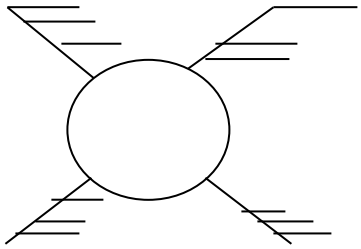


Picture 3.Cycle map
(source: Schoarly research journal

4) Spider map

[25]Enchanted learning,"*Graphic Organizer*" (*http://www.enchantedlearning.com/graphicorganizers/sws/, accesed* on November 29, 2013 retrieved at 10.00 pm)

Spider map is the last kinds of semantic mapping strategy. Spider map is always used to oppuse opinion.[26] This graphic is made like spider map.



Picture 4.Spider map
(source: Schoarly research journal)

The kinds of semantic mapping above can be used to teach Reading, it can bedone appropriate with vocabulary that will be learned. With some kinds mapping above, the teachers can make class more innovative, because there are some kinds of semantic mapping which can be applied. So that, teaching reading comprehension with semantic mapping strategy is not monotonous.

In this research choose star map as the semantic mapping that use because it is easier to draw and simple. Star diagram are useful for

[26]Enchanted learning,"*Graphic Organizer"* (http://www.enchantedlearning.com/graphicorganizers/sws/, accesed on November 29, 2013 retrieved at 10.00 pm)

basic brainstorming about a topic or simply listing all the major traits related to a theme.

d. Procedures of Semantic Mapping

These are the procedure that the students:

1. Understanding of the Topic is an activity done by the students before they read the text. The students draw a large oval on the paper and write inside the topic about. For example, they are reading about pollution. They write inside the circle with the word pollution.
2. BrainstormingIn this activity the students try to think of the ideas that might relate to the topic by using short questions in their main. For instance, they think of types of pollution, the meaning of pollution and so on. Brainstorming means that is an application of the schema theory which attempts to explain how people integrate new information with their existing framework of knowledge. In order to make it clear about information that they express, it is suggested to use different color of pen.
3. CategorizationIt is time to connect the ideas to the levels of the ideas, categories ideas, exemplifying, and detailideas by using circles, squares or rectangles and straight lines in the schema map. Here, the studentsneed some vocabularies.
4. Personalizing the mapIt is the major activity. Here the students start to read the text. Through reading, they will decide to add or to eliminate from the information that they have written in pre-reading activity. The students try to include all information from the text.
5. Post Assignment activityIn this activity.[27]

Based on explanation above the procedure 0f semantic mapping are:

Understanding of the Topic is an activity done by the students before they read the text. Brainstorming In this activity the students try to think of the

[27]Simarmata Rjhon Pieter ,reading comprehension skills with semantic mapping and K.W.L strategies.Avaiableat.*https://id.scribd.com/document/357012504/semanti-map, (Accessed on january, 12, 2021. 20:01 p.m).*

ideas. Personalizing the map it is the major activity. Here the students start to read the text. Through reading, they will decide to add or to eliminate from the information that they have written in pre-reading activity. The students try to include all

e. Advantages of Semantic Mapping

The technique, strategy, method, approach have advantages and disadvantages. Same with another, mind mapping also have advantages and disadvantages:

There are some advantages semantic mapping:

a. Adaptable, they can be used for lectures; note-making from books; essay plans, as well as less structured tasks.
b. Easy to add ideas later, at any time.
c. Help you focus on the links and relationships between ideas so you don't just have disconnected facts.
d. Can be personalised with pictures and symbols to make things more memorable.
e. Useful tool for condensing lots of information a whole topic into a semantic map poster, to aid revision.[28]

Therefore , Buzan says there are advantages of semantic mapping:

a. The central idea is more clearly defined.
b. The relative importance of each idea is clearly identified.
c. The more important ideas are immediately recognizable at the centre of the mind map.

[28] University of Brigham, Mind Mapping. Avaiable at *https://intranet.birmingham.ac.uk/as/studentservices/disability/learning-support/effective-learning/skills/mind-mapping.aspx*(Accessed on April, 25, 2020. 08:30 p.m).

d. The links between key concepts are immediately identifiable via Key Words encouraging association of ideas and concepts and improving memory.
e. Review of information is effective and rapid.
f. The structure of a semantic map allows additional concepts to be added easily.
g. Each semantic Map is a unique creation which will in turn aid accurate recall[29].

From explanation above semantic mapping make is a suitable technique to problem solving in learning, helps students focus on the links and relationship with idea, essay for students comprehending the text.

There are some disadvantages semantic mapping:

a. Can't incorporate large chunks of text.
b. You have to stick to the rules of semantic mapping to get the optimum benefit from the tool.
c. Creating the map may take time. However, this will help you to review or recall information and will check your understanding.
d. When you've personalised your map, it can be difficult for others to understand. [30]

In addition, according to Peter Russell there are some disadvantages of semantic mapping, those are:

a. Energy and time wasted writing down superfluous words.
b. Other information may be missed while noting down one idea.
c. Take longer to read and review.
d. Associations and connections between key words and ideas not readily apparent.
e. Attention wanders easily.
f. Lack of color and other visual qualities handicap memory.
g. Traditional notes aid forgetting not memory [31].

So, there are many about disadvantages semantic mapping not only advantages. That all of about disadvantages are make the students get a long

[29] Tony Buzan., *The Mind Mapping Book…*P. 144-145
[30] University of Brigham, *Op. Cit*, (Accessed on April, 25, 2016. 08:30 pm).
[31] Peter,Russel, AdventegesMind Mapping, Avaiable at: *http://www.peterrussell.com/MindMaps/Advantages.php*, (Accessed on April, 20, 2016. 20:01 p.m).

time for creating the map, need much colours and the map it can be difficult for others to understand.

Based on the explanation above semantic mapping is a diagram used to represent words, ideas, tasks, or other items linked to and around a central key word or idea. semantic mapping may also aid recall of exiting memories. The element of a given semantic mapping are arranged intuitively according to the importance of the concepts, and are classified into groupings, branches or areas, with the goal of representing semantic or other connections between portions of information. semantic mapping technique can make the students more creative and easy to understand what they read. They have also interest to learn by using semantic mapping technique.

3. Teaching Reading Comprehension by Using Semantic Mapping

The use of semantic mapping on students reading comprehension to help the teacher and the students and the learning process. There are some activities in teaching reading comprehension with semantic mapping which can be applied in the classroom. Activities of for using total semantic mapping, they are:

1) The process in pre- teaching :

Teacher come in to the class and open the class. Second, Teacher ask student to pray. Third teacher give motivation. Fourht teacher give illustration about topic.

2) While- Teaching

This activity to make the students teachingreading comprehension asfollows; first, the teacher explained about the descriptive text to the students. Second,The teacher introduced the semantic mapping strategy to the students. Next Students pay attention to the teacher explanation. Third,the teacher started applying the procedures of semantic mapping strategy. The students draw a large oval on the paper. Students write inside the topic. Fourt, teacher gives a topic to be discussed and announced the topic of the text by drawing a large oval on the whiteboardand then wrote the topic inside of it. Students try to think of the ideas. Students provide information they know about the topic.Students write down important information. Next the teacher asked the students to read the descriptive text. Students to start read descriptive text. Students are to the think of the other words that come to mind when they read the key words of the topic. Students to write down a list of these words to be shared with the class. . The last, teacher asked the students to answer the questions based on the text. The semantic map they just drew can be helpful for them to find the answer faster.

3) Post- Teaching

The first teacher make a Learning summary and conclusion. Second Praying at the end of learning. Next Students repeat write remember the learning.

TABLE.1

Teacing Reading Comprehension by Using Semantic Mapping

	Teacher activities	Procedure of semantic mapping	Students activities
1.Pre Teaching	1. Teacher give salam (greeting) 2. Teacher ask student to pray. 3. Teacher give motivation 4. Teacher give illustration about topic		1.Student answer salam 2.Students responding to the teacher 3.Students pray 4.Students answer Present and not present 5.Students listening to teacher 6.Student see and focus to the teacher
2.While Teaching	1.The teacher explained about the descriptive text to the students.		1.Students pay attention to the 2.Teacher explanation 3.Student ask about descriptive text
	1. The teacher introduced the semantic mapping strategy to the students.		1.Students pay attention to the teacher explanation
	1. The teacher started applying the procedures of semantic mapping strategy	1. Understanding of the Topic is an activity done by the students before they read the text.	1. The students draw a large oval on the paper 2.Studentswrite inside the topic.
	1. Teacher gives a topic to be discussed and announced the topic of the text by drawing a large oval on the whiteboardand then wrote the topic inside of it.	2. BrainstormingInt his activity the students try to think of the ideas	1. Students try to think of the ideas 2. Students provide information they know about the topic. 3.Students write down importantinformatio n.

	1. The teacher asked the students to read the descriptive text.	3. Personalizing the map it is the major activity.	1. Students to start read descriptive text. 2. Students are to the think of the other words that come to mind when they read the key words of the topic. 3. Students to write down a list of these words to be shared with the class
	1. The teacher asked the students to answer the questions based on the text. The semantic map they just drew can be helpful for them to find the answer faster.		1. The students were asked to answer the questions based on the text.
3.Post Teaching	1. Teacher make a Learning summary And conclusion 2. Praying at the end of learning		1.Students repeat write remember the learning 2.Students praying to end of learning

Based on table above, there are some procedures of applying to teaching semantic mappingin the classroom. It can be looked from the procedures that semantic mapping to make teacher and student active and have

interaction in teaching learning process in the classroom, especially in learning reading comprehension.

J. Review of the Related Findings

There have been many researches done regard to this research and the research found some related research such us:

The first isNurShobika from UniversitasMuhammadiyah Gresik have done research".[32] The Concluding of her research, there was the significant effect of using cooperative script on students' reading comprehension. It was proven from students' score in post-test scores both experimental and control group that the mean score of students in the experimental group. The researcher found that the mean score of pre-test of the experimental group was 47.7 and the mean score of post-test was 79 with t_0 was 5.48 and t_t was 1.67 (t_0 is higher than t_t, 5.48 > 1.67).

The second is Putri Ziko Mamura, State University of Yogyakarta, She concluded that the different result of students' vocabulary mastery. It is because the students' average scores of the post test after giving treatment increase 1,0517 from the students' average scores of the pre-test before giving the treatment.

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[32]Nur Shobikh, The Effect of Cooperative Script In Teaching Reading Comprehension For The Eighth Grade Students at SMP N 1 Sidayu Gresik. retrieved from*http://digilib.umg.ac.id/gdl.php?mod=browse&op=read&id=jipptumg--nurshobikh-1158*.,on November 5th.2015 at 04.00 p.m.

The third is from Nida jumaliana. The result of comparison between the students' understanding in reading ability before and after using of Semantic mapping is using pre-tet and post-test, the score are 69.3 and 75.2. So there is significant influence of using of Semantic mapping on the students understanding in reading ability at the eighth grade students of SMP N 1 Kadipaten Majalengka.

The research conducted by the three researchers above discussed the same problem and the samegoal, namely to find out whether there is a relationship or a significant influence on the problem under study. But the three researchers used a different strategy to see asignificant influence on reading comprehension. The researcher also chose a different strategy to improve student's ability in reading. Researchers used a semantic mapping strategy to determine the significant influence on students reading comprehension in SMP N 1 Angkola Muaratais.

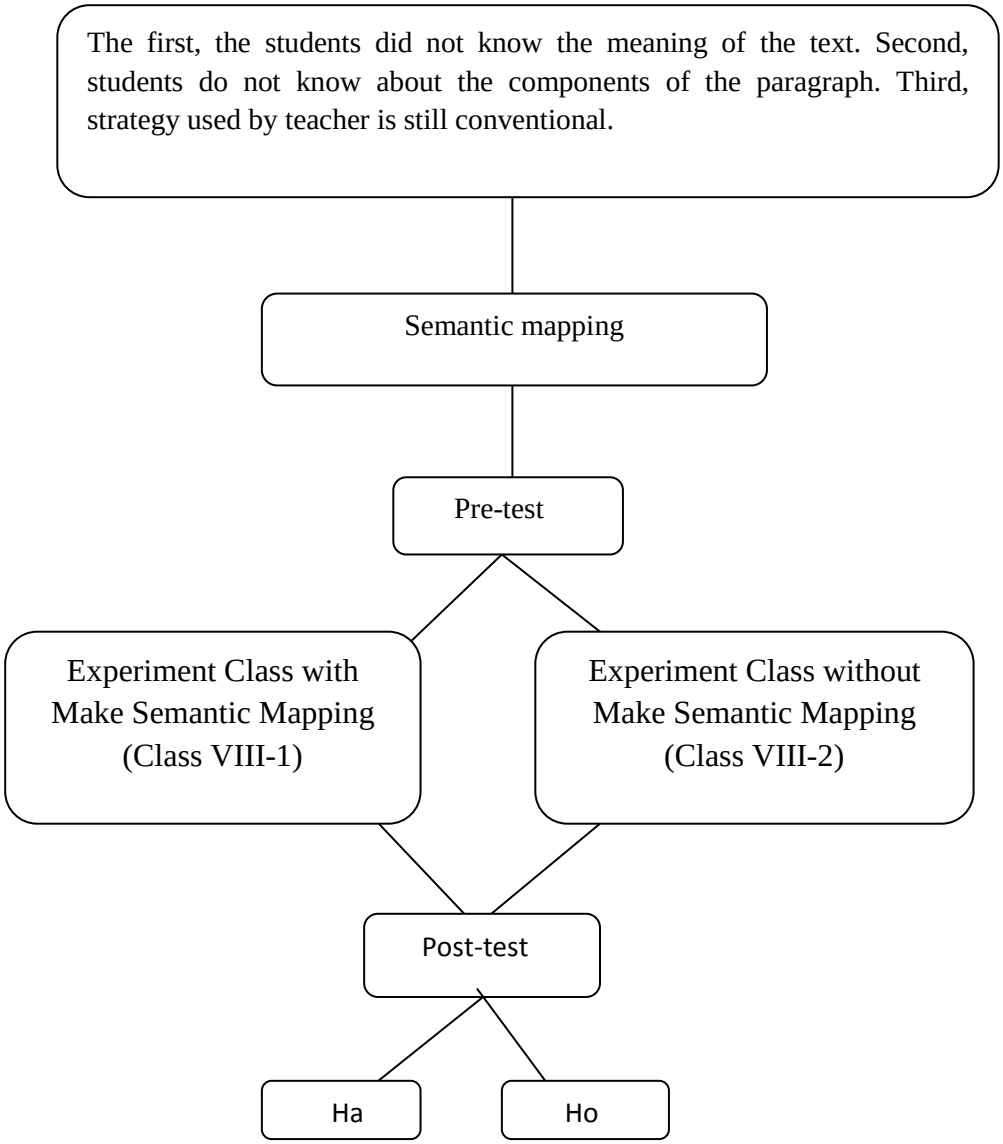
K. Conceptual Frame Work

Reading is one of the most important skills. Reading is a process carried out and used by the reader to get the information, massage to be conveyed by the author throught the medium of words/written language.

There are many factors that effecting reading activity, such us: luck vocabulary, motivation and attention and less in using reading strategies. First lack of vocabularry, make students difficult in guessing and get the mean ideas of written materials,the second lack of motivation.

While reading, readers often face the problem that making their comprehension less. Then it make them difficult getting the information of ideas fro the written material, so that, to make them easier and faster they will accept what is in print directly without consideration. Therefore, in order to help became comprehension, there are many ways or strategy that can be used the readers such us that have mentioned above and then can be known the effect of their reading comprehension achievement and their mastery of semantic mapping strategy.

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



l. Hypotheses

Hypothesis is the provisional result of the research. The hypotheses of this research were:

1. There was the significant effect of semantic mapping strategy on students' reading comprehension at grade VIII of SMP Negeri I Angkola Muaratais (Ha). $\mu 1 > \mu_2$
2. There was no significant effect of semantic mapping method on students' reading comprehension at grade of SMP Negeri I Angkola Muaratais (H0).

CHAPTER III

RESEARCH METHODOLOGY

A. Place and Time of The Research

This research was at conducted at SMP N I AngkolaMuaratais.It is located atSorimanaon,AngkolaMuaratais It is about 3kilometers from the central town. This research was done from November 2018 until finish.

B. Research Design

Thisresearch has used quantitative research by using experimental researchwith control and experimental class in doing this research. According to Gay and Airasian , experimental research is the only type of research that can test hypothesis to established cause and effect relationship. [33] So, experimental research is a kind of research which has the aim to know the effect of treatment between one variable or more variable.

In this research, this research will choose two classes as experiment class and control class. The research design of this research can be design as follow:

Table 1
Pre-test and Post-test Group Design

Class	re-test	Treatment	Post-test
Experiment Class		√	√
Control		×	√

[33]L. R. Gay and Peter Airasian, *Education Research*(New York: Merril, 2000) p. 367.

Class			

(source: Sugiyono, *MetodePenelitianKuantitatif, Kualitatif, dan R&D)*

Related to the above quotation, thisresearchused treatment in experimental class. Furthermore, thisresearch will look how far the effect of semantic mapping to improve students' reading comprehension.

C. Population and Sample

a. Population

Gay and Airasian stated that population is the group of interest to this research, the group to which she or he would like the results of the study to be generalizable.[34]So,It means that the population of this research is all of the VIII class of SMP N 1 AngkolaMuaratais. It consists of 3grade with 71 students. It can be seen in the following table:

Table 2
The Population of the Grade VIII Students of SMPN 1 AngkolaMuaratais

No	Grade	Total of Students
1	VIII-A	24
2	VIII-B	24
3	VIII-C	23
TOTAL		71

(Source: data of students SMP Negeri 1AngkolaMuaratais from voice of headZmaster)

[34].L. R. Gay and Peter Airasian*, Education….122*

b. Sample

Gay and Airasian stated that sample comprises the individuals, items or events selected from a larger group referred to as a population. [35] So, sample is two or more classes that represent the population to be given the treatment or test.

To get the sample, the researchused random sampling. Random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. [36] So, the reason use random sampling technique in which all population were randomized based on their class. The researcher used random sampling technique because of all of the population were at the same grade, curriculum, lesson, same age, and don't use placement test in to the role. So, the researcher takes two classes as sample. One class is experimental class and the other is control class.

Based on explanation above, the population is the eleven grade of the second year students, two grade are selected randomly in order to be an experimental or control class. In this research, the experimental class is VIII-A and control class is VIII-B. The researcher chooses VIII-A consists of 24students and VIII-B consists of 24 students. Therefore, total samples

[35],L. R. Gay and Peter Airasian, *Education Research*(New York: Merril, 2000) p. 121
[36]. L. R. Gay and Peter Airasian, *Education….123*

are 48 students. One class as experimental class and another one class as control class.

Table 3
Sample of the Research

The First Experimental Class	The Second Control class	Total
VIII-A = 24 Students	VIII-B= 24Students	48 Students

D. Instrument of Collecting Data

Instrument is a tool that can be used by the researcher to collect the valid and reliable data. In this research, the researcher used a test. Test is done based on the assumption that human have the differences in ability, personality, and behavior and it can be measured by appropriate way.[37] The form of the test is multiple options. The test that used in this research is multiple choices that consist of four chooses, they were a, b, c, and d. In this research the this research will give pre-test, test, and post-test to experimental and control class. the pre-test and post-test were about reading comprehension, this test consisted of 100 items, 50 items for pre-test and 50 items for post-test. To find out the scores of the students' answer, the researcher gives 2 score for each item. Thus, the maximum score of test is 100.

[37]IbnuHadjar, *Dasar-DasarMetodologiPenelitianKuantitatifdalamPendidikan*, (Jakarta: Raja GrafindoPersada, 1999), p. 173

Futher, reading comprehension skill of the students is gain the information and a meaning getting process. So, the indicators of reading.

