



**THE EFFECT OF USING SPEED-READING STRATEGY IN
READING RECOUNT TEXT ABILITY AT GRADE VIII OF
MTS NEGERI 1 BINANGA**

A THESIS

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

Written By:

AHMAD TAHIR HARAHAHAP
Reg. Number. 13 340 0077

**ENGLISH EDUCATIONAL DEPARTEMENT
TARBIYAH AND TEACHER TRAINING FACULTY
INSTITUTE FOR ISLAMIC STUDIES
PADANGSIDIMPUAN
2020**



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Padangsidempuan, December, 2019
To:
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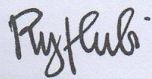
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After reading, studying and giving advice for necessary revision on thesis belongs to **Ahmad Tahir Harahap**, entitled "*The Effect of Using Speed Reading Strategy in Reading Recount Text Ability at Grade VIII Students' of MTs Negeri Binanga*", we approved that the thesis has been acceptable to complete the requirement to fulfill for the degree of Graduate of Education (S.Pd.) in English.

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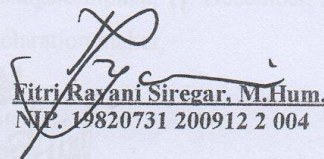
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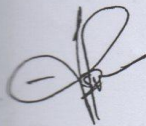
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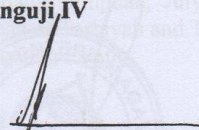
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ABSTRACT

This research focused on the effect of using speed reading strategy in reading recount text ability at grade VIII students' of MTs Negeri Binanga. In this research, the researcher found that students' mark in reading recount text ability was unsatisfied. The students' problem in reading recount text were: 1) students did not have background knowledge relate the text which they read, 2) students interest in reading still low, 3) students had limited vocabularies and also students passive in teaching learning process. Beside the students' problem, teacher's strategy also became a problem in learning reading recount text. The teacher still used the conventional strategy in teaching reading recount text. The purpose of this research was to examine the effect of using Speed Reading Strategy in Reading Recount Text Ability at Grade VIII Students' of MTs Negeri Binanga. The method used in this research was experimental research where the researcher chose two classes as the sample. They were VIII-1 as experimental class that consisted of 22 students and VIII-2 as control class that consisted of 22 students. To collect the data, the researcher used test for measuring the students' reading recount text ability by gave pre-test and post-test in *choose correct answer by crossing a, b, c, or d* form. To analyze the data, the researcher used t-test formula. After the data have been analyzed, the researcher found that there was the difference of mean score after using Speed Reading Strategy. Mean score of experimental class before using Speed Reading Strategy was 54.9 and mean score after using Speed Reading Strategy was 81.3. The effect of using Speed Reading Strategy in reading recount text ability was 4.343 with t_{count} is higher than t_{table} ($4.343 > 1.681$). It means H_a was accepted and H_0 was rejected. So, there was a significant effect of using Speed Reading Strategy in Reading recount Text Ability at Grade VIII Students' of MTs Negeri Binanga.

Keywords: *Speed Reading Strategy, Reading Recount Text.*

ABSTRAK

Penelitian ini berfokus pada pengaruh penggunaan strategi membaca cepat terhadap kemampuan membaca teks recount pada siswa kelas VIII MTs Negeri Binanga. Dalam penelitian ini, peneliti menemukan bahwa nilai siswa terhadap kemampuan membaca teks recount tidak memuaskan. Masalah siswa dalam membaca teks recount adalah: 1) siswa tidak memiliki latar belakang pengetahuan yang berhubungan dengan teks yang mereka baca, 2) minat siswa dalam membaca masih rendah, 3) siswa memiliki kosakata terbatas dan juga siswa pasif dalam proses belajar mengajar. Selain masalah siswa, strategi guru juga menjadi masalah dalam mengajar membaca teks recount. Guru masih menggunakan strategi konvensional dalam mengajar membaca teks recount. Tujuan dari penelitian ini adalah untuk menguji pengaruh penggunaan Strategi Membaca Cepat terhadap Kemampuan Membaca Teks Recount pada Siswa Kelas VIII MTs Negeri Binanga. Metode yang digunakan dalam penelitian ini adalah metode eksperimental di mana peneliti memilih dua kelas sebagai sampel. Yaitu kelas VIII-1 sebagai kelas eksperimen yang terdiri dari 22 siswa dan kelas VIII-2 sebagai kelas kontrol yang terdiri dari 22 siswa. Untuk mengumpulkan data, peneliti menggunakan tes untuk mengukur kemampuan siswa dalam membaca teks recount dengan memberikan pre-test dan post-test dalam memilih jawaban yang benar dengan memberi tanda (x) a, b, c, atau d. Dalam menganalisis data, peneliti menggunakan rumus uji-t. Setelah data dianalisis, peneliti menemukan bahwa ada perbedaan skor rata-rata setelah menggunakan Strategi Membaca Cepat. Nilai rata-rata kelas eksperimen sebelum menggunakan Strategi Membaca Cepat adalah 54,9 dan skor rata-rata setelah menggunakan Strategi Membaca Cepat adalah 81,3. Pengaruh penggunaan Strategi Membaca Cepat terhadap kemampuan membaca teks recount adalah 4,343 dengan t_{count} lebih tinggi dari t_{tabel} ($4,343 > 1,681$). Itu berarti H_a diterima dan H_0 ditolak. Jadi, ada pengaruh yang signifikan dari penggunaan Strategi Membaca Cepat dalam Kemampuan Membaca Teks Recount pada Siswa Kelas VIII MTs Negeri Binanga.

Kata Kunci: *Strategi Membaca Cepat, Membaca Teks Recount.*

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Ahmad Tahir

13 340 0077

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CHAPTER I

INTRODUCTION

A. Background of the Problem

Reading plays an important role in learning process, especially in learning a language. Reading can be defined as a process to build knowledge. Reading is a process done and used by the reader to obtain message to be conveyed by the author through the media word or written language. It is one of the important skills to get information.

Reading has correlation with the third skills. First, reading and listening have close relationship. Both of them have the same purpose, that is to get information. Second, reading has correlation to speaking. Someone who get more knowledge by reading, she/he can speak fluently to explain something. Last, reading and writing have close relationship. By reading, someone can write something. It is possible that someone able to write if their mind is empty. Then, the result of writing can be read. So, reading cannot be separated from the others skills for students to learn English because those skills are integrates.

Clay in George and Loretta define “reading is a getting of message, activity of problem-solving that improving power and flexibility and it can be more in practice”.¹ Through reading, students can find information from every version of written language. The skill of reading is very useful in

¹George. R. Taylor & Loretta Mac Kenney, *Improving Human Learning in Classroom: Theories and Teaching Practices*, (USA: A Division of Rowman & Littlefield Publisher, Inc, 2008), p. 230

various aspects of students' life. Reading will help students to be easy in interpreting language. Reading makes students are able to find every message of texts. Reading helps students learn to think. Then, it is a good way to find out about new ideas, facts and experiences. So, by reading the students able find many information, such as from the book, newspaper, magazine, comic, novel, and social media.

In junior high school of MTs N Binanga use Curriculum 2013. This curriculum is a basic educational component in teaching and learning process. In teaching English, this school not only develops listening, speaking or writing skill, but also reading skill. All of this are foundation to master English. Curriculum requires students to be able to read some kinds of genre in reading. Such as descriptive, narrative, recount, procedure, and et cetera. In this research the reseacher will be focus on reading recount text ability of the students.

Based on information from the English teacher Mrs. Mega Harahap at the grade VIII of MTs N Binanga. There are some factors that make students have difficulties for reading a text, they are: students do not have background knowledge, their reading skill still low, limited vocabulary and they passive in teaching learning process.²

First, students do not have background knowledge relate the text which they read. They only had a few experience about topic of the text. Actually, background knowledge could help process of reading is easier for

²Mrs. Mega Harahap, English Teacher at Grade VIII of MTs N Binanga, *Private Interview*, Tuesday 1 August 2017 at 09:00 am.

students. As a result, when they read they could not reading properly to catch the main point from the text, it is very hard for them.