Table 4
Indicator of Reading Comprehension Pre-Test

Indicator	Number of	otal	core
Identify topic of the text	1,9,16,21,25,29,37	7	14
Identify main idea	2,5,10,14,18,,30,41 42,43,46,49	1	22
Gain some information	3,4,6,7,11,12,15,17, 20,22,23,26,27,28,31, 32,33,34,35,38,39,44, 45,47,48,50	6	32
Getting meaning of word or sentence	8,12,19,24,36,40	6	12
		0	100

The following is formula is score students semantic mapping strategy

$$students\ score = \frac{students\ score\ answer}{total\ items} \times 100\%$$

Table 5
Indicators of Reading Comprehension Post-Test

Indicator	Number of	Total	Score
Identify topic of the text	8,12,16,32,38,43,47	7	14
Identify main idea	2,6,13,17,24,25,26, 29,31,37,41	11	22
Gain some information	3,4,7,9,10,14,15,18 19,20,21,22,27,28,30 32,33,36,39,40,42,44, 45,48,49,50	26	32
Getting meaning of word or sentence	4,11,23,34,38,46	6	12
		50	100

E. Validity and Reliability Instrument

a. Validity

Gay and Airasian stated that validity is the most important characteristic a test or measuring instrument can possess.[38]

It means, validity test make the test valid or not to give the experimental and control group.

There are three types of validity in quantitative research:[39]

1) Face and content validity
2) Concurrent and predictive validity
3) Construct validity

In this research, this research had used content and item validity to find out the validity of instrument. Where, the test consists of 40 multiple choices tests that will be divided into two groups. They are 20 for pre-test and 20 for post-test.

To know the validity of the each question will be refer to list *r* biserial with r_t *in 5% significant*: 0, 361 and 1% significant: 0, 463. So, if $r_{account} > r_{table}$ the test is classified valid.

To get the validity of the test, the formula of *r pointbiserial* can be used as follow:

[38]L.R. Gay and Peter Airasian, *Educational Research* ....., p. 161

[39]Ranjit Kumar, *Research Methodology*, Third Edition, (London: SAGE Publication, Inc., 2011).p,179

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

Where:

r_{pbi} : coefficient item validity
M_p : mean score of the total sore
SD_t : Standard Deviation of the total score
p : Presentation of the right answer of the item tested validity.
q : presentation of the wrong answer of the item tested validity.

b. Reliability

Reliability is the degree of accuracy or precision in the measurements made by a research instrument.[40] To get the reliability of the test, SuharsimiArikunto said that to obtain the reliability of the test, the researcher uses formula K-R 20.[41]

The formula:

$$R_{11} = \left(\frac{n}{n-1}\right)\left(\frac{S_{t2} - \sum pq}{S_{t^2}}\right)$$

Where:
R_{11} : Reliability of the Instrument
N : Total of Question
St^2 : Variants Total
P : Proporsi Subject who is right Answer(1) / N
Q : Proporsi Subject who is Wrong Answer (0).[42] / N

[40]Ranjit Kumar, *Research Methodology*….p.181
[41]SuharsimiArikunto, *ProsedurPenelitian*, p. 188.
[42]SuharsimiArikunto*ProsedurPenelitian*,...p. 188.

Reliability is a good character of the test that refers to the consistency of the measurement. The test is reliable $r_{count} > r_{table}$ by using formulation KR-20 with r_{table} 0.70.

Criteria of test reliability is as follows:[43]

r_{11} = 0, 70 high correlation (reliable)

r_{11}> 0,70 high correlation (reliable)

r_{11}< 0,70 low correlation (un- reliable)[44]

F. Procedures of Data Collection

To collect the data, the researcher hadused test. In giving the test, it was divided into two kinds; pre-test and post-test.

a. Pre-test

It is a test that is given before doing the treatment to the students. It is needed to know the students' ability in experiment and control class before the researcher gives the treatment to experiment class. It is also used to find out the homogeneity and normality level of the sample. The researcher used some steps in giving pre-test. They were:

[43] Anas Sudijono, *Pengantar Statistik Pendidikan*. (Jakarta: PT. Raja Grafindo Persada. 2005),p, 209

[44] Anas Sudijono *Penganta rStatistik….*p 209

1) This research prepares the test that will be fills by the students. It consists of 50 questions.
2) This research distributes the test paper to both class; experiment and control class.
3) This research explains what the students need to do.
4) This research gives the times to the students to answer the questions.
5) This research collects the test paper.
6) This research checks the answer and counts the students' score.

b. Treatment

In the treatment, this research did the different way in teaching reading comprehension between experimental and control class. Treatment would be given to experimental class by using semantic mapping. Treatment was did after validity.

c. Post-test

It is a test that is given after the researcher gives the treatment to experiment class. It is use to know the difference score of experiment and control class and the effect of treatment, whether it has an effect or not. This research use some steps in giving post-test. They were:

7) This research prepares the test that will be fills by the students. It consists of 50 questions.
8) This research distributes the test paper to both class; experiment and control class.

9) This research explains what the students need to do.

10) This research gives the times to the students to answer the questions.

11) This research collects the test paper.

12) This research checks the answer and counts the students' score.

G. Technique of Analyzing Data

The techniques of analyzing data that use by the researcher are:

a. Requirement test

1) Normality test

To know the normality, the researcher use *Chi-Quadrate* formula. The formula is 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.

2) Homogeneity Test

To find the homogeneity, the researcher use *Harley test*. The formula is as follow:

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

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

Hypotheses is rejected if $F_{(count)} \geq F_{(table)}$.[45]

3). Hypothesis testHypothesis is the provisional result of the research. So, the researcher needs to analyze the data which have been divided into two groups: experiment class and control class.

[45]Agus Irianto. *Statistik Konsep Dasar,* ....p. 276.

Before analyze the data to find the hypothesis, the researcher will calculate the normality and homogeneity of the post-test. It is use to know whether the data is normal and homogenous or not. If the data is normal and homogenous, the formula that must be used to test hypothesis is t-test but if the data is not normal and homogenous, the formula that must be used to test hypothesis is Chi-Quadrate. Because the result of post-test in this research was normal and homogenous, the data had been analyzed by using *t-test* formula. The formula is as follow:

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

Where:

t	:	the value which the statistical significance
$\overline{X}_1$	:	the average score of the experimental class
$\overline{X}_2$	:	the average score of the control class
s_1^2	:	deviation of the experimental class
s_2^2	:	deviation of the control class
n_1	:	number of experimental
n_2	:	number of control class[46]

[46]Sugiyono, *Statistika untuk Penelitian*, (Bandung: ALFABETA, 2006), p. 135

CHAPTER IV

THE RESEARCH RESULT

To analyze the data, the researcher has collected data through pre test and post test in the both classes, experimental class and control class. To find out the effect of semantic mapping on students reading comprehension, the researcher has calculated the data by using quantitative analysis. The researcher used the formulation of t-test to test the hypothesis. Next, the researcher described the data as follow:

A. Description of Data

1. Description of Data before Using Semantic Mapping

a. Pre-test Score of Experimental Class

Based on students' answers in pre-test the researcher has calculated the students' score in appendix 20 and 21. Then, the researcher drawn the table sum in the following:

Table 6
Descriptive Statistics

Total	1428
Highest score	78
Lowest score	34
Mean	58.62
Median	60.5
Modus	65
Range	44
Interval	9
Standard deviation	11.74
Variant	153.13

Based on the table above the total score of experimental class in pre-test was 1428, mean was 58.62, median was 60.5,modus was 65, range was 44, interval was 9, standard deviation was 11.74, and variant was 153.13. The researcher got the highest score was 78 and the lowest score was 34. Then, the calculation of the frequency distribution of the students' score in experimental class can be applied into table frequency distribution as follow:

Table 7
Frequency Distribution of Experimental Class (Pre-test)

No	Interval	Mid Point	F	Percentages
1	34 – 42	38	3	12.5%
2	43 – 51	47	4	16.67%
3	52 – 60	56	5	20.83%
4	61 – 69	65	7	29.17%
5	70 – 78	74	5	20.83%
i=9		-	24	100%

From the table above, it can be concluded that the most students are in interval 61 – 69 (7 students/29.17%). The least of students is 34 – 42 (3 students/12.5%). Clear description of the data is presented in histogram on the following figure:

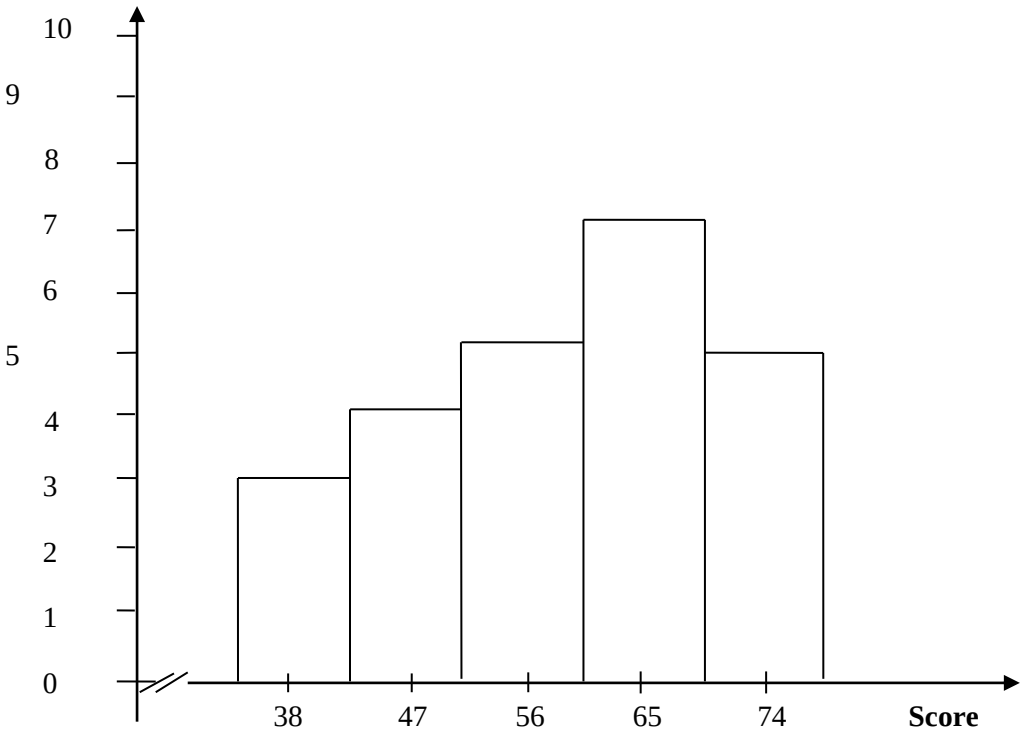


Figure 4: Description of Experimental Class (Pre Test**)**

Based on the figure above, the frequency of students' score from 34 up to 42 was 3; 43 up to 51 was 4; 52 up to 60 was 5; 61 up to 69 was 7; 70 up to 78 was 5.The histogram shows that the highest interval (61-69) was 5 students, and the lowest interval (34-42) was 3 students.

b. Score of Pre-Test Control Class

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

Table 8
Descriptive Statistics

Total	1484
Highest score	80
Lowest score	36
Mean	60.62
Median	60.49
Modus	59.44
Range	44
Interval	9
Standard deviation	10.21
Variant	126.23

Based on the table above the total score of control class in pre-test was 1484, mean was 60.62, standard deviation was 10.21, variant was 126.23, range was 44, interval was 9, median was 60.49,and modus was 59.44. The researcher got the highest score was 80 and the lowest score was 36. It can be seen on appendix 17. Then, the computed of the frequency distribution of the students' score of control class can be applied into table frequency distribution as follow:

Table 9
Frequency Distribution of Control Class (Pre-Test)

No	Interval	Mid Point	Frequency	Percentages
1	36 – 44	40	2	8.33%
2	45 – 53	49	3	12.5%
3	54 – 62	58	9	37.5%
4	63 – 71	67	6	25%
5	72 – 80	76	4	16.67%
$i = 9$		-	24	100%

From the table above, it can be concluded that the middleinterval (54 – 62) had the biggest frequency (9 students/37.5%). The highest

interval (72 – 80) had 4 students and the lowest interval was28-36with 2students.

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

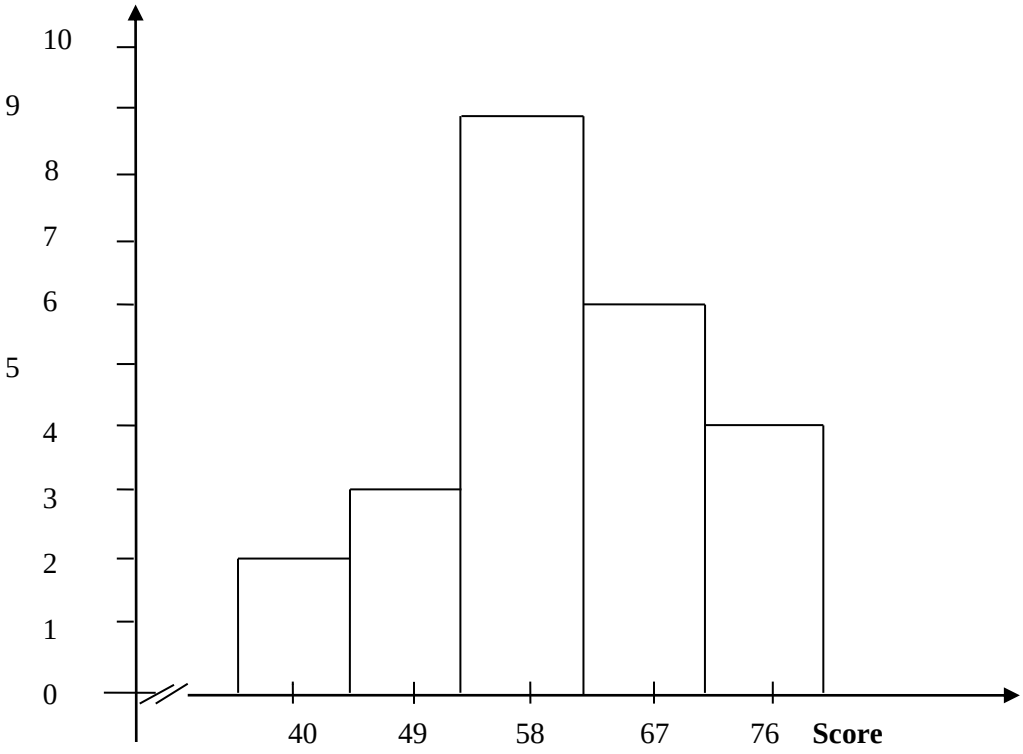


Figure 5: Description of Control Class (Pre-Test**)**

Based on the figure above, the frequency of students' score from 36 up to 44 was 2; 45 up to 53 was 3; 54 up to 62 was 9; 63 up to 71 was 6; 72 up to 80 was 4.

2. Description of Data After Using Semantic Mapping

a. Score of Post-Test Experimental Class

The calculation of the result that had been gotten by the students in answering the question (test) after the researcher did the treatment by using Semantic Mapping can be seen in the following table:

Table 10
Descriptive Statistics

Total	1960
Highest score	96
Lowest score	62
Mean	81.91
Median	81.66
Modus	80.75
Range	34
Interval	7
Standard deviation	7.25
Variant	59.62

Based on the above table the total score of experiment class in post-test was1960, mean was 81.91, standard deviation was 7.25, variant was 59.62, median was81.66, range was34, modus was 80.75, and interval was 7. The students' highest score was 96 and the lowest score was 62. It can be seen on appendix 20. Then, the calculation of the frequency distribution of the students' score of experiment class can be applied into table frequency distribution as follow:

Table 11
Frequency Distribution of Students' Score

No	Interval	Mid Point	Frequency	Percentages
1	62 – 68	65	1	4.16%
2	69 – 75	72	3	12.5%

3	76 – 82	79	9	37.5%
4	83 – 89	86	7	29.17%
5	90 – 96	93	4	16.67%
i = 7		-	24	100%

The researcher presents them in histogram as follow:

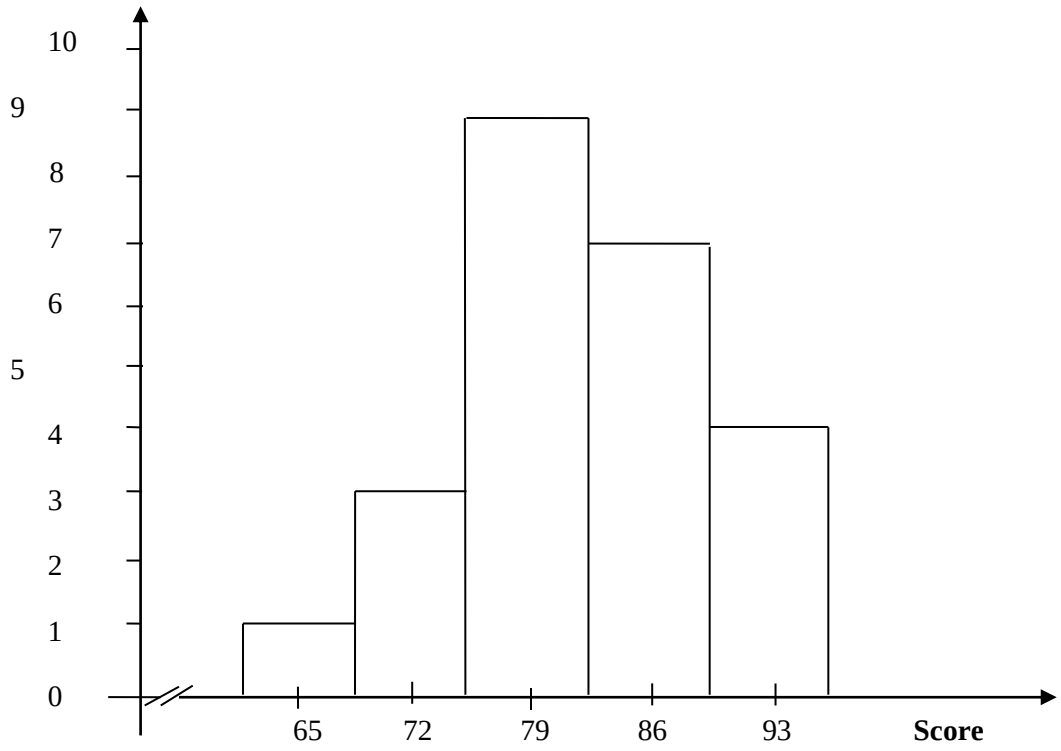


Figure 6: Description of Experimental Class (Post Test)

Based on the figure above, the frequency of students' score from 62up to 68 was 1; 69 up to 75 was 3; 76 up to 82 was 9; 83 up to 89 was 7; 90 up to 96 was 4. Then, the interval which had highest frequency was 76– 82 and the intervalwhich had lowest frequency was 62 – 68 (the lowest interval).

b. Score of Post-Test Control Class

As the control class, the researcher took class VIII-B. The result that had been gotten by the students in answering the question (test) after the researcher taught the reading comprehension by using conventional strategy can be seen in the following table:

Table 12
Descriptive Statistics

Total	1724
Highest score	88
Lowest score	54
Mean	71.87
Median	71.26
Modus	70.81
Range	34
Interval	7
Standard deviation	6.79
Variant	64.31

Based on the above table the total score of control class in post-test was 1724, mean was 71.87, standard deviation was 6.79, variant was 64.31, median was 71.26, range was 34, modus was 70.81, and interval was 7. The researcher got the highest score was 88 and the lowest score was 54. It can be seen on appendix 20. Then, the computed of the frequency distribution of the students' score of control class can be applied into table frequency distribution as follow:

Table 13
Frequency Distribution of Students' Score

No	Interval	Mid Point	Frequency	Percentages
1	54 – 60	57	1	4.17%
2	61 – 67	64	4	16.67%

3	68 – 74	71	13	54.16%
4	75 – 81	78	3	12.5%
5	82 – 88	85	3	12.5%
i = 7		-	24	100%

For the clear description of the data, the researcher presents them in histogram on the following figure:

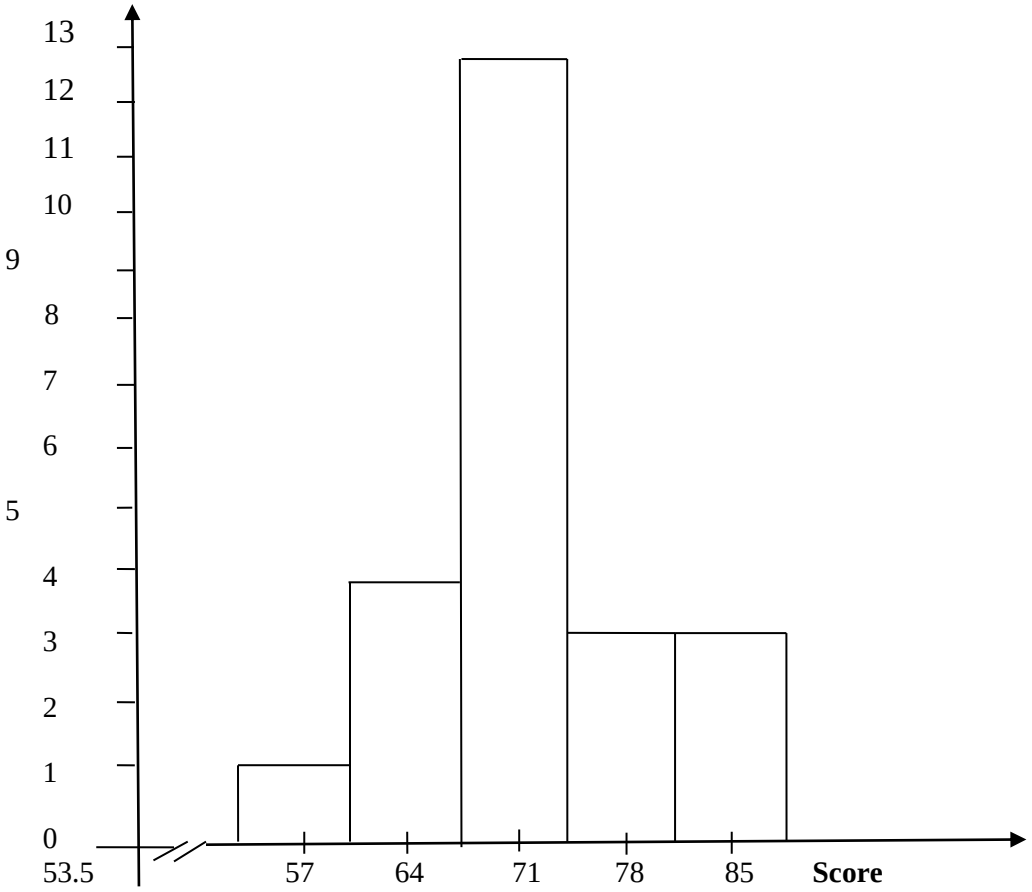


Figure 7: Description of Control Class (Post-Test)

Based on the figure above, the frequency of students' score from 54 up to 60 was 1; 61 up to 67 was 4; 68 up to 74 was 13 ; 75 up to 81 was 3; 82 up to 88 was 3. Then, the interval which had highest frequency was

68 – 74(13 students) and the interval which had lowest frequency was 54 – 60 (1 students).