Second, students' reading skill still low. They did not enjoy for reading because the text was bore and topic of the text was uninteresting. Therefore, the school does not have adequate facilities, textbooks and general reading books are not fully collected. Then, the influence of technology and the internet. It means, most of the students use the internet to play online games. So, they were lazy for reading the text especially the long text, and also prefer to play online games.

Third, students had limited vocabulary. Actually, having many vocabularies were needed to comprehend what they have read. Knowing many vocabularies related to the topic of the text was really helpful for the students when they are reading a text. Unfortunately, their vocabulary are few. So, the students were difficult for reading text.

The last factor is students passive in teaching learning process, teacher teaches the students by using traditional reading. It means, the teacher of English language teaching by lecture method and loudly reading strategy which makes the students felt bored, difficult to understand and also the students still not confidence for reading the text. Therefore, the students can not reading text correctly. For example; the teacher only giving a text and asked the students to read it. It makes the students felt bored. So, the teacher needs to be more creative in teaching, including the teaching reading strategy

and use of media. Which able given an effect to students and exam reading ability of the students.

The above problems should be sought solution because the problems could be effect, less information and knowledge. There are some strategies that can be used to read; such as, speed reading strategy, KWL (know-want to know-learned), SQ3R (survey, question, read, recite, review), PQ4R (preview, question, read, reflect, recite, review), GMA (group mapping activities), QAR (question-answer-relationship), CRS (critical reading strategy), DRA (direct reading activity), DRTA (direct reading thinking activities). All of them can help students to read a text more easily. These strategies theoretically judged to be good to apply in reading a text. In this research, the researcher try to apply speed reading strategy.

Speed reading is one of the strategies that can be used to teach reading. It is a strategy that has several techniques to effect reading skill. Speed reading focuses on the rate of reading. It can be also identified as a reading faster. Speed reading is seeing; the first step in reading anything is seeing the words. But how do you see words on the page when you read. To read, you though moved your eyes left to right across the page, taking in one word after the other.³

Konstant clearly states the definition of speed reading:

Speed reading is not just about reading words faster than before. It is about being able to read at a speed appropriate for the material in reading. Reading slowly makes mind will wander. It can cause bored.

³Richard Suth with Peter Weverka, *Speed Reading for Dummies*, (Wiley Publishing: Canada, 2009), p. 10.

Mind cannot remember anything. Reading too fast will reduce the chance of remembering and makes mind stressed and frustrated.⁴

Furthermore, speed reading is related to memory. Concentration is much needed when students read faster than they did before. Speed reading is not only reading the material faster, but also it can help the reader catch and remember information that lies on the book. In contrast, if students read the material too slow, the brain will be bored to catch the information. This strategy can make them easy to catch the information and knowledge from book be quickly in the short time. So, this strategy can be effectively use by the teacher in the classroom and make more interesting learning process. Furthermore, that is make speed reading strategy is useful for everybody.

Based on above phenomena, the researcher intends to find the answers of the entire problems above. Therefore, the researcher was interested in carrying out a research entitled **“The Effect of Using Speed-Reading Strategy on Reading Recount Text Ability at The Grade VIII Students’ of MTs Negeri Binanga”**.

B. Identification of the Problem

Based on the background of the problem above. There are some factors students problems the successfulness of students reading skill at MTs Negeri Binanga. They are; The first, students did not have background knowledge relate the text which they read. The second, students’ interest in

⁴Konstant, Tina, *Teach Yourself*, (London: Great Britain for Hodder & Stoughton Educational, a Division of Hodder Headline LTD, 2003), p. 25.

reading still low. The third, students had limited vocabularies. The last, students passive in teaching learning process.

C. Limitation of the Problem

The problem of reading English is very large. The researcher need to limit of the problem which would be investigated. Based on the identification problem above, the researcher limited on reading recount text ability of the student by using speed reading strategy. So, this research about the effect of using speed-reading strategy in reading recount text ability at grade VIII of MTs Negeri Binanga.

D. Formulation of the Problem

Based on the limitation of the problem above, the formulation of the problem in this research can be formulated as

1. How is before using speed reading strategy in reading recount text ability at grade VIII students of MTs Negeri Binanga?
2. How is after using speed reading strategy in reading recount text ability at grade VIII students of MTs Negeri Binanga?
3. Is there a significant effect of using speed reading strategy in reading recount text ability at grade VIII of MTs Negeri Binanga”?

E. Definition of Operational Variables

1. Speed Reading Strategy as a Variable X

Speed reading strategy is some way of reader to get information from the text be quickly in specific unit time. So, speed reading strategy is

strategy of readers to get some information be quickly by using eye movement.

2. Reading Recount Text Ability as a Variable Y

Recount text is a text of giving information by text, to retell events for the purpose of informing or entertaining.⁵ Recount text means the form of the text telling about someone experience in the past there for experience of the reader themselves, such as their adventure and their day's activities.

So, recount text ability is ability for someone that can get information from the text, the text is tell past events which occurred in a sequence.

F. Outline of the Thesis

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

Chapter I discuss about introduction; consist of background of the problem, identification of the problem, limitation of the problem, formulation of the research, definition of operational variables, outline of the thesis purpose of the research, significance of the research.

Chapter II contains about theoretical description with some sub theory about reading, speed reading strategy, reading recount text and review of related findings, conceptual framework, and hypothesis.

Chapter III is about research methodology that consist of place and the time of the research, research design, population and sample, instrument

⁵Linda Gerot and Peter Wignell, *Making sense of functional grammar*, (Australia: Gerd Stabler, 1994), p. 194.

of research, test of instrument, procedure of the research, and the last technique of data analysis.

Chapter IV is the result of the research talking about the analysis data. This chapter four, it is consist of description of data, technique of data analysis, hypothesis test, the students' WPM and ERR, discussion and the treats of research.

Chapter V is giving conclusion about the result of research and suggestion which given to students and teacher by researcher.

G. Purpose of the Research

Based on the formulation above, the purpose of this research is to examine whether there is significant effect of using speed-reading strategy in reading recount text ability at grade VIII of MTs Negeri Binanga.

H. Significant of the Research

The significances of this research can be described as follow:

1. As input For the Headmaster of MTs Negeri Binanga in building and motivating the teachers of english in teaching English.
2. For the English teachers of MTs Negeri Binanga. This research can useful for teacher as source teaching. It can be improving learning process of the students, study result increase students study interested in the class.
3. The researchers, who want to do research the same problem as information about the topics.

CHAPTER II

THEORETICAL DESCRIPTION

A. Theoretical Description

Theories were very necessary for explaining some concepts of terms applied in this research. The theories as follow:

1. Defenition of Speed Reading Strategy

a. Speed Reading

Speed reading is the rate at which a person reads written text in a specific unit time. Speed reading is generally calculated by the number of words read per minute. Speed reading is improving a reader's reading ability. This strategy help to get information or comprehend the text quickly in the short time and can make advantages to the students, more easy to understand what the meaning of the word, more interesting, and more active in learning process.

Abby Marks Beale states the defenition of speed reading:

Speed reading is a series of active, mindful, and conscious reading strategies that enable readers to read efficiently and effectively. Speed reading is not about reading fast all the time, it's about; knowing how and when to speed up and when to slow down, reading at the speed appropriate for the material, shifting your gears, as needed, for the conditions of the reading road and being a flexible reader.⁶

According to Nurhadi says that, speed and effective reading is a type of reading that prioritizes speed without leaving an understsanding

⁶Abby Marks Beale with Pam Mullan, *The Complete Idiot's Guide to Speed Reading*, (USA: Published by Penguin Group, 2008). p. 16.

of the aspects of reading.⁷ It means not only the speed that becomes the standards, but also with the understanding of text. Speed reading is a reading system by taking into account the reading time and level of the understanding of the material it reads. If a person can read with a little and high understanding of such a person can be speed readers.

Based on the opinion of experts above, speed reading can be interpreted as a way that someone to read with a relatively fast time with emphasis on the process of thinking and remember what have you read.

According to Kamalasari from Asep, et.al. The speed reading ability of junior high school students is categorized as follows:

The number of words read in per minute, that is:

201 – words per minute = very good

151 – 200 words per minute = good

101 – 150 words per minute = enough

50 – 100 words per minute = less.