B. Data Analysis

1. Requirement Test

a. Normality and Homogeneity of Experimental and Control Class in Pre-Test

Table 14
Normality and Homogeneity in Pre-Test

Class	Normality Test		Homogeneity Test	
	t_{count}	t_{table}	f_{count}	f_{table}
Experimental Class	3.015	9.488	1.21<2.02	
Control Class	7.636	9.488		

Based on the table above, the score of experiment class Lo = 3.015< Lt = 9.488 with n = 24 and control class Lo = 7.636< Lt = 9.488with n = 24, and real level α 0.05. Cause Lo< Lt in the both class. So, H_a was accepted. It means that experiment class and control class were distributed normal. It can be seen in appendix 21.

The coefficient of F_{count}= 1.21 was compared with F_{table}. Where F_{table} was determined at real α 0.05, and the different numerator dk = N-1 = 24-1 = 23 and denominator dk N-1 = 24–1 = 23. So, by using the list of critical value at F distribution is got F0.05=2.02. It showed that F_{count} 1.21 <F_{table}.2.02. It shows that both experimental and control class were homogeneous.The calculation can be seen on the appendix 21.

b. Normality and Homogeneity of Experimental and Control Class in Post-Test

Table 15
Normality and Homogeneity in Post-Test

Class	Normality Test		Homogeneity Test	
	t_{count}	t_{table}	F_{count}	F_{table}
Experimental Class	8.763	9.488	1.25<2.02	
Control Class	7.042	9.488		

The previous table shows that the score of experimental class Lo = 8.763< Lt = 9.488 with n = 24 and control class Lo = 7.042< Lt = 9.488 with n = 24, and real level α 0.05. Because Lo< Lt in the both class, it means H_a was accepted. It meant that experiment class and control class were distributed normal. The calculation can be seen in appendix 21.

The coefficient of F_{count}= 1.25 was compared with F_{table}. Where F_{table} was determined at real α 0.05, and the different numerator dk = N-1 = 24-1 = 23 and denominator dk N-1 = 24-1 = 23. So, by using the list of critical value at F distribution is got $F_{\mathbf{0.05}}$ =2.02. It showed that F_{count} 1.25 <F_{table}2.02. So, the researcher concluded that the variant from the data of the students' reading comprehensionat SMP Negeri 1 Angkola Muaratais in experimental and control class was homogenous. The calculation can be seen on the appendix 24.

2. Hypothesis Test

After calculating the data of post-test, researcher has found that post-test result of experimental and control class is normal and homogenous. The data would be analyzed toprove the hypothesis. It used formula of t-test. Hypothesis of the research was "Semantic Mapping" has significant effect toward Reading Comprehension at grade VIII students of SMPN 1 AngkolaMuaratais". The calculation can be seen on the appendix 25. The result of t-test was as follow:

Table 16
Result of T-test from the Both Averages

Pre-test		**Post-test**	
t_{count}	t_{table}	t_{count}	t_{table}
-0.59	2.021	4.462	2.021

The test hypothesis have two criteria. First, if $t_{count}<t_{table}$,H_0 is accepted. Second, $t_{count}>t_{table,}$ H_a is accepted. Based on researcher calculation in pre test, researcher found that t_{count} -0.59 while t_{table}2.021 with opportunity $(1 -\alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 24 + 24 - 2 = 46$. Cause $t_{count}<t_{table}$(-0.59<2.021), it means that hypothesis H_a was rejected and H_0 was accepted. So, in pre test, the two classes were same. There is no difference in the both classes. But, in post test, researcher found that t_{count}4.462 while t_{table}2.021 with opportunity $(1 -\alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 24 + 24 - 2 = 46$. Cause $t_{count}>t_{table}$(4.376 >2.021), it means that hypothesis H_a was

accepted and H_0 was rejected. So, there was the significant effect of Semantic Mapping on Students Reading Comprehension at Grade VIII SMP N 1 AngkolaMuaratais. In this case, the mean score of experimental class by using Semantic Mappingwas 81.91 and mean score of control class was 71.87 that was taught by using conventional strategy. The calculation can be seen on the appendix 25 and 26. The gain score was 12.17. the calculation can be seen on the appndix 29.

C. Discussion

There are some related findings related to this research. The first is Nur Shobika from Universitas Muhammadiyah Gresikhave done research by title "The Effect of Cooperative Script In Teaching Reading Comprehension For The Eighth Grade Students at SMP N 1 Sidayu Gresik". The Concluding of her research, there was the significant effect of using cooperative script on students' reading comprehension.It was proven from students' score in post-test scores both experimental and control group that the mean score of students in the experimental group. The researcher found that the mean score of pre-test of the experimental group was 47.7 and the mean score of post-test was 79 with t_0 was 5.48 and t_t was 1.67 (t_0 is higher than t_t, 5.48 > 1.67).[47]

[47]Nur Shobikh, *The Effect of Cooperative Script In Teaching Reading Comprehension For The Eighth Grade Students* at SMP N 1 Sidayu Gresik. retrieved from *http://digilib.umg.ac.id/gdl.php?mod=browse&op=read&id=jipptumg--nurshobikh-1158*.,on November 5th.2015 at 04.00 p.m.

The second is PutriZikoMamura, "The Use of Semantic Mapping to Improve Vocabulary Mastery of The Fourth Grade Students' of SD MuhammadiyahNgijon 1 in The Academic Year 2009/2010" (State University of Yogyakarta, 2011), http://eprints.uny.ac.id. The Fourth is PutriZikoMamura's "The Use of Semantic Mapping to Improve Vocabulary Mastery of The Fourth Grade Students of SD Muhammadiyah Ngijon 1 in The Academic Year of 2009/2010". She concluded that the different result of students' vocabulary mastery. It is because the students' average scores of the post test after giving treatment increase 1,0517 from the students' average scores of the pre-test before giving the treatment.[48]

The third is from Nidajumaliana "The influence of using of Semantic Mapping on the students understanding in Reading Ability at the Eight Grade Students of SMP N 1 KadipatenMajalengka". The result of comparison between the students' understanding in reading ability before and after using of Semantic mapping is using pre-tet and post-test, the score are 69.3 and 75.2. So there is significant influence of using of Semantic mapping on the students

[48]Putri Ziko Mamura, *"The Use of Semantic Mapping to Improve Vocabulary Mastery of The Fourth Grade Students*' of SD Muhammadiyah Ngijon 1 in The Academic Year 2009/2010" (State University of Yogyakarta, 2011), http://eprints.uny.ac.id.

understanding in reading ability at the eighth grade students of SMP N 1 KadipatenMajalengka54.[49]

Based on explanation above, the researcher found the similarity with the other researcher and theory which is related to semantic mapping technique. Eventhough it was not a high difference, the result prove that t_0 was higher than t_t. $t_0$was 4.462 and t_t was 0.021 (4.462>0.021). It means that there was a significant effect of semantic mappingstrategy reading comprehensionsat grade VIII of SMP N 1Angkola Muaratais.

[49] Nida Jumaliana, "The Influence of Using of Semantic Mapping OnThe Students Understanding in Reading Ability at The Eight Grade Students of SMP N 1 Kadipaten Majalengka" (Syekh Nurjati State Institute For Isamic Students, n.d.)

D. Limitation of the Research

The research was limited in some situations. It was the problems in the class that appeared during doing the research, but the researcher couldn't hold or improve those things. The limitation of the research was as follow:

1. The researcher was not sure whether all of students in the experimental class and control class did the test honestly. There was a possibility that some of them answered the test by copying or imitating their chairmates' answer.
2. It was also a possibility that some of students were not too serious in answering the pre-test and post-test. It may caused by the test, because they knew before that the test would not influence their score in school. It made them answer the test without thinking hard and the answer of the test was not pure because they did not do it seriously.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

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

1. The students' Reading Comprehension before using Before using Semantic Mapping at grade VIII of SMP N 1 Angkola Muaratais was under standardization mark. Before using Semantic Mapping, the mean score of experimental class was 58.62 and the mean score of control class was 60.62. Both of the scores were low, where the standardization mark is 75.
2. After using Semantic Mapping strategy, the mean score of experimental class was 81.91 and the mean score of control class 71.87. The score of experimental was high and the score of control class was medium. There were increasing in students' score in the both classes if it was compared with the result of pre-test. The score of experimental class was above the standardization mark of English.
3. The result of research showed that the students'score in the experimental class was higher than control class. Eventhough it was not a high difference, the result prove that t_0 was higher than t_t. $t_0$was 4.462 and t_t was 0.021 (4.462>0.021). It means that there was a significant effect of semantic mapping strategy reading comprehensions at grade VIII of SMP N 1 Angkola Muaratais. So, the hypothesis was accepted.

B. Suggestion

After finishing the research, the reseracher got many informations in English teaching and learning.Therefore, from that experience, the researcher saw some things need to be improved.It makes the researcher give some suggestions, as follow:

4. For headmaster of SMPN 1 Angkola Muaratais as information to improve the quality students of english education.
5. The result of this research was expected to be useful for the English teachers in SMPN I Angkola Muaratais their information or their source in teaching reading. This research is also expected to be able to become a motivation for the teacher to always make an interesting and fun strategy in teaching reading.
6. The result of this research was expected to enhances the knowledge of the reader as the reading materials for students.

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Appendix 1

RENCANA PELAKSANAAN PEMBELAJARAN
MATA PELAJARAN BAHASA INGGRIS

Nama sekolah : SMP N 1 ANGKOLA MUARATAIS
Mata Pelajaran : Bahasa Inggris
Waktu : 2 X 45 Menit
Kelas / semester : VIII / 2
Skill : Membaca (Reading)
Jenis teks : Descriptive

Standar Kompetensi

1. Memahami makna teks sederhanaberbentuk descriptive text.

Kompetensi Dasar

1.1 Meresponberbagaiinformasidanmaknadalam text tertulissecaraakuaratdanberterima yang berkaitandenganmenggambarkansuatubendaatau orang
1.2 Meresponmaknadanlangkahretorikadalamteksdeskriptive

Indikator

1. Siswamengidentifikasi topic of the text
2. Siswamengidentifikasi main idea of the text
3. Siswamengidentifikasispecific information in the text
4. Siswamengidentifikasimeaning of underlining word.

Tujuan Pembelajarn

Di akhir pembelajaran siswa dapat :

1. siswamampumengidentifikasi topic of the text
2. siswamampumengidentifikasi main idea of the text
3. siswamampumengidentifikasispecific information in the text
4. siswamampumengidentifikasi characteristic of people or thing from the text
5. siswamampumengidentifikasimeaning of underlining wor

Materi Pembelajaran

- descriptive text

Teaching Strategies

- semantic mapping

Media Pembelajaran

- Gambar
- whiteboard

Langkah - Langkah Pembelajaran

III. **Kegiatan Penutup**

1. Siswa diminta mempelajari rencana materi pembelajaran pada pertemuan berikutnya.
2. Siswa diminta mengerjakan tugas individu tentang descriptive text dengan bentuk peta semantik sebagai tugas rumah.

SUMBER BELAJAR

- Buku
- Buku developing English competencies
- internet

Teacing Reading Comprehension by Using Semantic Mapping

	Teacher activities	Procedure of semantic mapping	Students activities
1.Pre Teaching	5. Teacher give salam (greeting) 6. Teacher ask student to pray. 7. Teacher give motivation 8. Teacher give illustration about topic		1. Student answer salam 2. Students responding to the teacher 3. Students pray 4. Students answer Present and not present 5. Students listening to teacher 6. Student see and focus to the teacher

2 .While T eaching	1.The teacher explained about the descriptive text to the students. 2. The teacher introduced the semantic mapping strategy to the students.		2.Students pay attention to the 2.Teacher explanation 3.Student ask about descriptive text 2.Students pay attention to the teacher explanation
			3.
	2. The teacher started applying the procedures of semantic mapping strategy	1. Understanding of the Topic is an activity done by the students before they read the text.	2.The students draw a large oval on the paper 2.Studentswrite inside the topic.
	1. Teacher gives a topic to be discussed and announced the topic of the text by drawing a large oval on the whiteboardand then wrote the topic inside of it.	2. BrainstormingInt his activity the students try to think of the ideas	1. Students try to think of the ideas 2. Students provide information they know about the topic. 3.Students write down importantinformation . 4. Students to start read descriptive text.
	1. The teacher asked the students to read the descriptive text.	3. Personalizing the map it is the major activity.	5. Students are to the think of the other words that come to mind when they read the key words of the topic.

			6. Students to write down a list of these words to be shared with the class 1. The students were asked to answer the
	1. The teacher asked the students to answer the questions based on the text. The semantic map they just drew can be helpful for them to find the answer faster.		questions based on the text.
3 .Post Teaching	3. Teacher make a Learning summary And conclusion 4. Praying at the end of learning		1.Students repeat write remember the learning 2.Students praying to end of learning

PENILAIAN

B Pedoman Penilaian

1. Reading Scores (setiap jawaban benar mendapat skor 2 : skor maksimum 100)

NO	NAMA SISWA	ASPEK DAN SKOR ENILAIAN			
		Excellent (90-100)	Very Good (81-90)	Good (71-80)	Fair (61-70)
1					
2					
3					
4					
5					
6					
7					
9					
10					

Bentuk

- **multiple choice**

....., ...2021

Mengetahui
Guru Mata Pelajaran

Nurlan Waruwu Sp.d
NIP.196508261990032004

Peneliti

Isra soliyah siregar
Nim. 14 203 00055

Appendix 2

Control Class

RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

Nama sekolah : SMP N 1 ANGKOLA MUARATAIS
Mata Pelajaran : Bahasa Inggris
Waktu : 2 X 45 Menit
Kelas / semester : VIII / 2
Skill : Membaca (Reading)
Jenis teks : Descriptive

Standar Kompetensi

1. Memahami makna teks sederhana berbentuk descriptive text.

Kompetensi Dasar

1.3 merespon berbagai informasi dan makna dalam text tertulis secara akuarat dan berterima yang berkaitan dengan menggambarkan suatu benda atau orang

1.4 merespon makna dan langkah retorika dalam teks deskriptive

Indikator

5. siswa mengidentifikasi topic of the text
6. siswa mengidentifikasi main idea of the text
7. siswa mengidentifikasi specific information in the text
8. siswa mengidentifikasi characteristic of people or thing from the text
9. siswa mengidentifikasi meaning of underlining word.

Tujuan Pembelajarn

Di akhir pembelajaran siswa dapat :

6. siswa mampu mengidentifikasi topic of the text
7. siswa mampu mengidentifikasi main idea of the text
8. siswa mampu mengidentifikasi specific information in the text
9. siswa mampu mengidentifikasi characteristic of people or thing from the text
10. siswa mampu mengidentifikasi meaning of underlining word

Materi Pembelajaran

- descriptive text

Langkah-langkah Pembelajaran

Pendahuluan

1. Guru memasuki kelas dengan mengucapkan salam dan menyapa siswa
2. Guru meminta siswa untuk membuka kelas dengan berdo'a.
3. Guru mengabsen siswa.
4. Guru menjelaskan secara ringkas tentang materi yang akan dipelajari.

Kegiatan inti

1. Guru menjelaskan tentang descriptive text dan mengidentifikasinya
2. Guru memberikan contoh *descriptive text*
3. Guru meminta siswa untuk memahami contoh dari descriptive text tersebut.
4. Guru memberikan latihan kepada siswa tentang descriptive text.

Penutup

1. Guru membuat kesimpulan pelajaran.
2. Guru meminta siswa mengkahiri kelas dengan berdo'a.
3. Salam

SUMBER BELAJAR

- Buku
- Buku developing English competencies
- internet

Pedoman Penilaian

1. Reading Scores (setiap jawaban benar mendapat skor 20 : skor maksimum 100)

NO	NAMA SISWA	ASPEK DAN SKOR ENILAIAN			
		Excellent (90-100)	Very Good (81-90)	Good (71-80)	Fair (61-70)

1					
2					
3					
4					
5					
6					
7					
9					
10					

Padangsidimpuan,

2021

Mengetahui
Guru Mata Pelajaran

Nurlan Waruwu S.Pd
196508261990032004

Peneliti

Isra soliyah siregar
Nim. 14 203 00055

Appendix 4

Instrument for Post-test

Name :

Class :

Instruction :

1. Tulis nama, kelas pada lembar jawaban yang tersedia
2. Jawablah pertanyaan-pertanyaan di bawah ini
3. Bacalah pertanyaan dengan benar dan teliti
4. Pilihlah jawaban yang benar dengan memberi tanda silang (X) pada salah satu jawaban
5. Periksalah jawaban anda dengan teliti sebelum dikumpulkan kepada guru
6. Test ini hanya bertujuan untuk mengetahui data-data siswa tentang pemahaman menghapal kosakata dan melatih berbicara
7. Waktu yang tersedia 45 menit

Instruction: choose the correct answer by crossing (X) a, b, c, or d!

Read the following of the text to answer question number 1 to 7

Niagara Falls is a famous area of waterfalls. It is one of the most beautiful natural wonders on North America. It is on Niagara River, about halfway between lake Erie and Lake Ontario. The Niagara River forms part of the border between Canada and the United States. At Niagara Falls, Ontario, Canada is on one side of the river, and the U.S. state of New York is on the other side. Niagara Falls really has two waterfalls. The horseshoe Falls are in Canada, and the American Falls in the United states.

The Niagara River drops into a steep gorge or canyon, at the falls. Most of the water flows over the Horseshoe Falls. They are not as high as the American Falls, but they are 2,600 feet (792 meters) wide-about 0.5 mile (0.8 kilometer). The American Falls are about 1,000 feet (305 meters) wide. Beyond the falls are Whirlpool Rapids. There, the powerful swirling water has carved a bowl out of the rock.

At night, colored lights shine on the thundering falls. In fact, there is about 10 milion people visit there each year. Therefore, we must keep Niagara falls because it is one of the heritages of word.

5. What is the text about?
   a. Niagara falls
   b. American
   c. Whirpool
   d. Lake Ontario

6. What is main idea of the first paragraph?
   a. The Horseshoe falls are in Canada, and the American falls are in the united States
   b. in fact, there is about 10 million people visit Niagara Falls each year
   c. Niagara Falls is a famous area of waterfalls
   d. Most of the water flows over the Horseshoe Falls

7. Where is Niagara Falls located?
   a. North America
   b. Lombok
   c. Canada
   d. Paris

8. The word ***Famous*** in line I first paragraph can be replaced by…..

a. Scarce
b. Popular
c. Run
d. Continuously

9. What is the last paragraph about?
   a. Persuade to keep Niagara falls
   b. Persuade for visiting Niagara falls every years
   c. Persuade to see colored light shine on the thundering falls
   d. Persuade for traveling to American

10. What is main idea of the second paragraph?
    a. The Niagara River drops into to steep gorge and canyon, at the falls
    b. The American falls are about 1,000 feet (305 meters) wide
    c. Niagara Falls really has two water falls
    d. There, the powerful swirling water has carved a bowl out of the rock

11. According to the text, which the text about is NOT true?
    a. There is about 10 million people visit Niagara Falls each year
    b. Niagara falls is on the Niagara River, about halfway between Lake Erie and Lake Ontario
    c. The American Falls are about 1,500 feet (350 meters) wide
    d. At Niagara Falls, Ontario, Canada is on one side of the river

Text for number 8-11

I have a pet. It is a rabbit. Its name is Milky.

I call it Milky because it has white and long fur, from head to toe. Milky is Jersey Wolly breed. Its body is small with black short ears. I got Milky last year from my uncle as a birthday gift. Milky has just born back then. Milky likes to eat bread so much. It doesn't really like vegetables.

Milky is very gentle. It never bites or kicks. I like to cuddle and play with Milky.

8. What does the text mostly tell us about?

   a. The writer's rabbit pet
   b. Kinds of rabbit breed
   c. MIlky's physical description
   d. Rabbit as a pet

9. Why is the pet being called Milky?
   a. It is a Jersey Wooly breed
   b. It has a small body
   c. It has white ears
   d. It has white fur

10. How old is the writer's rabbit pet?
    a. 1 month old
    b. 2 months old
    c. 1 year old
    d. 2 years old

11. Milky is very <u>gentle</u>.
    The underlined word can be replaced by .....
    a. Strong
    b. Calm

c. Brave
d. Kind

Text for number 12-15

Today, my aunt comes to visit our house. She's my favorite aunt. Her name is Isma.

She's very beautiful. Her height is 168 cm with weight 52 kg. Her skin is fair. She has black and round eyes. Her nose is sharp. She has long wavy hair.

My aunt is a Science teacher in Junior High School. Her students like her so much because she is kind and friendly. She is patient too. She doesn't get angry even if her students are naughty. She is also well loved by our family members. I always wait for her visit to my house.

12. What is the topic of the text?
    a. A Science Teacher
    b. Beautiful aunt
    c. Isma's aunt
    d. Writer's favorite aunt

13. The last paragraph mostly talks about .....
    a. The writer's aunt in general
    b. The writer's aunt's physical description
    c. The writer's aunt's characteristics
    d. The visit of writer's aunt

14. How is the writer's aunt's build?
    a. Tall and slim
    b. Short and slim
    c. Tall and fat
    d. Short and thin

15. Why do Aunt Isma's students like her?
    a. Because she's kind and friendly
    b. Because she's beautiful
    c. Because she teaches science
    d. Because she's smart and patient

Read the following text to answer question number 16 to 19

Fruits are a source of nourishing substances that keep us alive and healthy. For example, they contain many vitamins, especially vitamins A and C, and many minerals, such as calcium, potassium, and zinc. They also provide fiber for a healthy digestive system and carbohydrates that the body needs to make energy. They don't have a lot of calories to make us fat.

People use fruits for many things. We make juices from them. We cook bread and pie with them. We make jams, jellies and sweets. We freeze them to eat later. We even make alcohol fro fruit. Beer comes from grains, wine comes from grapes, and some brandies are made from plums, apricots, or other fruits. But most of the time, we don,t do anything special with fruits. We eat them fresh, just as they are!

16. What is the text about?
    a. Vitamins
    b. Energy
    c. Fruits
    d. Minerals

17. What is the main idea of the first paragraph?
    a) We make juice from fruits
    b) Fruits are a source of nourishing substances that keep us alive and healthy
    c) Some beer and brandies are made of fruits
    d) We freeze fruits to eat whenever we need later
    e)

18. What is the benefit of fruits from the second paragraph?
    a. To make fat
    b. To make jams, jellies and sweets
    c. To make red eyes
    d. To make yellow teeth

19. What is the characteristic of good fruit?
    a. Contain many vitamins
    b. Contain larva
    c. Contain alcohol
    d. Contain bad color

Text for number 20-23

Mount Bromo

Indonesia sits on the Ring of Fire, an area with some of the most active volcanoes in the world. Many of the country's volcanoes, such as Mount Merapi, are famous for their violent eruptions and their stunning, but dangerous beauty. Mount Bromo is among the best known, thanks largely to its incredible views, particularly when seen standing over the caldera at sunrise. Bromo's peak was blown off in an eruption, and you can still see white smoke spewing from the mountain. The volcano is part of Bromo Tengger Semeru National Park, which also includes Mount Semeru, the highest peak in Java. The park is home to the Tengger people, isolated ethnic groups who trace their ancestry back to the ancient Majapahit Empire.

20. The text is written to .....
    a. To tell the readers about Mount Bromo
    b. To describe about The Ring of Fire
    c. To explain about Bromo Tengger Semeru National Park
    d. To promote beautiful mountain in Indonesia

21. Why does Mount Bromo wellknown?
    a. It has ancient group of people
    b. It has incredible view
    c. It is on The Ring of Fire
    d. It is a part of Bromo Tengger Semeru National Park?

22. Who are Tengger people?
    a. Isolated ethnic group in Bromo Tengger Semeru National Park
    b. All people in Mount Bromo
    c. People who live in The Ring of Fire
    d. People of Majapahit Empire

23. "Bromo's peak was ***blown off*** in an eruption, and you can still see white smoke spewing from the mountain."The underlined word has closest meaning with .....
    a. Burning
    b. Splitting
    c. Erupting
    d. Absorbing

Read the following text to answer question number 24 to 30

The nations monument is a 132 meters tower in the center of Merdeka Square, central Jakarta. It symbolizes the fight for Indonesia's independence. The monument consists of a 117.7 m obelisk on a 45 m square platform at a height of 17 m.

The towering monument symbolizes the ohilosophy of lingga and Yoni. Lingga resembles, rice pestle (alu) and yoni resembles mortar rice (lesung),to importans items in Indonesian agricultural tradition.

The construction began in 1961 under the direction of president soekarno and the monument was opened to the public in 1975. It is topped by a flame covered with gold foil. The monument and museum is opened daily from 08.00-15.00 everday throughout the week, except for the last Monday of the month the monument is closed.

24. What is the second paragraph about?
    a. The towering monument
    b. The museums
    c. President soekarno
    d. Merdeka square

25. What is main idea of the second paragraph?
    a. The National Monument is a 132 meters tower in the center of the Merrdeka square, Central jakarta
    b. The National Monument is located in central java
    c. The towering monument symbolizes the philosophy of Lingga and Yoni
    d. The lion wanted to eat the fox

26. What is the second paragraph about?
    a. The towering monument
    b. The museums
    c. President soekarno
    d. Merdeka square

27. What day the national monument is closed?
    a. Saturday
    b. Sunday
    c. Monday
    d. In afternoon

28. How many meters the national monument of square platform?
    a. 117.7 m
    b. 117.6 m
    c. 117.5 m
    d. 117.4 m

29. What is the main idea in the last paragraph?
    a. Lingga resembles, rice pestle (alu) and Yoni resembles mortar rice (lesung), two important items in Indonesian agricultural tradition.
    b. The construction began in 1961 under the direction of the President Soekarno and the monument was opened to the public in 1975
    c. It is topped by flame covered with gold foil
    d. The monument consists of a 117.7 m obelisk on a 45 m square platform at a height of 17

30. For the last Monday of the month the monument…

a. Was closed
b. Is closed
c. Doesn't closed
d. Were closed

Read the following text to answer questions number 31 to 34

Peter is the youngest in our family. He is fourteen years old and four years younger than me.

Peter is the best. He has long straight hair, bright eyes and a friendly smile. Sometimes he is rather naughty at home, but he usually does what he is asked to do. Peter is interested in sports very much, and at school, he plays football and tennis. He is the best badminton player in our family and and peter's favorite sport is badminton.

31. What is the main idea of the first paragraph?
    e. Peter is the youngest child in his family
    f. Peter is the oldest in his family
    g. Peter is diligent in his family
    h. Peter is the stupid in his family

32. How is peter in his family?
    e. He is the best badminton player in his family
    f. He is the best cooker in his family
    g. He is the best dancer in his family
    h. He is the best singer in his family

33. What the characteristic of peter?
    a. He has long straight hair
    b. Curly hair
    c. Dark eyes
    d. Ignorant

34. "He is fourteen years old…Than *me*." The underlined word refers to?
    e. The writer
    f. The writer's brother
    g. The Peter
    h. writer's family

Text for number 35-39

The wonder boy, **Wayne Rooney** is a very popular footballer in the world. At the age of 16, Rooney was a top goal scorer for Everton. His first team.

Wayne Rooney was born on October 24th, 1985 I Liverpool. He is the son of a working class family. He grew up in Croxteth. He was brought up in a three bedroom house with his parents, Jeanette and Wayne had a drem. He wanted to be the best footballer. His family were Evert loversand Rooney's old bedroom window was filled with Everton Flags.

His debut in Everton Football Club was in August 2002. His first league goal came in October 2002 when he became the youngest goal scorerin the story of the premier League at at the age of 16 years. In 2004, he joined Manchester United. Nowdays he becomes the world's most expensive teenager football player.

35. What is the text mostly about?
    e. England football player

f. Wonder boys
g. Wayne Rooney
h. Top goal scorer

36. In what club did Wayne Rooney score his first goal ?
    a. Arsenal
    b. Manchester United
    c. Everton
    d. Liverpool
37. What is the main idea of paragraph one…?
    a. Rooney is very popular
    b. Rooney lives in simple family
    c. Rooney becomes the youngest footballer
    d. Rooney has been fan on Everton since he was young

38. "…He was brought up in a three bedroom house…".
The word **he** in this sentence refer to…

    a. Wayne Rooney
    b. Graham Rooney
    c. John Rooney
    d. Wayne's father

39. When did his first league goal come?
    a. October 1985
    b. August 2002
    c. September 2002
    d. October 2002

Read the following of the text to answer question number 40 to 42

Kuta Beach is a beautiful beach in a southern Bali. Its location is in Bandung Regency, 9 km from denpasar, the capital of Bali exactly near Bali's Ngurah Rai Airport. Kuta is one of the first towns with substantial tourist development and also remains one of Indonesia's majortourist destinations. Its long sandy beach is known internationally, with its varied accommodation, many restaurants and bar, and many renowned surfes.

It is also well-known as the right place for people to see scenic sunset in the afternoon. People who come to Bali will be very unlucky if they do not see the panoramic sunset in this town. It is real the tourists feel happy to be there. They can sunbathe, swim, surf, play soccer beach, kite flying, play football or just take a walk. For persons who like plying soccer, do not forget to try the game with some locals. The locals usually set up the goal posts between hard rock café and Discovery shooping Mall at 16.00.

Kuta with its beauty of the beach will make the tourists feel statisfied and hope to visit it back believe it or not, thought for 50 years ago kuta is the village of fishermen nowadays it is called as the International City because this town is the place where tourist all over the word meet each other. Therefore, Kuta Beach is one of interesting places in Indonesia.

40.What is the paragraph about?
    a. Kuta Beach
    b. Rock cafe
    c. Ngurah Rai
    d. Indonesian

41.What is the main idea in the first paragraph?
    a. Kuta Beach is a beautiful beach in a southern Bali

b. Its long sandy beach is known internationally, with its varied accommodation, may restaurants and bars, and many renowned surfers
c. The locals usually set up the goal posts between Hard Rock Café and Discovery Shopping Mall at 16.00
d. Its locations is in Bandung Regency, 9 km from Denpasar, the capital of Bali exactly near Bali,s Ngurah Rai Airpoirt.

42.Where is Kuta Beach located?
a. Surabaya
b. Bandung
c. Denpasar
d. Jakarta

Text for Number 43-46

Adele Laurie Blue Adkins or better known as Adele is my idol. She was born on 5 May 1988. She is a British singer.

Adele likes to sing since she was young. She loves song more than book. Her debut album, 19, was released in 2008. It was a huge success. It made her popular around the world. After that, every time she releases album, it always make it to the Billboard chart. She has won many awards, including Brit Awards and Grammy Awards. This year, she is working on her new album. Besides singing, she is also writing and producing her own song.

Adele is beautiful. She has white complexion and beautiful eyes. She has wavy brown hair. She is not extra thin and has average height. Although she is not like the other celebrities who have thin and glamorous appearance, but she has her own charm. She believes that as a singer, her job is to satisfy people's ears, not their eyes. That inspires me a lot because I want to be a good singer too in the future. It's okay to be different with others. All we need to do is just be yourself and don't be scared to fight for your dreams.

43. What is the writer's purpose to write the text?

a. To describe who adele is to the readers
b. To tell the readers how great Adele is
c. To explain Adele's talent
d. To give guidance how to be a great artist like Adele

44. Based on the text, Adele has . . . . .
a. Extra thin body, brown hair, glamorous appearance
b. Curvy body, average height, white skin, beautiful face
c. Thin body, wavy hair, and white skin
d. Tall and slim body, fair complexion

45. Which is NOT TRUE according to the text?
a. Adele has won Grammy Awards
b. Adele comes from USA
c. Many of Adele's songs can enter Billboard chart
d. Adele is a singer songwriter

46. " . . . . . but she has her own *charm*."
The underlined word is close in meaning to . . . . . .

a. Side
b. Talent
c. Beauty
d. Appeal

Text for number 47-50

The Great Pyramid of Giza is a huge pyramid built by the Ancient Egyptians. It stands near Cairo, Egypt. It is the oldest of the Seven Wonders of the Ancient World, and the only one to remain mostly intact. When it was built it was 146.5 meters (481 feet) tall. It was the tallest building in the world for over 3,800 years. Erosion and other causes have shrunk it to 138.8 m. The pyramid was probably built for Khufu, an Egyptian pharaoh. It was perhaps built by Khufu's vizier, Hemiunu. It is believed that it took about 20 years to build, and was completed around 2570 BC.

When it was built, Great Pyramid was covered by white stones that formed a smooth outer surface. Some of these stones can still be seen around the base. Most of what can be seen of the pyramid now is its basic core of 2,300,000 blocks of limestone and granite. There have been many different theories to explain how the pyramid was built. Most accepted building ideas are based on the idea of moving huge stones from a quarry and dragging and lifting them into place. Archaeologists found that the Pyramids of Giza were not built by slaves, but workers who were paid for working. Their graves were found near the pyramid in 1990.

There are three known rooms, or chambers, inside the Great Pyramid. The lowest chamber is cut into the rock on which the pyramid was built. This chamber was not finished. The other two chambers are higher up inside the pyramid. They are called the Queen's Chamber and the King's Chamber, but these are modern labels as we do not know how the Egyptians were going to use them.The Great Pyramid has two passages, one leading up, and the other down. It is the only Egyptian pyramid to have the two passages.

The Great Pyramid is part of a group of buildings, called the Giza Necropolis. This includes two mortuary temples in honor of Khufu. One is close to the pyramid and one near the Nile. There are three smaller pyramids for Khufu's wives. Other buildings include an even smaller "satellite" pyramid, and a raised causeway which joins the two temples. There are other tombs, called mastaba, probably for other important people.

47. What is the text about?
    a. Giza Necropolis
    b. Seven Wonders of the Ancient World
    c. Pharaoh
    d. The Great Pyramid of Giza

48. Which paragraph mention about how Pyramid of Giza was built?
    a. 1
    b. 2
    c. 3
    d. 4

49. How long does it take to build the Pyramid of Giza?
    a. 20 years
    b. 146 years
    c. In 2570 BC
    d. In 19990

50. Which of the following things is not mentioned in the text?
    a. The parts of the building
    b. The reason for building the Pyramid of Giza
    c. The height of the building
    d. The numbers of Pyramid in the complex

Validator

Nurlan Waruwu S.Pd
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Appendix 5

Pre - Test

1. C
2. B
3. B
4. A
5. A
6. A
7. A
8. B
9. A
10. C
11. A
12. B
13. A
14. A
15. C
16. C
17. C
18. A
19. A
20. D
21. A
22. D
23. C
24. B
25. D
26. B
27. A
28. B
29. D
30. A
31. A
32. A
33. A
34. B
35. A
36. A
37. A
38. B
39. B
40. C
41. A
42. C
43. A
44. C
45. A
46. B
47. A
48. A
49. A
50. C

Post - Test

1. A
2. C
3. A
4. B
5. A
6. A
7. C
8. A
9. D
10. C
11. B
12. D
13. A
14. A
15. A
16. C
17. B
18. B
19. A
20. A
21. B
22. A
23. A
24. A
25. C
26. A
27. C
28. A
29. B
30. A
31. A
32. A
33. A
34. B
35. C
36. C
37. A
38. A
39. D
40. A
41. A
42. C
43. A
44. B
45. B
46. C
47. D
48. B
49. A
50. B

Appendix 7

No	NO ITEMS																																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	1	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1
2	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	0	1	1	1	0	1	1	1	1	0	0	1	0	1	0	1	0	1	1	1	1	1	0	0	0
3	0	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
4	1	1	1	0	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1
5	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	1	0	0	1	1	1	1	0	0	1	1	0	0	1
6	1	1	1	0	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	0	0	1	0	0	0	1	1	0	0	1	1	1	1	1	1
7	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	1	0	1	0	0	1	1	1	1	1
8	1	0	1	1	1	0	1	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1	0	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1	1	1	1	0	1	1	1	1	0	0	1	0	1	1	0	0	0	1	0	1	1	0	1	0
10	0	1	1	0	0	1	0	1	0	1	0	1	1	0	1	1	0	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1
11	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	1	0	0	1	0
12	1	1	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1
13	0	0	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0	1	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	0
14	1	1	0	1	0	0	1	0	1	1	0	1	1	0	0	1	1	1	1	0	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1
15	1	1	0	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	0	1	1	0	0	1	0	1	1	1	1	1	1	0	1	1	0	1	1
16	0	0	1	1	1	0	1	1	0	1	0	0	0	1	0	0	0	1	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1
17	1	1	1	1	1	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	1	1	1	1	0	1	1	1
18	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0
19	1	1	0	1	0	1	1	1	1	1	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	1	1
20	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0	1	1	1	0	1	0	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1
21	1	0	0	0	1	0	1	1	0	1	0	1	1	1	0	0	1	1	0	1	1	0	1	1	1	0	1	0	1	1	1	1	1	1	0	1	0	1	1	0
22	1	0	0	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	1	0	1	1	0	0	0	0	1	0	1	1	1	0	0	1	0	1	1	1	1
23	0	0	1	1	1	0	1	0	0	1	0	1	1	1	0	1	0	1	0	0	1	0	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0
N= 23	15	14	18	16	17	15	15	18	6	18	4	17	17	18	3	15	16	22	15	14	15	18	17	19	5	4	19	6	17	15	21	19	16	15	16	22	17	15	17	16

P	0,7	0,6	0,8	0,7	0,7	0,7	0,7	0,8	0,2	0,8	0,2	0,7	0,7	0,8	0,1	0,7	0,7	0,9	0,7	0,6	0,7	0,8	0,7	0,8	0,2	0,2	0,8	0,2	0,7	0,7	0,9	0,8	0,7	0,7	0,7	0,9	0,7	0,7	0,7	0,7
Q	0,3	0,4	0,2	0,3	0,3	0,3	0,3	0,2	0,8	0,2	0,8	0,3	0,3	0,2	0,9	0,3	0,3	0,1	0,3	0,4	0,3	0,2	0,3	0,2	0,8	0,8	0,2	0,8	0,3	0,3	0,1	0,2	0,3	0,3	0,3	0,1	0,3	0,3	0,3	0,3

Validity of Pre- Test

Cont....