Standard for understanding reading content, that is:

91% – 100% correct answer = very good

81% – 90% correct answer = good

71% – 80% correct answer = average

61% – 70% correct answer = less

... .. – <60% correct answer = very less.⁸

Based on the description above it can be concluded that the speed reading of students is 200 words per minute and understanding the contents of the reading is at least 75%.

⁷Nurhadi, *Membaca Cepat dan Efektif, Teori dan Latihan*, (Jakarta: Sinar Dunia Algensindo, 2008), P. 31.

⁸Vidya Kamalasari, “Latihan Membaca Cepat Sebagai Upaya Meningkatkan Kemampuan Membaca Cepat dan Pemahaman Bacaan”. (retrieved from <http://jurnal.unimed.ac.id/2012/index.php/basastra/article>, on February 20th 2019 15.00 pm).

Study in America obtained the speed reading:

Elementary school level : 200 words per minute

Junior high school level : 200 – 250 words per minute

Senior high school level : 250 – 350 words per minute

College level : 350 - 400 words per minute.

If must be accompanied by understanding content a minimum reading of 70%, the effective reading rate (ERR) is :

Elementary school level : $200 \times 70\% = 140$ wpm

Junior high school level : $200 - 250 \times 70\% = 140 - 175$ wpm

Senior high school level : $250 - 350 \times 70\% = 175 - 245$ wpm

College level : $350 - 400 \times 70\% = 245 - 280$ wpm.⁹

a) Characteristics of Speed Reading

Several interesting point including the shortcomings among phonetic language readers were published by Ed Strachar (*Reading Genius*) and the Division of Students Affairs Department of Virginia Polytechnic Institute and State University (VPISU):

1. Although the avarage human being holds up to 80% of unused mental capacity, most people have never learned to access this.
2. The avarage person reads less than one whole book a year! 95% of all books purchased don't get read past the first or second chapter!
3. people who actually finish reading an entire book usually do it in several days to several weeks, but retain only 10-15% of the content!
4. The single greatest problem that most people encounter while reading is that instead of being 100% focused on the words and information before them, they are thinking about 5-10 different things at the same time.

Most people all too often reach the bottom of the page, or the end of a paragraph or chapter, only to realize that they need to return to the beginning and read it again because they were not focused on the content.

5. The average college students reads between 250-350 words per minute (wpm) on fiction and non technical materials. Although a respectable reading speed is considered to be between 500 to 700 wpm, most people have the capacity to read at least a thousand words or more. An editorial by Daniel S. Pena Sr., from the Reading

⁹Juni Ahyar, "Membaca Cepat Pemahaman Mahasiswa Universitas Malikussaleh", *Jurnal Visioner & Strategis*, Vol 4, No 2, September 2015, ISSN : 2338-2864, p. 4. (retrieved from http://repository.unimal.ac.id/2302/1/Jurnal.pdf&ved=2ahUKEwjt_K2_o, March 10th 2019 09.20 am).

Genius home page, noted “After learning the latest speed reading strategies, I went from reading 225 wpm with 70% comprehension to 3,000 wpm with the same comprehension”.¹⁰

Based on the explanation above, researcher can conclude that people who actually finish reading an entire book usually do it in several days to several weeks, but retain only 10-15% of the content. However, if someone reading some book by using speed reading strategy it will be improve their reading rate wpm and their comprehension.

b. Speed Reading Strategy

Speed reading strategy is a blend of motor skill (eye movement) or visual ability with a person’s cognitive abilities in reading. The ability to speed reading is a skill in selecting the content of the reading that must be read accordance with the objectives that have relevance to the reader, without wasting time to pursue other parts that are not needed.¹¹ The strategy of speed reading, just to get the overall picture, without consulting a dictionary, is known as speed reading. Letting your eyes glance at units of words like phrases, instead of single words, is helpful in speed reading.¹²

¹⁰William Brooks, “Speed-Reading Techniques”. (retrieved from <http://jairo.nii.ac.jp/0376/00000827>, on March 5th 2019 13.31 pm).