Validity of Pre Test

No	NUMBER OF ITEMS																														Xt	Xt^2
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70		
1	1	0	1	0	0	1	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	50	2500
2	0	1	1	0	0	1	1	1	0	1	0	1	0	0	0	0	1	0	1	0	1	0	0	1	1	0	1	0	0	0	40	1600
3	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	1	0	1	1	1	0	0	51	2601
4	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	52	2704
5	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	1	0	0	0	1	0	33	1089
6	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	0	1	1	1	0	0	1	1	0	0	47	2209
7	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	1	0	1	0	0	0	1	1	1	1	1	1	0	1	49	2401
8	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	54	2916
9	1	1	1	0	0	1	1	0	0	1	0	0	0	1	1	0	1	0	1	0	1	0	1	0	1	0	0	1	0	0	42	1764
10	0	0	1	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	0	44	1936
11	1	1	1	0	0	1	1	1	0	0	0	1	0	0	0	0	1	1	0	1	0	0	1	0	1	1	1	0	0	0	30	900
12	0	1	1	0	1	0	1	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	51	2601
13	1	0	0	0	0	1	1	1	1	1	0	0	1	1	0	0	1	1	1	1	1	0	0	1	0	1	1	0	1	0	44	1936
14	1	1	1	0	0	0	0	1	1	0	0	1	1	0	1	0	1	0	1	0	1	0	1	1	1	1	1	1	0	0	45	2025
15	0	1	1	0	0	1	1	1	0	1	0	1	0	1	1	0	1	1	0	1	1	0	1	1	1	0	1	0	0	1	47	2209
16	1	0	0	0	0	1	0	1	1	1	0	1	0	0	1	0	1	1	0	1	0	1	1	0	1	1	1	1	0	0	41	1681
17	1	1	1	0	0	1	0	1	1	1	0	0	1	1	0	0	1	1	1	1	1	0	0	0	0	0	1	1	0	0	44	1936

18	1	0	0	0	1	0	1	1	1	0	1	0	0	1	0	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	42	1764
19	0	1	1	0	0	0	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	1	0	51	2601
20	1	1	1	0	0	1	1	1	0	0	0	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	38	1444
21	1	1	0	1	0	1	0	1	1	1	0	0	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	0	0	1	43	1849
22	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	1	0	0	44	1936
23	0	0	0	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	1	1	1	0	1	1	1	0	1	1	0	0	40	1600
N= 23	17	15	15	2	4	17	16	21	16	18	4	17	15	15	16	3	18	15	17	15	15	5	16	17	16	14	18	15	3	4	**∑ xt = 1022**	**∑xt² = 46202**
p	0,7	0,7	0,7	0,1	0,1	0,7	0,7	0,9	0,7	0,8	0,1	0,7	0,7	0,7	0,7	0,1	0,8	0,7	0,7	0,7	0,7	0,2	0,7	0,7	0,7	0,6	0,8	0,7	0,1	0,1		
q	0,3	0,3	0,3	0,9	0,9	0,3	0,3	0,1	0,3	0,2	0,9	0,3	0,3	0,3	0,3	0,9	0,2	0,3	0,3	0,3	0,3	0,8	0,3	0,3	0,3	0,4	0,2	0,3	0,9	0,9		

Appendix 8

Calculation of $r_{pbi} = \frac{M_p - M_t}{SD_t}\sqrt{\frac{p}{q}}$ in Pre Test

A. Calculation of Pre Test

1. Means score from score total (M_t)

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

$$M_t = \frac{1022}{23} = 44.43$$

2. Standard Deviation (SD_t)

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

$$SD_t = \sqrt{\frac{46202}{23} - \left(\frac{1022}{23}\right)^2}$$

$$SD_t = \sqrt{2008.78 - 44.43^2}$$

$$SD_t = \sqrt{2008.78 - 1974.02} = \sqrt{34.76} = 5.89$$

3. Means Score (M_p)

Item 1 $M_{p1} = \frac{\text{the total of students score that true item answer}}{n1}$

$$M_{p1} = \frac{50+40+52+47+49+54+42+51+45+47+44+51+38+43+44}{15}$$

$$M_{p1} = \frac{697}{15} = 46.46$$

Item 2 $M_{p2} = \frac{\text{the total of students score that answer true item}}{n2}$

$$M_{p2} = \frac{50+40+52+47+49+42+44+51+45+47+44+51+44}{13}$$

$$M_{p2} = \frac{646}{14} = 46.62$$

Item 3 $M_{p3} = \frac{\text{the total of students score that answer true item}}{n3}$

$$M_{p3} = \frac{50+40+51+52+33+47+54+42+44+51+44+45+47+44+42+51+40}{17}$$

$$M_{p3} = \frac{787}{17} = 46.29$$

Item 4 $M_{p4} = \frac{\text{the total of students score that answer true item}}{n4}$

$$M_{p4} = \frac{50+40+51+49+54+42+51+44+45+47+41+44+42+51+38+44}{16}$$

$$M_{p4} = \frac{743}{16} = 46.43$$

Item 5 $M_{p5} = \frac{\text{the total of students score that answer true item}}{n5}$

$$M_{p5} = \frac{50+40+51+52+47+49+54+42+51+44+47+41+44+38+43+44+40}{17}$$

$$= \frac{787}{17} = 46.29$$

Item 6 $M_{p6} = \frac{\text{the total of students score that answer true item}}{n6}$

$$M_{p6} = \frac{50+40+51+52+47+49+42+44+51+44+47+42+51+38+44}{15}$$

$$= \frac{692}{15} = 46.13$$

Item 7 $M_{p7} = \frac{\text{the total of students score that answer true item}}{n7}$

$$M_{p7} = \frac{40+52+47+54+42+51+44+45+47+41+51+38+43+44+40}{15}$$

$$= \frac{679}{15} = 46.25$$

Item 8 $M_{p8} = \frac{\text{the total of students score that answer true item}}{n8}$

$$M_{p8} = \frac{50+40+51+52+33+47+49+54+42+44+51+44+47+41+42+51+43+44}{18}$$

$$M_{p8} = \frac{825}{18} = 45.83$$

Item 9 $= \frac{\text{the total of students score that answer true item}}{n9}$

$$M_{p9} = \frac{51+52+49+45+51+44}{6}$$

$$= \frac{292}{6} = 48.66$$

Item 10 $M_{p10} = \frac{\text{the total of students score that answer true item}}{n10}$

$$M_{p10} = \frac{50+40+51+52+33+47+49+54+42+44+51+45+47+41+51+43+44+40}{18}$$

$$M_{p10} = \frac{824}{18} = 45.78$$

Item 11 $M_{p11} = \frac{\text{the total of students score that answer true item}}{n11}$

$$M_{p11} = \frac{51+54+51+42}{4}$$

$$M_{p11} = \frac{198}{4} = 49.5$$

Item 12 $M_{p12} = \frac{50+51+52+47+49+54+44+51+44+45+47+44+42+51+43+44+40}{17}$

$$M_{p12} = \frac{838}{17} = 49.29$$

Item 13 $M_{p13} = \frac{50+40+51+52+49+54+42+51+44+47+41+44+44+51+43+44+40}{17}$

$$M_{p1} = \frac{787}{17} = 46.29$$

Item 14 $M_{p14} = \frac{50+40+51+52+47+49+54+42+51+44+45+47+44+51+38+43+44+40}{18}$

$$M_{p14} = \frac{832}{18} = 46.22$$

Item 15 $M_{p15} = \frac{50+44+51}{3}$

$$M_{p15} = \frac{145}{3} = 48.33$$

Item 16 $M_{p16} = \frac{50+51+52+47+49+42+44+51+45+47+44+42+51+44+40}{15}$

$$M_{p16} = \frac{699}{15} = 46.6$$

Item 17 $M_{p17} = \frac{50+40+51+47+49+54+42+51+45+47+44+51+38+43+44}{15}$

$$M_{p17} = \frac{696}{15} = 46.4$$

Item 18 $M_{p18} = \frac{50+40+51+52+33+47+49+54+42+44+51+44+45+47+41+44+42+51+38+43+44+40}{22}$

$$M_{p18} = \frac{992}{22} = 45.09$$

Item 19 $M_{p19} = \frac{50+40+51+52+47+49+54+42+51+44+45+47+41+44+42}{15}$

$$M_{p19} = \frac{699}{15} = 46.6$$

Item 20 $M_{p20} = \frac{51+52+47+54+44+51+44+47+41+44+51+38+43+44}{14}$

$$M_{p20} = \frac{651}{14} = 46.5$$

Item 21 $M_{p21} = \frac{50+40+52+54+42+44+51+44+45+47+44+42+51+43+44}{15}$

$$M_{p21} = \frac{693}{15} = 46.2$$

Item 22 $M_{p22} = \frac{50+40+51+52+47+49+54+42+44+51+44+45+41+44+42+51+38+44}{18}$

$$M_{p22} = \frac{829}{18} = 46.05$$

Item 23 $M_{p23} = \frac{50+40+52+47+49+54+42+44+51+45+47+41+42+51+43+44+40}{17}$

$$M_{p23} = \frac{782}{17} = 46$$

Item 24 $M_{p24} = \frac{40+51+52+47+49+54+42+44+51+45+47+41+44+42+51+38+43+44+40}{19}$

$$M_{p24} = \frac{865}{19} = 45.53$$

Item 25 $M_{p25} = \frac{33+44+41+51+43}{5}$

$$M_{p25} = \frac{212}{5} = 42.4$$

Item 26 $M_{p26} = \frac{51+54+51+42}{4}$

$$M_{p26} = \frac{198}{4} = 49.5$$

Item 27 $M_{p27} = \frac{50+40+51+52+33+47+49+54+42+44+51+44+45+47+44+42+51+43+40}{19}$

$$M_{p27} = \frac{874}{19} = 46$$

Item 28 $M_{p28} = \frac{51+52+49+45+51+44}{6}$

$$M_{p28} = \frac{292}{6} = 48.66$$

Item 29 $M_{p29} = \frac{50+40+51+52+49+54+42+44+51+44+45+47+44+42+51+43+40}{17}$

$$M_{p29} = \frac{789}{17} = 46.41$$

Item 30 $M_{p30} = \frac{50+51+52+49+54+42+44+51+44+47+44+42+38+43+44}{15}$

$$M_{p30} = \frac{695}{15} = 46.33$$

Item 31 $M_{p31} = \frac{50+40+51+52+33+47+49+54+44+30+44+45+47+41+44+42+51+38+43+44+40}{21}$

$$M_{p31} = \frac{929}{21} = 44.23$$

Item 32 $M_{p32} = \frac{50+40+51+52+33+47+49+54+42+44+51+44+45+47+44+42+51+43+40}{19}$

$$M_{p32} = \frac{874}{19} = 46$$

Item 33 $M_{p33}= \frac{50+40+51+52+33+49+54+44+51+44+45+47+41+44+42+51+43+44+40}{19}$

$M_{p33} = \frac{865}{19} = 45.53$

Item 34 $M_{p34}= \frac{50+51+52+54+42+44+51+44+45+47+44+42+51+43+40}{15}$

$M_{p34} = \frac{700}{15} = 46.66$

Item 35 $M_{p35}= \frac{50+40+51+52+47+54+44+51+44+45+41+44+42+51+44+40}{16}$

$M_{p35} = \frac{740}{16} = 46.25$

Item 36 $M_{p36}= \frac{50+40+51+52+33+47+49+54+42+44+30+51+44+45+47+41+44+42+51+38+43+40}{22}$

$M_{p36} = \frac{978}{22} = 44.45$

Item 37 $M_{p37}= \frac{40+51+52+33+47+49+54+42+44+51+45+47+44+51+43+44+40}{17}$

$M_{p37} = \frac{778}{17} = 45.8$

Item 38 $M_{p38}= \frac{50+51+52+47+49+54+44+51+44+45+44+51+43+44+40}{15}$

$M_{p38} = \frac{709}{15} = 47.26$

Item 39 $M_{p39}= \frac{50+51+52+47+49+54+42+30+51+44+47+41+44+51+43+44+40}{17}$

$M_{p39} = \frac{780}{17} = 45.88$

Item 40 $M_{p40}= \frac{50+51+52+33+47+49+54+44+51+45+47+41+44+51+38+44}{16}$

$M_{p40} = \frac{741}{16} = 46.31$

Item 41 $M_{p41}= \frac{50+51+52+33+47+49+54+42+30+44+45+41+44+42+38+43+44}{16}$

$M_{p41} = \frac{799}{17} = 47$

Item 42 $M_{p42}= \frac{40+52+47+49+54+42+51+44+45+47+44+51+38+43+44}{15}$

$M_{p42} = \frac{691}{15} = 46.06$

Item 43 $M_{p43}= \frac{50+40+52+47+49+54+44+51+45+47+44+51+38+43+44}{15}$

$M_{p43} = \frac{699}{15} = 46.6$

Item 44 $M_{p44}= \frac{33+43}{2}$

$M_{p44} = \frac{76}{2} = 38$

Item 45 $M_{p45}= \frac{51+54+51+42}{4}$

$M_{p45} = \frac{198}{4} = 49.5$

Item 46 $M_{p46}= \frac{50+40+51+52+47+49+54+42+44+47+41+44+51+38+43+44+40}{17}$

$M_{p46} = \frac{787}{17} = 46.29$

Item 47 $M_{p47}= \frac{50+40+51+52+7+49+54+42+44+51+44+47+42+51+38+44}{16}$

$M_{p47} = \frac{746}{16} = 46.62$

Item 48 $M_{p48}= \frac{50+40+51+52+33+47+49+54+44+30+44+45+ 47+41+44+42+51+38+43+44+40}{21}$

$M_{p48} = \frac{929}{21} = 44.23$

Item 49 $M_{p49}= \frac{50+51+52+47+49+54+44+51+44+45+41+44+42+51+43+44}{16}$

$M_{p49} = \frac{752}{16} = 47$

Item 50 $M_{p50}= \frac{50+40+51+52+47+49+54+42+44+51+44+47+41+44+51+43+44+40}{18}$

$M_{p50} = \frac{834}{18} = 46.33$

Item 51 $M_{p51}= \frac{51+54+51+42}{4}$

$M_{p51} = \frac{198}{4} = 49.5$

Item 52 $M_{p52}= \frac{50+40+51+52+33+47+49+54+44+51+45+47+41+51+43+44+40}{17}$

$M_{p52} = \frac{782}{17} = 46$

Item 53 $M_{p53}= \frac{50+51+52+47+49+54+44+51+44+45+44+51+43+44+40}{15}$

$M_{p53} = \frac{709}{15} = 47.26$

Item 54 $M_{p54}=\frac{51+52+47+49+54+42+51+44+47+44+42+51+38+44+40}{15}$

$M_{p54}=\frac{696}{15}=46.4$

Item 55 $M_{p55}=\frac{50+51+52+33+47+49+54+42+44+51+45+47+41+51+44+40}{16}$

$M_{p55}=\frac{741}{16}=46.31$

Item 56 $M_{p56}=\frac{50+44+51}{3}$

$M_{p56}=\frac{145}{3}=48.33$

Item 57 $M_{p57}=\frac{50+40+51+47+49+54+42+44+51+44+45+47+41+44+51+38+43+44}{18}$

$M_{p57}=\frac{825}{18}=45.83$

Item 58 $M_{p58}=\frac{50+51+52+47+54+42+44+51+44+47+41+44+51+43+44}{15}$

$M_{p58}=\frac{705}{15}=47$

Item 59 $M_{p59}=\frac{50+40+51+52+33+49+54+44+51+44+45+47+44+51+43+44+40}{17}$

$M_{p59}=\frac{782}{17}=46$

Item 60 $M_{p60}=\frac{51+52+33+47+54+44+30+51+44+47+41+44+51+43+44}{15}$

$M_{p60}=\frac{696}{15}=46.4$

Item 61 $M_{p61}=\frac{50+40+52+54+42+44+51+44+45+47+44+42+51+43+40}{15}$

$M_{p61}=\frac{689}{15}=45.93$

Item 62 $M_{p62}=\frac{50+47+51+41+44}{5}$

$M_{p62}=\frac{233}{5}=46.6$

Item 63 $M_{p63}=\frac{50+52+33+47+49+54+44+30+51+45+47+41+44+51+43+40}{16}$

$M_{p63}=\frac{745}{16}=46.56$

Item 64 $M_{p64}=\frac{50+40+51+52+33+47+49+54+44+51+44+47+51+44+40}{15}$

$M_{p64}=\frac{697}{15}=46.46$

Item 65 $M_{p65}= \frac{50+40+52+47+49+54+42+44+51+45+47+41+42+51+43+40}{16}$

$$M_{p65} = \frac{738}{16} = 46.12$$

Item 66 $M_{p66}= \frac{50+51+52+49+54+44+30+51+44+45+47+44+51+43}{14}$

$$M_{p66} = \frac{655}{14} = 46.78$$

Item 67 $M_{p67}= \frac{40+51+52+47+49+54+44+51+44+45+47+41+44+42+51+43+44+40}{18}$

$$M_{p67} = \frac{829}{18} = 46.05$$

Item 68 $M_{p68}= \frac{51+52+47+49+54+42+44+51+45+41+44+51+38+44+40}{15}$

$$M_{p68} = \frac{693}{15} = 46.2$$

Item 69 $M_{p69}= \frac{33+44+51}{3}$

$$M_{p69} = \frac{128}{3} = 42.66$$

Item 70 $M_{p70}= \frac{49+47+42+43}{4}$

$$M_{p70} = \frac{181}{4} = 45.25$$

Appendix 9

Table of Pre Test Validity

Number of Item	M_p	M_t	SD_t	P	Q	$r_{pbi} = \frac{M_p - M_t}{SD_t}\sqrt{\frac{p}{q}}$	r_t on 5% significant	Interpretation
1.	46.46	44.43	5.89	0.7	0.3	0.522	0.413	Valid
2.	46.62	44.43	5.89	0.6	0.4	0.456	0.413	Valid
3.	46.29	44.43	5.89	0.8	0.2	0.486	0.413	Valid
4.	46.43	44.43	5.89	0.6	0.4	0.516	0.413	Valid
5.	46.29	44.43	5.89	0.7	0.3	0.486	0.413	Valid
6.	46.13	44.43	5.89	0.7	0.3	0.437	0.413	Valid
7.	46.25	44.43	5.89	0.7	0.3	0.471	0.413	Valid
8.	45.83	44.43	5.89	0.8	0.2	0.48	0.413	Valid
9.	46.88	44.43	5.89	0.2	0.8	0.355	0.413	Invalid
10.	45.78	44.43	5.89	0.8	0.2	0.458	0.413	Valid
11.	49.5	44.43	5.89	0.2	0.8	0.258	0.413	Invalid
12.	49.29	44.43	5.89	0.8	0.2	0.542	0.413	Valid
13.	46.29	44.43	5.89	0.7	0.3	0.478	0.413	Valid
14.	46.22	44.43	5.89	0.8	0.2	0.606	0.413	Valid
15.	48.33	44.43	5.89	0.1	0.9	0.218	0.413	Invalid
16.	46.6	44.43	5.89	0.7	0.3	0.559	0.413	Valid
17.	46.4	44.43	5.89	0.7	0.3	0.507	0.413	Valid
18.	45.09	44.43	5.89	0.9	0.1	0.336	0.413	Invalid
19.	46.6	44.43	5.89	0.7	0.3	0.559	0.413	Valid
20.	46.5	44.43	5.89	0.6	0.4	0.428	0.413	Valid
21.	46.2	44.43	5.89	0.7	0.3	0.456	0.413	Valid
22.	46.05	44.43	5.89	0.8	0.2	0.55	0.413	Valid
23.	46	44.43	5.89	0.7	0.3	0.532	0.413	Valid
24.	45.53	44.43	5.89	0.8	0.2	0.561	0.413	Valid
25.	42.4	44.43	5.89	0.2	0.8	-0.103	0.413	Invalid
26.	49.5	44.43	5.89	0.2	0.8	0.258	0.413	Invalid
27.	46	44.43	5.89	0.8	0.2	0.532	0.413	Valid
28.	48.66	44.43	5.89	0.2	0.8	0.359	0.413	Invalid
29.	46.41	44.43	5.89	0.7	0.3	0.532	0.413	Valid
30.	46.33	44.43	5.89	0.7	0.3	0.489	0.413	Valid
31.	46.23	44.43	5.89	0.9	0.1	-0.101	0.413	Invalid
32.	46	44.43	5.89	0.8	0.2	0.532	0.413	Valid
33.	45.53	44.43	5.89	0.7	0.3	0.509	0.413	Valid
34.	46.66	44.43	5.89	0.7	0.3	0.574	0.413	Valid
35.	46.25	44.43	5.89	0.7	0.3	0.468	0.413	Valid
36.	44.45	44.43	5.89	0.9	0.1	0.010	0.413	Invalid
37.	45.8	44.43	5.89	0.7	0.3	0.465	0.413	Valid