¹¹Irwan Widiatmoko, *Super Speed Reading*, (Jakarta: PT. Gramedia, 2011), p. 19

¹²Sutanto Leo, dkk, *English for Academic Purpose Essay Writing*, (Yogyakarta: Andi, 2007), p. 9

For example; imagine your travel from Bandung to Semarang on an express bus. You want to reach your destination quickly. No stops are made on the journey for eating or sightseeing or taking photographs.

This is like a quick reading of an article or book. Of course, you may read it in stages. Of course, you can eat a meal before you finish reading it. However, the reading is quick, with no deep thinking on your part. You do not even need to look up words in the dictionary in this quick reading, as long as you see the 'big picture' of what you are reading.¹³

So, speed reading can be defined as the rapidity which one reads most of the words on the printed page. It can be expressed as the number of words read within any given time period. Interest in speed reading grew from studies in eye-movements. It was discovered that there were differences between the way poor and good readers read and that speed reading could be increased with training. Speed is also the most readily measured phenomenon associated with reading. It has also be provide to be the most easily improved reading skill.

The important of knowing and applying the statregy of speed reading will make us more speed reading and understand what is read. In fact, not every word printed in the book should be read, and not all book details should be studied, the selected reading source and the

¹³ Sutanto Leo, dkk, *English for Academic...*, p. 8

reading strategy use will determine the extent to which we can quickly understand the passage.

Sometimes we just want to read enough to know the perspective of the writer or to locate the general idea, not to get detailed information. The technique of skim reading or skimming can be used for this purpose. It is also described as running your eyes over a text to get a quick idea of the gist of a text, to get general understanding not looking for details.¹⁴

Skimming is done to get a general impression of a reading. When the table of contents read the attention of the reader only to the points in question. When reading a chapter of a book then the reader's attention is only to the title of the chapter and sub title to get the general idea. In skimming contains the meaning of searching for the essence, the essence of the reading material.¹⁵

Based on the definition above, researcher conclude that Skimming is an activity to take the point of something that you read; it tries to find out the important things from the text. It is also used to know the topic if the text people's ideas, important part, and organization of writing and sequences of mind ideas. In Indonesian skimming can be stated as “menggaris bawahi yang penting dalam bacaan” or making the underline to the important information in the text.

¹⁴Sutanto Leo, dkk, *English for Academic...*, p. 9

¹⁵Djago Tarigan dan Guntur Tarigan, *Teknik Pengajaran Keterampilan Berbahasa*, (Bandung: Angkasa, 1990), p. 169-170

In skimming it is fair to leave out material. You may leave out half or three quarters of a paragraph if you've grasped the main idea. In skimming, one intentionally accepts less comprehension. If the reader gets 50-60 percent, it means that the reader gets good average skimming. If we get 70-80 or 80 percent when skimming, it means that you are not skimming nearly fast enough.¹⁶

Based on the theory above, a researcher can make a conclusion that in skimming you read section only, skipping to find the next section of interest. Concentrate on following the main ideas and blocking out detail and also you can skim to find out what the writer thinks about something.

In longer works, you may choose certain parts to read quickly. Looking at the Contents and Index of various books helps us to know which books are going to be most helpful, if you do this, you are using a strategy of reading called scan reading. "scanning is very fast reading. When you scan, you look for information as quickly as you can... When scan you can't read every word. You have to skip many words."¹⁷

Based on the explanation above, the researcher can conclude that when you read some book and you used scanning. It means, you can't read every word and you have to skip many words.

Scanning is reading strategies to read the detail information faster. According to Djamal says that, scanning is the ability to locate

¹⁶Zainil, *Reading Theories*, (Padang: Universitas Negeri Padang, 2003), p. 92.

¹⁷Sutanto Leo, dkk, *English for Academic...*, p. 9.

specific information (you know what you are looking for).¹⁸ It is supported by Zainil who stated that scanning as a reading technique used when one wishes to locate a single fact or a specific bit of information without reading everything. It can be concluded that scanning is the ability in reading to find or to locate specific information. In Indonesian scanning can be meant as “memberi tanda ✓ (ceklis) pada data yang diperlukan dalam bacaan” or giving a sign to the information needed from the text.

Scanning is not new for you as a reader, this reading skill have used so many times when reading. You have used your scanning abilities when looking for the time and channel of your favorite show in television listing of your newspaper or in television magazines. You have also probably scanned page in your telephone directory many times to find a friend’s address or telephone number. You simply move your eyes quickly down the page until you locate the name, address and number, and then look no further.¹⁹

Based on the explanation above, the researcher can conclude that the reader must be looked the information fast and accurate. Because scanning is done to find information quickly and scanning is very fast reading.

c. Basic Technique of Speed Reading Strategy

¹⁸Murni Djamal, et, all, (team of five), *Improving Reading Skill in English for University Students*, (Jakarta: Darul Ulum Press, 2001), p. 53.

¹⁹Zainil, *Reading Theories...*, p. 98.

Speed reading is not just about recognizing the set word or eliminate bad habits that hamper. One aspect which is often over looked are the technique as well as the good attitude when read. Here are the technique to speed reading:

1. Relax

A relaxed body helps better absorption of information. But not only that, mind also must be fresh. Relaxed position while increasing concentration and speed. So, body and mind has relationship in speed reading.

2. Recognize words quickly

In the process of reading, the eye acts as the sense that capture the words in the reading material. The words are the sent to the brain to be recognized as a vocabulary, word group, or understanding a sentence. it turns out that the human brain is able to process words well even when the sequence is turned back and forth. Try to read the following text:

The ability to speed reading is closely related to the ability to recognize words. The humans recognize various words through the books and writings have you read. These words are stored in the memory of the brain and will be recognized faster when they are rediscovered in the new reading material.

Even better, it turns out the word really doesn't really matter as long as the first and last letters don't change. You only to recognize the first and last letters, then with amazing abilities it will recognize it as a word like you read now. This is according to research carried out by Cambridge UK University.²⁰

²⁰Muhammad Noer, *Speed Reading for Beginner, Panduan Membaca Lebih Cepat, Lebih Cerdas dan Pemahaman lebih Baik*, (Jakarta: PT Gramedia Pustaka Utama, 2012), p. 46

Now compare with the original text

The ability to speed reading is closely related to the ability to recognize words. The humans recognize various words through the books and writings have you read. These words are stored in the memory of the brain and will be recognized faster when they are rediscovered in the new reading material.

Even better, it turns out the word rules don't really matter as long as the first and last letters don't change. You only to recognize the first and last letters, then with amazing abilities it will recognize it as a word like you read now. This is according to research carried out by Cambridge UK University.²¹

Most people will not experience significant difficulties to read the first text. Maybe the speed reading will be slower because the text is flipped. Nevertheless the text is still quite readable and recognizable as a vocabulary that we have previously identified.

3. Read word groups

In speed reading technique, that is done is to widen the fixation and speed up the process. In speed reading we will train to catch two, three, four or even five words at a time to speed up the reading process. For example:²²

In speed reading, fixation is widened so capable to read several words

at once. Other than that, displacement between fixations is accelerated and made rhythmic.

4. Two-handed cooperation

²¹Muhammad Noer, *Speed Reading...*, p. 47

²²Muhammad Noer, *Speed Reading...*, p. 50

When speed reading begins to increase, speed and cooperation both hands in holding the book, directing the eyes to read writing, and flipping pages become important. With the cooperation of two good hands will make a person read faster and effective.

5. Using silent reading

To be a speed reader, one thing that should be mastered is silent reading. It can help to increase reading speed. Silent reading means that reading with no vocalizing the word that we read. Zainil says that vocalizing is a distraction factor in reading fast. It can decrease your reading speed.²³ The same argument it also stated by Sutz and Weverka that Vocalizing slows your reading down considerably and it is a bad habit that should be break.²⁴ So, in speed reading strategy, the use of silent reading is much needed.

6. Using pacer to focus while reading

Pacer is a simple tool that can eliminate speed reading problems. A pacer is a tool that can be used to focus and give attention on the words on the page by moving it by reading the material. Konstant²⁵ clarifies that a pacer helps to eliminate most distractions, and it involves an extra sense in reading process. It

²³Zainil, *Reading Theories...*, p. 103.