38.	47.26	44.43	5.89	0.7	0.3	0.729	0.413	Valid
39.	45.88	44.43	5.89	0.7	0.3	0.492	0.413	Valid
40.	46.31	44.43	5.89	0.7	0.3	0.484	0.413	Valid
41.	47	44.43	5.89	0.7	0.3	0.662	0.413	Valid
42.	46.06	44.43	5.89	0.7	0.3	0.420	0.413	Valid
43.	46.6	44.43	5.89	0.7	0.3	0.559	0.413	Valid
44.	38	44.43	5.89	0.1	0.9	-0.359	0.413	Invalid
45.	49.5	44.43	5.89	0.1	0.9	0.283	0.413	Invalid
46.	46.29	44.43	5.89	0.7	0.3	0.478	0.413	Valid
47.	46.62	44.43	5.89	0.7	0.3	0.563	0.413	Valid
48.	44.23	44.43	5.89	0.9	0.1	-0.099	0.413	Invalid
49.	47	44.43	5.89	0.7	0.3	0.662	0.413	Valid
50.	46.33	44.43	5.89	0.8	0.2	0.644	0.413	Valid
51.	49.5	44.43	5.89	0.1	0.9	0.532	0.413	Valid
52.	46	44.43	5.89	0.7	0.3	0.419	0.413	Valid
53.	47.26	44.43	5.89	0.7	0.3	0.576	0.413	Valid
54.	46.4	44.43	5.89	0.7	0.3	0.507	0.413	Valid
55.	46.31	44.43	5.89	0.7	0.3	0.484	0.413	Valid
56.	48.33	44.43	5.89	0.1	0.9	0.218	0.413	Invalid
57.	45.83	44.43	5.89	0.8	0.2	0.474	0.413	Valid
58.	47	44.43	5.89	0.7	0.3	0.662	0.413	Valid
59.	46	44.43	5.89	0.7	0.3	0.532	0.413	Valid
60.	46.4	44.43	5.89	0.7	0.3	0.507	0.413	Valid
61.	45.93	44.43	5.89	0.7	0.3	0.414	0.413	Valid
62.	46.6	44.43	5.89	0.2	0.8	0.184	0.413	Invalid
63.	46.56	44.43	5.89	0.7	0.3	0.548	0.413	Valid
64.	46.46	44.43	5.89	0.7	0.3	0.522	0.413	Valid
65.	46.12	44.43	5.89	0.7	0.3	0.445	0.413	Valid
66.	46.78	44.43	5.89	0.6	0.4	0.604	0.413	Valid
67.	46.05	44.43	5.89	0.8	0.2	0.55	0.413	Valid
68.	46.2	44.43	5.89	0.7	0.3	0.456	0.413	Valid
69.	42.66	44.43	5.89	0.1	0.9	-0.099	0.413	Invalid
70.	45.25	44.43	5.89	0.1	0.9	0.069	0.413	Invalid

From the table above, it can be seen that 16 items was invalid and 54 items was valid. So, the researcher took 50 items for pre test.

Appendix 10

No	NO ITEMS																																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	1
2	1	1	0	1	1	1	0	1	0	1	1	0	0	1	1	0	1	0	1	0	1	1	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	0	0
3	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	0	1	1
4	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1
5	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	0	0	1	0	0	1	1	1	0	1	0	0	0	1	1	1	0	0	1	1	0	0	1
6	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	0	0	0	1	1	0	0	1	1	1
7	1	1	0	1	1	1	0	1	1	1	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1
8	1	0	1	1	1	0	1	1	1	1	1	1	0	1	1	0	0	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1
9	1	1	0	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1	0
10	0	1	1	0	0	1	0	1	1	1	0	1	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	0	1
11	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0
12	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	0	1	1
13	1	0	0	1	1	1	1	1	0	0	0	1	0	1	1	0	0	0	1	0	1	1	0	0	1	0	1	0	1	1	1	1	0	1	1	1	0	0	1	0
14	1	1	0	1	0	0	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1
15	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	1	1	1	1	1	0	1	1	0	1	1
16	1	0	0	1	1	0	1	1	1	1	1	0	0	1	1	0	0	0	1	1	0	1	1	1	1	1	0	0	0	1	0	1	0	0	1	1	1	0	1	1
17	1	1	0	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0	1	1	0	1	1	1	0	1	1	1
18	0	0	1	1	0	1	0	1	0	0	1	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	0	0	0	0
19	1	1	0	1	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	0	1	0	0	1	1	1	1
20	1	1	1	1	1	1	1	0	0	0	1	0	0	1	1	1	1	0	0	1	0	1	1	1	0	1	0	0	0	1	1	1	0	0	1	0	1	0	0	1
21	1	1	0	0	1	0	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	0	1	0	1	0	1	1	0	1	0
22	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0	1	0	1	1	0	1	0	0	1	1	1	0	1	0	0	1	1	1
23	0	0	1	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	1	1	0	1	1	0	1	1	0	0	0	0	1	1	1	0	0	1	0	0
N = 23	16	15	6	18	16	16	15	18	15	18	18	18	8	19	16	16	15	6	16	16	15	18	16	18	20	18	18	5	13	14	17	19	7	15	16	18	16	6	16	16
P	0,7	0,7	0,2	0,8	0,7	0,7	0,7	0,8	0,7	0,8	0,8	0,8	0,3	0,8	0,7	0,7	0,7	0,3	0,7	0,7	0,7	0,8	0,7	0,8	0,9	0,8	0,8	0,2	0,6	0,6	0,8	0,8	0,3	0,7	0,7	0,8	0,7	0,3	0,7	0,7

Q	0,3	0,3	0,8	0,2	0,3	0,3	0,3	0,2	0,3	0,2	0,2	0,2	0,7	0,2	0,3	0,3	0,3	0,7	0,3	0,3	0,3	0,2	0,3	0,2	0,1	0,2	0,2	0,8	0,4	0,4	0,2	0,2	0,7	0,3	0,3	0,2	0,3	0,7	0,3	0,3

Validity of Post

Cont....

Validity of Post Test

No	NO ITEMS																														Xt	Xt^2
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70		
1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	46	2116
2	0	1	1	1	0	0	1	1	0	1	1	1	0	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	1	1	37	1369
3	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	45	2025
4	1	1	1	0	1	0	1	1	1	1	0	1	1	1	0	1	0	1	0	0	1	0	1	1	1	0	1	1	1	1	47	2209
5	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	1	30	900
6	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	0	1	1	1	0	0	1	1	0	1	46	2116
7	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	1	1	1	1	1	1	1	48	2304
8	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1	51	2601
9	1	1	1	1	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	1	0	1	0	1	0	0	1	1	0	37	1369
10	0	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	41	1681
11	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	1	0	0	0	23	529
12	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	1	1	1	48	2304
13	1	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	0	1	0	1	1	37	1369
14	1	1	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	0	0	0	1	0	1	1	1	0	1	1	0	0	42	1764
15	0	1	1	0	0	0	1	1	0	1	1	1	0	1	0	0	1	1	0	0	1	0	1	1	0	0	1	0	1	1	34	1156
16	1	0	0	0	1	0	0	1	1	1	1	1	0	0	0	1	1	1	0	0	0	1	1	0	1	0	1	1	1	0	37	1369
17	1	1	1	1	1	0	1	1	1	1	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0	1	1	0	0	42	1764
18	1	0	0	1	1	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0	1	0	1	1	36	1196
19	0	1	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	0	1	1	1	0	1	1	1	0	43	1849
20	1	1	1	1	1	1	1	1	0	0	1	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	34	1156
21	1	1	0	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	1	1	0	0	1	0	1	1	39	1321
22	1	1	0	0	0	0	1	0	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	1	1	1	0	0	34	1156
23	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	1	0	0	25	625
N = 23	16	15	14	13	12	5	16	19	16	17	16	18	14	15	4	16	18	15	4	4	14	6	15	14	7	6	18	15	16	14	**∑xt= 902**	**∑xt^2 = 36248**
p	0,7	0,7	0,6	0,6	0,5	0,2	0,7	0,8	0,7	0,7	0,7	0,8	0,6	0,7	0,2	0,7	0,8	0,7	0,2	0,2	0,6	0,3	0,7	0,6	0,3	0,3	0,8	0,7	0,7	0,6		
q	0,3	0,3	0,4	0,4	0,5	0,8	0,3	0,2	0,3	0,3	0,3	0,2	0,4	0,3	0,8	0,3	0,2	0,3	0,8	0,8	0,4	0,7	0,3	0,4	0,7	0,7	0,2	0,3	0,3	0,4		

Appendix 12

Table of Post Test Validity

Number of Item	M_p	M_t	SD_t	P	Q	$r_{pbi} = \frac{M_p - M_t}{SD_t}\sqrt{\frac{p}{q}}$	r_t on 5% significant	Interpretation
1.	41.31	39.21	6.21	0.7	0.3	0.513	0.413	Valid
2.	40.93	39.21	6.21	0.7	0.3	0.421	0.413	Valid
3.	48.83	39.21	6.21	0.2	0.8	-0.0305	0.413	Invalid
4.	40.72	39.21	6.21	0.8	0.2	0.486	0.413	Valid
5.	41.37	39.21	6.21	0.7	0.3	0.528	0.413	Valid
6.	41.25	39.21	6.21	0.7	0.3	0.500	0.413	Valid
7.	41.06	39.21	6.21	0.7	0.3	0.452	0.413	Valid
8.	40.88	39.21	6.21	0.8	0.2	0.538	0.413	Valid
9.	41.66	39.21	6.21	0.7	0.3	0.6004	0.413	Valid
10.	40.56	39.21	6.21	0.8	0.2	0.434	0.413	Valid
11.	41.05	39.21	6.21	0.8	0.2	0.592	0.413	Valid
12.	40.77	39.21	6.21	0.8	0.2	0.502	0.413	Valid
13.	39.62	39.21	6.21	0.3	0.7	0.042	0.413	Invalid
14.	40.68	39.21	6.21	0.8	0.2	0.474	0.413	Valid
15.	41.56	39.21	6.21	0.7	0.3	0.576	0.413	Valid
16.	41.43	39.21	6.21	0.7	0.3	0.544	0.413	Valid
17.	41	39.21	6.21	0.7	0.3	0.437	0.413	Valid
18.	37	39.21	6.21	0.3	0.7	-0.227	0.413	Invalid
19.	41	39.21	6.21	0.7	0.3	0.437	0.413	Valid
20.	41.31	39.21	6.21	0.7	0.3	0.513	0.413	Valid
21.	41.33	39.21	6.21	0.7	0.3	0.518	0.413	Valid
22.	41.27	39.21	6.21	0.8	0.2	0.664	0.413	Valid
23.	41.18	39.21	6.21	0.7	0.3	0.481	0.413	Valid
24.	40.94	39.21	6.21	0.8	0.2	0.558	0.413	Valid
25.	40.15	39.21	6.21	0.9	0.1	0.454	0.413	Valid
26.	40.72	39.21	6.21	0.8	0.2	0.487	0.413	Valid
27.	40.61	39.21	6.21	0.8	0.2	0.45	0.413	Valid
28.	38.4	39.21	6.21	0.2	0.8	-0.065	0.413	Invalid
29.	43.07	39.21	6.21	0.6	0.4	0.746	0.413	Valid
30.	42.42	39.21	6.21	0.6	0.4	0.621	0.413	Valid
31.	41.11	39.21	6.21	0.8	0.2	0.465	0.413	Valid
32.	40.84	39.21	6.21	0.8	0.2	0.524	0.413	Valid
33.	37.57	39.21	6.21	0.3	0.7	-0.168	0.413	Invalid
34.	41	39.21	6.21	0.7	0.3	0.438	0.413	Valid
35.	41.37	39.21	6.21	0.7	0.3	0.529	0.413	Valid
36.	40.5	39.21	6.21	0.8	0.2	0.416	0.413	Valid
37.	41.18	39.21	6.21	0.7	0.3	0.481	0.413	Valid

38.	38.5	39.21	6.21	0.3	0.7	-0.073	0.413	Invalid
39.	41.06	39.21	6.21	0.7	0.3	0.452	0.413	Valid
40.	41.75	39.21	6.21	0.7	0.3	0.621	0.413	Valid
41.	40.93	39.21	6.21	0.7	0.3	0.421	0.413	Valid
42.	41.53	39.21	6.21	0.7	0.3	0.568	0.413	Valid
43.	41.57	39.21	6.21	0.6	0.4	0.456	0.413	Valid
44.	42	39.21	6.21	0.6	0.4	0.45	0.413	Valid
45.	42.33	39.21	6.21	0.5	0.5	0.503	0.413	Valid
46.	35.8	39.21	6.21	0.2	0.8	-0.275	0.413	Invalid
47.	41	39.21	6.21	0.7	0.3	0.437	0.413	Valid
48.	41.21	39.21	6.21	0.8	0.2	0.644	0.413	Valid
49.	42.62	39.21	6.21	0.7	0.3	0.836	0.413	Valid
50.	41.88	39.21	6.21	0.7	0.3	0.653	0.413	Valid
51.	41.12	39.21	6.21	0.7	0.3	0.468	0.413	Valid
52.	41.05	39.21	6.21	0.8	0.2	0.592	0.413	Valid
53.	43.5	39.21	6.21	0.6	0.4	0.829	0.413	Valid
54.	41.53	39.21	6.21	0.7	0.3	0.568	0.413	Valid
55.	42.5	39.21	6.21	0.2	0.8	0.265	0.413	Invalid
56.	41	39.21	6.21	0.7	0.3	0.437	0.413	Valid
57.	40.77	39.21	6.21	0.8	0.2	0.502	0.413	Valid
58.	41.13	39.21	6.21	0.7	0.3	0.469	0.413	Valid
59.	40.5	39.21	6.21	0.2	0.8	0.104	0.413	Invalid
60.	39.75	39.21	6.21	0.2	0.8	0.043	0.413	Invalid
61.	42.07	39.21	6.21	0.6	0.4	0.553	0.413	Valid
62.	39.33	39.21	6.21	0.3	0.7	0.012	0.413	Invalid
63.	41.66	39.21	6.21	0.7	0.3	0.600	0.413	Valid
64.	42.35	39.21	6.21	0.6	0.4	0.607	0.413	Valid
65.	39.85	39.21	6.21	0.3	0.7	0.066	0.413	Invalid
66.	36	39.21	6.21	0.3	0.7	-0.330	0.413	Invalid
67.	40.55	39.21	6.21	0.8	0.2	0.432	0.413	Valid
68.	41.33	39.21	6.21	0.7	0.3	0.518	0.413	Valid
69.	41	39.21	6.21	0.7	0.3	0.437	0.413	Valid
70.	41.78	39.21	6.21	0.6	0.4	0.496	0.413	Valid

From the table above, it can be seen that 12 items was invalid and 58 items was valid. So, the researcher took 50 items for post test.

Appendix 14

Calculation Reliability Pre Test

$R_{11} = \left(\frac{k}{k-1}\right)\left(\frac{S_{t^2}-\sum pq}{S_{t^2}}\right)$

$S_t^2 = \frac{X2}{N}$

N= 23

$\sum Xt = 1022$

$\sum Xt^2 = 46202$

$\sum pq = 8.41$

$X^2 = \sum Xt^2 - \left(\frac{\sum xt}{N}\right)^2$

$= 46202 - \left(\frac{1022}{23}\right)^2 = 46202 - \frac{1044484}{23} = 46202 - 45412.34 = 789.66$

$S_t^2 = \frac{X2}{N} = \frac{789.66}{23}$

$S_t^2 = 27.66$

$R_{11} = \left(\frac{k}{k-1}\right)\left(\frac{S_{t^2}-\sum pq}{S_{t^2}}\right)$

$R_{11} = \left(\frac{70}{70-1}\right)\left(\frac{34.33-8.41}{34.33}\right) = \left(\frac{70}{69}\right)\left(\frac{25.92}{34.33}\right)$

$= (1.014)\ (0.75)$

$= 0.76$ ($r_{11} > 0.70$ = reliable)

Test is reliable if $r_{count} > r_{tabel}$. Based on calculation above, the test have very high reliable.

Appendix 17

Score of Experimental Class and Control Class
Pre Test

1. PRE TEST

a. Pre Test Score of Experimental Class

No	The Initial Name of Students(n)	Pre-Test
1	AY	60
2	AR	34
3	AMH	50
4	AS	68
5	BR	44
6	DK	38
7	DA	72
8	ES	68
9	FAH	40
10	IA	70
11	KA	60
12	MJ	66
13	MD	60
14	MR	48
15	MI	48
16	NA	78
17	NA	58
18	NF	76
19	PN	64
20	PYH	66
21	RD	68
22	RH	56
23	WR	62
24	WV	74
Total		**1428**

2. Pre Test Score of Control Class

No	The Initial Name of Students(N)	Pre-Test
1	AH	78
2	AJ	38
3	AR	62
4	AK	60
5	AS	66
6	DY	54
7	HSL	70
8	HL	62
9	HA	62
10	HF	70
11	JT	70
12	LN	64
13	MH	52
14	MR	60
15	M	56
16	NA	36
17	NK	50
18	NB	66
19	NL	62
20	RM	62
21	RN	52
22	SK	76
23	S	76
24	YA	80
Total		**1484**

Appendix 18

RESULT OF NORMALITY TEST IN PRE TEST

RESULT OF THE NORMALITY TEST OF VIII-1IN PRE-TEST

1. The score of VIII-A class in pre test from low score to high score:

34	38	40	44	48	48	50	56	58	60
60	60	62	64	66	66	68	68	68	70
72	74	76	78						

2. High = 78

Low = 34

Range = High – Low

= 78 - 34

= 44

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

= 1 + 3,3 log (24)

= 1 + 3,3 (1.38)

= 1 + 4.55

= 5.55 / 5

4. Length of Classes $= \frac{range}{totalofclass}$ $= \frac{44}{5} = 8.8 = 9$

5. Mean

Interval Class	F	X	x'	fx'	x'^2	fx'^2
70 – 78	5	74	+2	10	4	20
61 – 69	7	65	+1	7	1	7
52 – 60	**5**	**56**	**0**	**0**	**0**	**0**
43 – 51	4	47	-1	-4	1	4
34 – 42	3	38	-2	-6	4	12
i = 9	24	-	-	7	-	43

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

$= 56 + 9\ (\frac{7}{24})$

$= 56 + 9\ (0.292)$

$= 56 + 2.628$

$= 58.62$

$$SD_t = i\sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$$

$= 9\sqrt{\frac{43}{24} - \left(\frac{7}{24}\right)^2}$

$= 9\sqrt{1.79 - (0.292)^2}$

$= 9\sqrt{1.79 - 0.085}$

$= 9\sqrt{1.705}$

$= 9 \times 1.305$

$= 11.74$

Table of Normality Data Test with Chi Kuadrad Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)^2}{f_h}$
	78.5	1.69	0.4545				
70 – 78				0.13	3.12	5	1.131
	69.5	0.93	0.3212				
61 – 69				0.25	6	7	0.166
	60.5	0.16	0.0636				
52 – 60				0.20	4.8	5	0.008
	51.5	-0.61	0.27093				
43 – 51				0.18	4.32	4	0.023
	42.5	-1.37	0.08534				
34 – 42				0.06	1.44	3	1.687
	33.5	-2.13	0.01659				
						X^2	3.015

Based on the table above,the reseracher found that x^2_{count}= 3.015 while x^2_{table}= 9.488. Because $x^2_{count} < x^2_{table}$ (3.015<9.488) with degree of freedom (dk) = 5–1 = 4 and significant level α = 5%, distribution of VIII-A class (pre-test) is normal.

6. Median

No	Interval	f	Fk
1	34 – 42	3	3
2	43 – 51	4	**7**
3	**52 – 60**	**5**	12
4	61 – 69	7	19
5	70 – 78	5	24

Position of Me in the interval of classes is number 3, that:

Bb = 51.5

F = 7

fm = 5

i = 9

n = 24

1/2n= 12

So :

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

$$= 51.5 + 9\left(\frac{12-7}{5}\right)$$

$$= 51.5 + 9\ (1)$$

$$= 51.5 + 9$$

$$= 60.5$$

7. Modus

No	Interval	F	Fk
1	34 – 42	3	3
2	43 – 51	4	7
3	52 – 60	5	**12**
4	**61 – 69**	**7**	19
5	70 – 78	5	24

$M_o = L + \frac{d_1}{d_1 + d_2} i$

L = 60.5

d_1 = 6

d_2 = -1

i = 8

So,

$M_o = 60.5 + \frac{2}{2+2} 9$

= 60.5 + 0.5 (9)

= 60.5 + 4.5

= 65

RESULT OF NORMALITY TEST IN PRE TEST

RESULT OF THE NORMALITY TEST OF VIII-B IN PRE-TEST

1. The score of VIII-B grade in pre test from low score to high score:

36	38	50	52	52	54	56	60	60	62
62	62	62	62	64	66	66	70	70	70
76	76	78	80						

2. High = 80

   Low = 36

   Range = High – Low

   = 80 - 36

   = 44

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

   = 1 + 3,3 log (24)

   = 1 + 3,3 (1.38)

   = 1 + 4.55

   = 5.55

   = 5

4. Length of Classes = $\frac{range}{totalofclass}$

   = $\frac{44}{5}$

   = 8.8 = 9

5. Mean

Interval Class	F	X	x'	fx'	x'^2	fx'^2
72 – 80	4	76	+2	8	4	16
63 – 71	6	67	+1	6	1	6
54 – 62	9	**58**	0	0	0	0
45 – 53	3	49	-1	-3	1	3
36 – 44	2	40	-2	-4	4	8
i = 9	24	-	-	7	-	33

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

$= 58 + 9(\frac{7}{24})$

$= 58 + 9(0.292)$

$= 58 + 2.62$

$= 60.62$

$$SD_t = i\sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$$

$= 9\sqrt{\frac{33}{24} - \left(\frac{7}{24}\right)^2}$

$= 9\sqrt{1.375 - (0.292)^2}$

$= 9\sqrt{1.375 - 0.085}$

$= 9\sqrt{1.29}$

$= 9 \times 1.135$

$= 10.21$

Table of Normality Data Test with Chi Kuadrad Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)^2}{f_h}$
	80.5	1.94	0.4738				
72 – 80				0.11	2.64	4	0.696
	71.5	1.06	0.3554				
63 – 71				0.28	6.72	6	0.075
	62.5	0.18	0.0714				
54 – 62				0.17	4.08	9	5.93
	53.5	-0.69	0.24510				
45 – 53				0.18	4.32	3	0.402
	44.5	-1.57	0.05821				
36 – 44				0.05	1.2	2	0.533
	35.5	-2.46	0.00695				
						X^2	7.636

Based on the table above,the reseracher found that x^2_{count}=7.636 while x^2_{table}= 9.488. Because $x^2_{count} < x^2_{table}$ (7.636<9.488) with degree of freedom (dk) = 5 – 1 = 4 and significant level α = 5%, distribution of VIII-2 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	36 – 44	2	2
2	45 – 53	3	**5**
3	**54 – 62**	**9**	14
4	63 – 71	6	20
5	72 – 80	4	24

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

Bb = 53.5 i = 9

F = 5 n = 24

fm = 9 1/2n = 12

So :

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

$$= 53.5 + 9\left(\frac{12-5}{9}\right)$$

$$= 53.5 + 9\ (0.777)$$

$$= 53.5 + 6.99$$

$$= 60.49$$

7. Modus

No	Interval	F	Fk
1	36 – 44	2	2
2	45 – 53	3	5
3	**54 – 62**	9	14
4	63 – 71	6	20
5	72 – 80	4	24

$M_o = L + \frac{d_1}{d_1 + d_2} i$

L = 53.5

d_1 = 6

d_2 = 3

i = 9

So,

$M_o = 53.5 + \frac{6}{6+3} 9$

$= 53.5 + \frac{6}{9} 9$

= 53.5 + 0.66 (9)

= 53.5 + 5.94

= 59.44

RESULT OF NORMALITY TEST IN PRE TEST

RESULT OF THE NORMALITY TEST OF VIII-C IN PRE-TEST

1. The score of VIII-4 class in pre test from low score to high score:

40	40	46	50	50	50	58	58	58	60
60	66	66	70	72	72	72	74	80	82
84	84								

2. High = 84

   Low = 40

   Range = High – Low

   = 84 - 40

   = 44

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

   = 1 + 3,3 log (22)

   = 1 + 3,3 (1.34)

   = 1 + 4.42

   = 5.42

   = 5

4. Length of Classes $= \frac{range}{totalofclass}$ $= \frac{44}{5} = 8.8 = 9$

5. Mean

Interval Class	F	X	x'	fx'	x'^2	fx'^2
76 – 84	4	80	+2	8	4	16
67 – 75	5	71	+1	5	1	5
58 – 66	**7**	**62**	0	0	0	0
49 – 57	3	53	-1	-3	1	3
40 – 48	3	44	-2	-6	4	12
$i = 9$	22	-	-	4	-	36

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

$= 62 + 9\ (\frac{4}{22})$

$= 62 + 9\ (0.182)$

$= 62 + 1.63$

$=63.63$

$$SD_t = i\sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$$

$= 9\sqrt{\frac{36}{22} - \left(\frac{4}{22}\right)^2}$

$= 9\sqrt{1.636 - (0.182)^2}$

$= 9\sqrt{1.636 - 0.033}$

$= 9\sqrt{1.603}$

$= 9$ x 1.266

$= 11.39$

Table of Normality Data Test with Chi Kuadrad Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)^2}{f_h}$
	84.5	1.83	0.4664				
76 – 84				0.11	2.42	4	1.028
	75.5	1.04	0.3508				
67 – 75				0.25	5.5	5	0.045
	66.5	0.25	0.0987				
58 – 66				0.19	4.18	7	1.901
	57.5	-0.53	0.29806				
49 – 57				0.20	4.4	3	0.445
	48.5	-1.32	0.09342				
40 – 48				0.07	1.54	3	1.383
	39.5	-2.11	0.01743				
						X^2	4.802

Based on the table above,the reseracher found that x^2_{count}= 4.802 while x^2_{table}=9.488. Because $x^2_{count} < x^2_{table}$ (4.802<9.488) with degree of freedom (dk) = 5 – 1 = 4 and significant level α = 5%, distribution of VIII-C class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	40 – 48	3	3
2	49 – 57	3	**6**
3	**58 – 66**	**7**	13
4	67 – 75	5	18
5	76 – 84	4	22

Position of Me in the interval of classes is number 3, that:

Bb = 57.5

F = 6

fm = 7

i = 9

n = 22

1/2n=11

So :

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

$= 57.5 + 9\left(\frac{11-6}{7}\right)$

$= 57.5 + 9\ (0.714)$

$= 57.5 + 6.42$

$= 63.92$

7. Modus

No	Interval	F	Fk
1	40 – 48	3	3
2	49 – 57	3	6
3	**58 – 66**	7	13
4	67 – 75	5	18
5	76 – 84	4	22

$M_o = L + \frac{d_1}{d_1 + d_2} i$

L = 57.5

d_1 = 4

d_2 = 2

i = 9

So,

$M_o = 57.5 + \frac{4}{4+2} 9$

= 57.5 + 0.66 (9)

= 57.5 + 5.94

= 63.44

Appendix 19

HOMOGENEITY TEST (PRE-TEST)

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

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

Hypotheses:

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

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

A. Variant of the VIII-A class is:

NO	Xi	Xi^2
1.	34	1156
2.	38	1444
3.	40	1600
4.	44	1936
5.	48	2304
6.	48	2304
7.	50	2500
8.	56	3136
9.	58	3364
10.	60	3600
11.	60	3600
12.	60	3600
13.	62	3844
14.	64	4096
15.	66	4356
16.	66	4356
17.	68	4624
18.	68	4624
19.	68	4624
20.	70	4900
21.	72	5184

22.	74	5476
23.	76	5776
24.	78	6084
Total	**1428**	**88488**

n = 24

$\sum xi$= 1428

$\sum_{xi} 2$ = 88488

So:

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

$$= \frac{24(88488) - (1428)^2}{24(24-1)}$$

$$= \frac{2123712 - 2039184}{24(23)}$$

$$= \frac{84528}{552}$$

= 153.13

B. Variant of the VIII-B class is:

NO	**Xi**	**Xi^2**
1.	36	1296
2.	38	1444
3.	50	2500
4.	52	2704
5.	52	2704
6.	54	2916
7.	56	3136
8.	60	3600
9.	60	3600
10.	62	3844
11.	62	3844
12.	62	3844
13.	62	3844
14.	62	3844
15.	64	4096
16.	66	4356
17.	66	4356
18.	70	4900
19.	70	4900

20.	70	4900
21.	76	5776
22.	76	5776
23.	78	6084
24.	80	6400
Total	**1484**	**94664**

N = 24
$\sum xi$ = 1484
$\sum_{xi} 2$ = 94664

So:

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

$$= \frac{24\,(94664) - (1484)^2}{24(24-1)}$$

$$= \frac{2271936 - 2202256}{24(23)}$$

$$= \frac{69680}{552}$$

= 126.23

C. Variant of the VIII-C class is:

NO	**Xi**	**Xi^2**
1	40	1600
2	40	1600
3	46	2116
4	50	2500
5	50	2500
6	50	2500
7	58	3364
8	58	3364
9	58	3364
10	60	3600
11	60	3600
12	66	4356
13	66	4356
14	70	4900
15	72	5184
16	72	5184
17	72	5184
18	74	5476

19	80	6400
20	82	6724
21	84	7056
22	84	7056
Total	**1392**	**91984**

N = 22

$\sum xi$= 1392

$\sum xi$= 91984

So:

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

$$= \frac{22(91984) - (1392)^2}{22(22-1)}$$

$$= \frac{2023648 - 1937664}{22(21)}$$

$$= \frac{85984}{462}$$

= 186.11

The Formula was used to test hypothesis was:

1. VIII-A and VIII-B :

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

So:

$$F = \frac{153.13}{126.23}$$

= 1.21

After doing the calculation, researcher found that F_{count} = 1.21 with α 5% and dk = 23and 23from the distribution list F, researcher found that F_{table} = 2.02, cause $F_{count} < F_{table}$ (1.21<2.02). So, there is no difference in variant between the VIII-A class and VIII-B class. It means that the variant is homogenous**.**

2. VIII-1 and VIII-C :

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

So:

$$F = \frac{186.11}{153.13} = 1.215$$

After doing the calculation, researcher found that $F_{count} = 1.21$ with α 5% and dk = 23 and 21 from the distribution list F, researcher found that $F_{table} = 2.04$, cause $F_{count} < F_{table}$ (1.21<2.04). So, there is no difference in variant between the VIII-A class and VIII-C class. It means that the variant is homogenous**.**

3. VIII-B and VIII-C :

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

So:

$$F = \frac{186.11}{126.23}$$

$$= 1.47$$

After doing the calculation, researcher found that $F_{count} = 1.47$ with α 5% and dk = 23 and 21from the distribution list F, researcher found that $F_{table} = 2.04$, cause $F_{count} < F_{table}$ (1.47<2.04). So, there is no difference the variant between the VIII-B class andVIII-C class. It means that the variant is homogenous**.**

Appendix 21

RESULT OF NORMALITY TEST IN POST TEST

RESULT OF THE NORMALITY TEST OF VIII-A IN POST-TEST

8. The score of VIII-A class in post test from low score to high score:

62	70	72	74	76	76	76	76	80	80
80	82	82	84	86	86	86	86	88	88
90	92	92	96						

9. High = 96
   Low = 62
   Range = High – Low
   = 96 - 62
   = 34

10. Total of Classes = 1 + 3,3 log (n)
    = 1 + 3,3 log (24)
    = 1 + 3,3 (1.38)
    = 1 + 4.55
    = 5.55 / 5

11. Length of Classes $= \frac{range}{total\ of\ class} = \frac{34}{5} = 6.8 = 7$

12. Mean

Interval Class	**F**	**X**	**x'**	**fx'**	**x'²**	**fx'²**
90 – 96	4	93	+2	8	4	16
83 – 89	7	86	+1	7	1	7
76 – 82	**9**	**79**	**0**	**0**	**0**	**0**
69 – 75	3	72	-1	-3	1	3
62 – 68	1	65	-2	-2	4	4
i = 5	24	-	-	10	-	30

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

$= 79 + 7\ (\frac{10}{24})$

$= 79 + 7\ (0.416)$

$= 79 + 2.912$

$= 81.91$

$$SD_t = i\sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$$

$= 7\sqrt{\frac{30}{24} - \left(\frac{10}{24}\right)^2}$

$= 7\sqrt{1.25 - (0.416)^2}$

$= 7\sqrt{1.25 - 0.173}$

$= 7\sqrt{1.077}$

$= 7$ x 1.037

$= 7.259$

Table of Normality Data Test with Chi Kuadrad Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)}{f_h}$
	96.5	2.01	0.4778				
90 - 96				0.12	2.88	4	0.434
	89.5	1.04	0.3508				
83- 89				0.31	7.4	7	0.021
	82.5	0.08	0.0319				
76 - 82				0.15	3.6	9	8.1
	75.5	-0.88	0.18943				
69 - 75				0.15	3.6	3	0.1
	68.5	-1.84	0.03288				
62 - 68				0.03	0.72	1	0.108
	61..5	-2.81	0.00248				
						X^2	8.763

Based on the table above, the researcher found that x^2_{count}= 8.763while x^2_{table}= 9.488. Because $x^2_{count} < x^2_{table}$ (8.763 < 9.488) with degree of freedom (dk) = 5–1 = 4 and significant level α = 5%, distribution of VIII-A class (post-test) is normal.

13. Median

No	Interval	F	Fk
1	62 – 68	1	1
2	69 – 75	3	**4**
3	**76 – 82**	**9**	13
4	83 – 89	7	20
5	90 – 96	4	24

Position of Me in the interval of classes is number 3, that:

Bb = 75.5

F = 4

fm = 9

i = 7

n = 24

1/2n=12

So :

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

$$= 75.5 + 7\left(\frac{12-4}{9}\right)$$

$$= 75.5 + 7\ (0.88)$$

$$= 75.5 + 6.16$$

$$= 81.66$$

14. Modus

No	Interval	F	Fk
1	62 – 68	1	1
2	69 – 75	3	4
3	**76 – 82**	9	13
4	83 – 89	7	20
5	90 – 96	4	24

$M_o = L + \frac{d_1}{d_1 + d_2}\ i$

L = 75.5

d_1 = 6

d_2 = 2

i = 7

So,

$M_o = 75.5 + \frac{6}{6+2}\ 7$

= 75.5 + 0.75 (7)

= 77.5 + 5.25

= 80.75

RESULT OF NORMALITY TEST IN POST TEST

RESULT OF THE NORMALITY TEST OF VIII-B IN POST-TEST

1. The score of VIII-B class in post test from low score to high score:

54	62	62	62	66	68	68	68	70	70
70	70	70	72	74	74	74	74	80	80
80	84	84	88						

2. High = 88

   Low = 54

   Range = High – Low

   = 88 - 54

   = 34

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

   = 1 + 3,3 log (24)

   = 1 + 3,3 (1.38)

   = 1 + 4.55

   = 5.55 / 5

4. Length of Classes $= \frac{range}{total\ of\ class} = \frac{34}{5} = 6.8 = 7$

5. Mean

Interval Class	F	X	x'	fx'	x'^2	fx'^2
82 – 88	3	85	+2	6	4	12
75 – 81	3	78	+1	3	1	3
68 – 74	**13**	**71**	**0**	**0**	**0**	**0**
61 – 67	4	64	-1	-4	1	4
54 – 60	1	57	-2	-2	4	4
i = 7	24	-	-	3	-	23

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

$= 71 + 7\ (\frac{3}{24})$

= 71 + 7 (0.125)

= 71 + 0.875

= 71.87

$SD_t = i\sqrt{\frac{\sum fx'^2}{n} - \left(\frac{\sum fx'}{n}\right)^2}$

$= 7\sqrt{\frac{23}{24} - \left(\frac{3}{24}\right)^2}$

$= 7\sqrt{0.958 - (0.125)^2}$

$= 7\sqrt{0.958 - 0.015}$

$= 7\sqrt{0.943}$

= 7 x 0.971

= 6.79

Table of Normality Data Test with Chi Kuadrad Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0-f_h)}{f_h}$
	88.5	2.59	0.4952				
82 – 88				0.07	1.68	3	1.035
	81.5	1.41	0.4207				
75 – 81				0.27	6.48	3	1.868
	74.5	0.38	0.1480				
68 – 74				0.11	2.64	13	3.924
	67.5	-0.64	0.26109				
61 – 67				0.21	5.04	4	0.214
	60.5	-1.68	0.04648				
54 – 60				0.04	0.96	1	0.001
	53.5	-2.69	0.00357				
						X^2	7.042

Based on the table above, the reseracher found that x^2_{count}= 7.042 while x^2_{table}= 9.488, because $x^2_{count} < x^2_{table}$ (7.042<9.488) with degree of freedom (dk) = 5–1 = 4 and significant level α = 5%, so distribution of VIII-B class (post-test) is normal.

6. Median

No	Interval	F	Fk
1	54 – 60	1	1
2	61 – 67	4	**5**
3	**68 – 74**	**13**	18
4	75 – 81	3	21
5	82 – 88	3	24

Position of Me in the interval of classes is number 3, that:

Bb = 67.5

F = 5

fm = 13

i = 7

n = 24

1/2n= 12

So :

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

$$= 67.5 + 7\left(\frac{12-5}{13}\right)$$

$$= 67.5 + 7\ (0.538)$$

$$= 67.5 + 3.766$$

$$= 71.26$$

7. Modus

No	Interval	F	Fk
1	54 – 60	1	1
2	61 – 67	4	5
3	**68 – 74**	**13**	18
4	75 – 81	3	21
5	82 – 88	3	24

$M_o = L + \frac{d_1}{d_1 + d_2}\ i$

L = 67.5

d_1 = 9

d_2 = 10

i = 7

So,

$M_o = 67.5 + \frac{9}{9+10}\ 7$

= 67.5 + 0.473 (7)

= 67.5 + 3.31

= 70.81

Appendix 22

HOMOGENEITY TEST (POST-TEST)

Calculation of parameter of experimental class sample by using Semantic Mapping and variant of the control class sample by using conventional strategy used homogeneity test by using formula:

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

Hypotheses:

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

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

D. Variant of the VIII-A class is:

NO	Xi	Xi^2
25.	62	3844
26.	70	4900
27.	72	5184
28.	74	5476
29.	76	5776
30.	76	5776
31.	76	5776
32.	76	5776
33.	80	6400
34.	80	6400
35.	80	6400
36.	82	6724
37.	82	6724
38.	84	7056
39.	86	7396
40.	86	7396
41.	86	7396
42.	86	7396
43.	88	7744
44.	88	7744
45.	90	8100

46.	92	8464
47.	92	8464
48.	96	9126
Total	**1960**	**161438**

n = 24
$\sum xi$ = 1960
$\sum_{xi} 2$ = 161438

So:

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

$$= \frac{24(161438) - (1960)^2}{24(24-1)}$$

$$= \frac{3874512 - 3841600}{24(23)}$$

$$= \frac{32912}{552}$$

= 59.62

E. Variant of the VIII-B class is:

NO	**Xi**	**Xi^2**
25.	54	2916
26.	62	3844
27.	62	3844
28.	62	3844
29.	66	4356
30.	68	4624
31.	68	4624
32.	68	4624
33.	70	4900
34.	70	4900
35.	70	4900
36.	70	4900
37.	70	4900
38.	72	5184
39.	74	5476
40.	74	5476
41.	74	5476
42.	74	5476
43.	80	6400

44.	80	6400
45.	80	6400
46.	84	7056
47.	84	7056
48.	88	7744
Total	**1724**	**125320**

N = 24
$\sum xi$ = 1724
$\sum_{xi} 2$ = 125320

So:

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

$$= \frac{24(125320) - (1724)^2}{24(24-1)}$$

$$= \frac{3007680 - 2972176}{24(23)}$$

$$= \frac{35504}{552}$$

= 64.31

The Formula was used to test hypothesis was:

4. VIII-A and VIII-B :

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

So:

$$F = \frac{64.31}{59.62}$$

= 1.078

After doing the calculation, researcher found that F_{count} = 1.078 with α 5% and dk = 23 and 23 from the distribution list F, researcher found that F_{table} = 2.02, cause $F_{count} < F_{table}$ (1.078<2.02). So, there is no difference in variant between the VIII-A class and VIII-B class. It means that the variant is homogenous**.**

Appendix 23

T_{test}OF THE BOTH AVERAGES IN PRE-TEST

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

So:

$$Tt = \frac{M_1 - M_2}{\sqrt{\left(\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}\right)\left(\frac{1}{n_1}+\frac{1}{n_2}\right)}}$$

$$Tt = \frac{59.5 - 61.83}{\sqrt{\left(\frac{(24-1)\ 153.13+(24-1)\ 126.23}{24+24-2}\right)\left(\frac{1}{24}+\frac{1}{24}\right)}}$$

$$Tt = \frac{-2.33}{\sqrt{\left(\frac{23(\ 153.13)+23\ (126.23)}{46}\right)(0.041+0.041)}}$$

$$Tt = \frac{-2.33}{\sqrt{\left(\frac{3521.99+2903.29}{46}\right)(0.082)}}$$

$$Tt = \frac{-2.33}{\sqrt{\left(\frac{6425.28}{46}\right)(0.082)}}$$

$$Tt = \frac{-2.33}{\sqrt{(139.68)(0.082)}}$$

$$Tt = \frac{-2.33}{\sqrt{11.45}}$$

$$Tt = \frac{-2.33}{3.38}$$

Tt = -0.689

Based on researcher calculation result of the homogeneity test of the both averages, researcher found that t_{count}= -0.689 with opportunity (1- α) = 1 – 5% = 95% and dk = n_1 + n_2 -2 = 24 + 24 – 2 = 46 , reseracher found that t_{table} = 2.021, because t_{count}< t_{table}(-0.689 < 2.021). So, H_a was rejected, it means that there is no difference in average between experimental class and control class in pre test.

Appendix 24

T_{test} OF THE BOTH AVERAGES IN POST – TEST

The formula was used to analyse homogeneity test of the both averages in post test was t-test, as below:

$$Tt = \frac{M_1 - M_2}{\sqrt{\left(\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}\right)\left(\frac{1}{n_1}+\frac{1}{n_2}\right)}}$$

$$Tt = \frac{81.66 - 71.83}{\sqrt{\left(\frac{(24-1)\ 153.13+(24-1)\ 126.23}{24+24-2}\right)\left(\frac{1}{24}+\frac{1}{24}\right)}}$$

$$Tt = \frac{9.83}{\sqrt{\left(\frac{23(\ 59.62)+23\ (64.31)}{46}\right)(0.041+0.041)}}$$

$$Tt = \frac{9.83}{\sqrt{\left(\frac{1371.26+1479.13}{46}\right)(0.082)}}$$

$$Tt = \frac{9.83}{\sqrt{\left(\frac{2850.39}{46}\right)(0.082)}}$$

$$Tt = \frac{9.83}{\sqrt{(61.96)(0.082)}}$$

$$Tt = \frac{9.83}{\sqrt{5.08}}$$

$$Tt = \frac{9.83}{2.25}$$

$$Tt = 4.368$$

Based on calculation above, the result of the homogeneity test of the both averages, it was found that t_{count}= 4.368with opportunity (1-α) = 1 – 5% = 95% and dk = n_1 + n_2 -2 = 24+ 24 – 2 = 46 , reseracher found that t_{table} = 2.021, cause t_{count}> t_{table}(4.368> 2.021). It means thatH_a was accepted, it means there was the difference average between experimental class and control class in post test. it can be concluded that there was the sifnificant effect of Semantic Mapping on Studens Reading Comprehension at Grade VIII SMPN 1 Angkola Muaratais.

Appendix 25

Chi-Square Table

dk	Significant level					
	50%	**30%**	**20%**	**10%**	**5%**	**1%**
1	0,455	1,074	1,642	2,706	3,841	6,635
2	1,386	2,408	3,219	4,605	5,991	9,210
3	2,366	3,665	4,642	6,251	7,815	11,341
4	3,357	4,878	5,989	7,779	9,488	13,277
5	4,351	6,064	7,289	9,236	**11,070**	15,086
6	5,348	7,231	8,558	10,645	12,592	16,812
7	6,346	8,383	9,803	12,017	14,067	18,475
8	7,344	9,524	11,030	13,362	15,507	20,090
9	8,343	10,656	12,242	14,684	16,919	21,666
10	9,342	11,781	13,442	15,987	18,307	23,209
11	10,341	12,899	14,631	17,275	19,675	24,725
12	11,340	14,011	15,812	18,549	21,026	26,217
13	12,340	15,119	16,985	19,812	22,362	27,688
14	13,339	16,222	18,151	21,064	23,685	29,141
15	14,339	17,222	19,311	22,307	24,996	30,578
16	15,338	18,418	20,465	23,542	26,296	32,000
17	16,338	19,511	21,615	24,769	27,587	33,409
18	17,338	20,601	22,760	25,989	28,869	34,805
19	18,338	21,689	23,900	27,204	30,144	36,191
20	19,337	22,775	25,038	28,412	31,410	37,566
21	20,337	23,858	26,171	29,615	32,671	38,932
22	21,337	24,939	27,301	30,813	33,924	40,289
23	22,337	26.018	28,429	32,007	35,172	41,638
24	23,337	27,096	29,553	33,196	35,415	42,980
25	24,337	28,172	30,675	34,382	37,652	44,314
26	25,336	29,246	31,795	35,563	38,885	45,642
27	26,336	30,319	32,912	36,741	40,113	46,963
28	27,336	31,391	34,027	37,916	41,337	48,278
29	28,336	32,461	35,139	39,087	42,557	49,588
30	29,336	33,530	36,250	40,256	43,773	50,892

APPENDIX 26

Z-Table

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.9	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003
-3.8	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005
-3.7	0.00011	0.00010	0.00010	0.00010	0.00009	0.00009	0.00008	0.00008	0.00008	0.00008
-3.6	0.00016	0.00015	0.00015	0.00014	0.00014	0.00013	0.00013	0.00012	0.00012	0.00011
-3.5	0.00023	0.00022	0.00022	0.00021	0.00020	0.00019	0.00019	0.00018	0.00017	0.00017
-3.4	0.00034	0.00032	0.00031	0.00030	0.00029	0.00028	0.00027	0.00026	0.00025	0.00024
-3.3	0.00048	0.00047	0.00045	0.00043	0.00042	0.00040	0.00039	0.00038	0.00036	0.00035
-3.	0.00069	0.00066	0.00064	0.00062	0.00060	0.00058	0.00056	0.00054	0.00052	0.00050

2										
-3.1	0.00097	0.00094	0.00090	0.00087	0.00084	0.00082	0.00079	0.00076	0.00074	0.00071
-3.0	0.00135	0.00131	0.00126	0.00122	0.00118	0.00114	0.00111	0.00107	0.00104	0.00100
-2.9	0.00187	0.00181	0.00175	0.00169	0.00164	0.00159	0.00154	0.00149	0.00144	0.00139
-2.8	0.00256	0.00248	0.00240	0.00233	0.00226	0.00219	0.00212	0.00205	0.00199	0.00193
-2.7	0.00347	0.00336	0.00326	0.00317	0.00307	0.00298	0.00289	0.00280	0.00272	0.00264
-2.6	0.00466	0.00453	0.00440	0.00427	0.00415	0.00402	0.00391	0.00379	0.03680	0.00357
-2.5	0.00621	0.00604	0.00587	0.00570	0.00554	0.00539	0.00523	0.00508	0.00494	0.00480
-2.4	0.00820	0.00798	0.00776	0.00755	0.00734	0.00714	0.00695	0.00676	0.00657	0.00639

-2.3	0.01072	0.01044	0.01017	0.00990	0.00964	0.00939	0.00914	0.00889	0.00866	0.00842
-2.2	0.01390	0.01355	0.01321	0.01287	0.01255	0.01222	0.01191	0.01160	0.01130	0.01101
-2.1	0.01786	0.01743	0.01700	0.01659	0.01618	0.01578	0.01539	0.01500	0.01463	0.01426
-2.0	0.02275	0.02222	0.02169	0.02118	0.02068	0.02018	0.01970	0.01923	0.01876	0.01831
-1.9	0.02872	0.02807	0.02743	0.02680	0.02619	0.02559	0.02500	0.02442	0.02385	0.02330
-1.8	0.03593	0.03515	0.03438	0.03362	0.03288	0.03216	0.03144	0.03074	0.03005	0.02938
-1.7	0.04457	0.04363	0.04272	0.04182	0.04093	0.04006	0.03920	0.03836	0.03754	0.03673
-1.6	0.05480	0.05370	0.05262	0.05155	0.05050	0.04947	0.04846	0.04746	0.04648	0.04551
-	0.0668	0.0655	0.0642	0.0630	0.0617	0.0605	0.0593	0.0582	0.0570	0.0559

1.5	1	2	6	1	8	7	8	1	5	2
-1.4	0.08076	0.07927	0.07780	0.07636	0.07493	0.07353	0.07215	0.07078	0.06944	0.06811
-1.3	0.09680	0.09510	0.09342	0.09176	0.09012	0.08851	0.08691	0.08534	0.08379	0.08226
-1.2	0.11507	0.11314	0.11123	0.10935	0.10749	0.10565	0.10383	0.10204	0.10027	0.09853
-1.1	0.13567	0.13350	0.13136	0.12924	0.12714	0.12507	0.12302	0.12100	0.11900	0.11702
-1.0	0.15866	0.15625	0.15386	0.15151	0.14917	0.14686	0.14457	0.14231	0.14007	0.13786
-0.9	0.18406	0.18141	0.17879	0.17619	0.17361	0.17106	0.16853	0.16602	0.16354	0.16109
-0.8	0.21186	0.20897	0.20611	0.20327	0.20045	0.19766	0.19489	0.19215	0.18943	0.18673
-0.	0.24196	0.23885	0.23576	0.23270	0.22965	0.22663	0.22363	0.22065	0.21770	0.21476

-0.7										
-0.6	0.27425	0.27093	0.26763	0.26435	0.26109	0.25785	0.25463	0.25143	0.24825	0.24510
-0.5	0.30854	0.30503	0.30153	0.29806	0.29460	0.29116	0.28774	0.28434	0.28096	0.27760
-0.4	0.34458	0.34090	0.33724	0.33360	0.32997	0.32636	0.32276	0.31918	0.31561	0.31207
-0.3	0.38209	0.37828	0.37448	0.37070	0.36693	0.36317	0.35942	0.35569	0.35197	0.34827
-0.2	0.42074	0.41683	0.41294	0.40905	0.40517	0.40129	0.39743	0.39358	0.38974	0.38591
-0.1	0.46017	0.45620	0.45224	0.44828	0.44433	0.44038	0.43644	0.43251	0.42858	0.42465
-0.0	0.50000	0.49601	0.49202	0.48803	0.48405	0.48006	0.47608	0.47210	0.46812	0.46414

Z-Table

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	0,4997	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

APPENDIX 27

Percentage Points of the t Distribution

Two Tail Test						
	0,50	**0,20**	**0,10**	**0,05**	**0,02**	**0,01**
One Tail Test						
dk	**0,25**	**0,10**	**0, 005**	**0,025**	**0,01**	**0,05**
1	1,000	3,078	6,314	12,706	31,821	63,657
2	0,816	1,886	2,920	4,303	6,965	9,925
3	0,765	1,638	2,353	3,182	4,541	5,841
4	0,741	1,533	2,132	2,776	3,747	4,604
5	0,721	1,486	2,015	2,571	3,365	4,032
6	0,718	1,440	1,943	2,447	3,143	3,707
7	0,711	1,415	1,895	2,365	2,998	3,499
8	0,706	1,397	1,860	2,306	2,896	3,355
9	0,703	1,383	1,833	2,262	2,821	3,250
10	0,700	1,372	1,812	2,228	2,764	3,165
11	0,697	1,363	1,796	2,201	2,718	3,106
12	0,695	1,356	1,782	2,178	2,681	3.055
13	0,692	1,350	1,771	2,160	2,650	3.012
14	0,691	1,345	1,761	2,145	2,624	2,977
15	0,690	1,341	1,753	2,132	2,623	2,947
16	0,689	1,337	1,746	2,120	2,583	2,921
17	0,688	1,333	1,743	2,110	2,567	2,898
18	0,688	1,330	1,740	2,101	2,552	2,878
19	0,687	1,328	1,729	2,093	2,539	2,861
20	0,687	1,325	1,725	2,086	2,528	2,845
21	0,686	1,323	1,721	2,080	2,518	2,831
22	0,686	1,321	1,717	2,074	2,508	2,819
23	0,685	1,319	1,714	2,069	2,500	2,807

24	0,685	1,318	1,711	2,064	2,492	2,797
25	0,684	1,316	1,708	2,060	2,485	2,787
26	0,684	1,315	1,706	2,056	2,479	2,779
27	0,684	1,314	1,703	2,052	2,473	2,771
28	0,683	1,313	1,701	2,048	2,467	2,763
29	0,683	1,311	1,699	2,045	2,462	2,756
30	0,683	1,310	1,697	2,042	2,457	2,750
40	0,681	1,303	1,684	**2,021**	2,423	2,704
60	0,679	1,296	1,671	2,000	2,390	2,660
120	0,677	1,289	1,658	1,980	2,358	2,617
∞	0,674	1,282	1,645	1,960	2,326	2,576

APPENDIX 28

GAIN SCORE OF EXPRIMENTAL CLASS AND CONTROL CLASS

Class	Pre-test	Post-test	Enhancment	Gain score
Exprimental	58.62	81.91	23.29	12.17
Control	60.62	71.8	11.12	

CURRICULUM VITAE

A. Identity

Name	: Isra Soliyah Siregar
Reg. Num.	: 14 203 00055
Place/Birth	: Sorimadingin Lama, December 21^{h} 1995
Sex	: Female
Religion	: Islam
Address	:Sorimanaon, kec. Angkola Muaratais

B. Parents

Father's Name	: Alm Pandapotan Siregar
Mother's Name	: Basaria

C. Educational Background

1. Graduated from Elementary School SD Negeri 100240 Muara Impres 2008
2. Graduated from Junior High School MTs Idrisiyah Pasir Nauli 2011
3. Graduated from Senior High School MAS Babussalam Basilam Baru 2014
4. Be University student IAIN Padangsidimpuan 2014

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Nomor : B - 394 /In.14/E/TL.00/02/2021
Hal : **Izin Penelitian**
Penyelesaian Skripsi.

29 Februari 2021

Yth. Kepala SMP N 1 Angkola Muaratais
Kabupaten Tapanuli Selatan

Dengan hormat, bersama ini kami sampaikan bahwa :

Nama	: Isra Soliyah Siregar
NIM	: 1420300055
Program Studi	: Tadris/Pendidikan Bahasa Inggris
Fakultas	: Tarbiyah dan Ilmu Keguruan
Alamat	: Desa Sorimanaon Kec. Batang Angkola Kab. Tapanuli Selatan

adalah Mahasiswa Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidimpuan yang sedang menyelesaikan Skripsi dengan Judul **"The Effect of Semantic Mapping on Student Reading Comprehension at Grade VIII SMP N 1 Angkola Muaratais"**.

Sehubungan dengan itu, kami mohon bantuan Bapak/Ibu untuk memberikan izin penelitian sesuai dengan maksud judul diatas.

Demikian disampaikan, atas kerja sama yang baik diucapkan terimakasih.

Dekan,

Dr. Lelya Hilda, M.Si.
NIP. 19720920 200003 2 002

PEMERINTAH KABUPATEN TAPANULI SELATAN
DINAS PENDIDIKAN DAERAH
SMP NEGERI 1 ANGKOLA MUARATAIS
ALAMAT : DESA SORIMANAON KEC. ANGKOLA MUARATAIS
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SURAT KETERANGAN
NOMOR:422 / /SMPN1/AM /2021

Yang bertanda tangan dibawah ini Kepala SMP Negeri 1 Angkola Muaratais kecamatan Angkola Muaratais Kabupaten Tapanuli Selatan, dengan ini menerangkan bahwa:

Nama	: ISRA SOLIYAH SIREGAR
NIM	: 1420300055
Program Studi	: Tadris/pendidikan Bahasa Inggris
Fakultas/ Jurusan	: Tarbiyah dan Ilmu Keguruan
Alamat	: Desa Sorimanaon Kec. Batang Angkola Kab. Tapanuli Selatan

Adalah benar telah melaksanakan penelitian di SMP Negeri 1 Angkola Muaratais dengan judul:

"The Effect of Semantic Mapping on Student Reading Comprehension at Grade VIII SMP N1 Angkola Muaratais".

Demikian Surat Keterangan ini dibuat dengan sebenarnya untuk dapat dipergunakan sebagaimana mestinya.

Sorimanaon, 10 Maret 2021
Kepala Sekolah

MONANG HARAHAP S.Pd
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In.14 [illegible] PP [illegible] 2017
Biasa

Padangsidimpuan [illegible] September, 2017

: *Pengesahan Judul dan Pembimbing Skripsi*

Kepada Yth Bapak/Ibu;
1. Dr. Fitriadi Lubis, M.Pd (Pembimbing I)
2. Fitri Rayani Siregar, M.Hum. (Pembimbing II)

Di-
Padangsidimpuan

Assalamu'alaikum Wr. Wb.

Dengan hormat, [illegible]

Nama : [illegible] Siregar
Nim : 14 [illegible]
Fak/Jurusan : Tarbiyah dan Ilmu Keguruan [illegible]
Judul Skripsi : THE EFFECT OF SEMANTIC MAPPING [illegible] COMPREHENSION AT GRADE VIII SMPN [illegible] MUARATAIS

Demikian surat ini disampaikan, atas perhatian dan kesediaan Bapak/Ibu [illegible] ucapkan terima kasih.

Ketua Jurusan Tadris Bahasa Inggris

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Mengetahui
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Dr. Lelya Hilda, M.Si
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Pernyataan Kesediaan Sebagai Pembimbing

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