²⁴Richard Sutz and Peter Weverka, *Speed Reading for Dummies* [electronic book] (Canada: Wiley Publishing, Inc. 2009), p. 23.

²⁵Tina Konstant, *Teach Yourself* (London: Great Britain for Hodder & Stoughton Educational, a Division of Hodder Headline LTD, 2003), p. 29.

encourages eyes to focus on more than one word at a time. This immediately increases your reading rate.

7. Reading aggressively without regression

Speed reading is a state of mind in which reading is more aggressively. In many ways, speed reading is just the act of reading with a deeper level of concentration and efficiency. It is caused by reading several words at the same times. Detecting and reading word group with a single eye fixation. Afterwards, reading aggressively without regressing. Regressing can decrease the concentration in reading. Obviously, regression slows your reading speed. It takes twice as long to turn back and read what already read. Worse, regression also slows comprehension because it can make you lose the flow of meaning in the words.²⁶

Based on the explanation above, researcher can conclude that reading aggressively is reading without regressing because it can make you lose the flow of meaning in the words.

8. Using speed reading strategy,

Read the paragraphs under the title, quick reading” by yourself, using the technique of speed reading. Allow your eyes to

²⁶Richard Sutz and Peter Weverka, *Speed Reading...*, p. 33.

look widely at chunks of the text instead of reading word for word.

Practice a few times.

Read the paragraphs by scanning, searching for words these paragraphs say about the technique of speed reading, skim reading, and scan reading. Practice these a few times.²⁷

9. Measuring or Test of Speed Reading

a. The Formula of Word Per Minute (WPM) Testing

The WPM test is not very different from a typing test. All it measures how many words the student's read per minute. Experts use the following formula to get the results for a WPM reading test:²⁸

Alternative 1 (unit of minute)

$$\frac{K}{Wm} = Kpm$$

Alternative 2 (unit of second)

$$\frac{K}{Wd} \times 60 = Kpm$$

Where:

- a) K : the number of words read
- b) Wm : the time needed to read in minutes
- c) Wd : the time needed to read in seconds
- d) Kpm : words per minute (Wpm).

²⁷Sutanto Leo, dkk, *English for Academic...*, p. 9-10.

²⁸Juni Ahyar, "Membaca Cepat Pemahaman Mahasiswa Universitas Malikussaleh", *Jurnal Visioner & Strategis*, Vol 4, No 2, September 2015, ISSN : 2338-2864, p. 4. (retrieved from http://repository.unimal.ac.id/2302/1/Jurnal.pdf&ved=2ahUKEwjt_K2_o, March 10th 2019 09.20 am).

According to Peter Shepred,²⁹ your speed reading can be calculated by using the following formula; Words per minute (speed) = (number of pages read) times (number of words per average page), divided by (the number of minutes spent reading).

According to Richard Sutz and Peter Weverka,³⁰ the words per minute (WPM) test is not very different from a typing test. All it measures how many words you read per minute. Experts use the following formula to get the results for a WPM reading test: Words read ÷ reading time in minutes = WPM rate.

For example: someone who takes 2 minutes to read 700 words reads at a 350 WPM rate: $700 \div 2 = 350$. Someone who takes 120 seconds to read 700 words read at a 350 WPM rate: $\frac{700}{120} \times 60 = 350$.

So, to measure of reading ability of someone stated in WPM (word per minute).

b. The Formula of Effective Reading Rate (ERR) Testing

The effective reading rate measures comprehension as well as speed. ERR testing is a more thorough measure of speed reading rates than WMP testing because it tests comprehension, retention and recall. The test also indicates how strong vocabulary is and the knowledge reserves that bring when reading.

²⁹Peter Shepred and Gregory Unsworth-Mitchell, *The Speed Reading Course.*, p. 6.

³⁰Richard Sutz and Peter Weverka, *Speed Reading...*, p. 76.

Experts use the following formula to get the results of an ERR test:³¹

$$\text{WPM rate} \times \text{comprehension percentage score (as decimal)} = \text{ERR}$$

For example : Someone who reads 700 words at 350 WPM and answers 80 percent of the comprehension questions correctly reads at a 280. ERR rate: $350 \times 80\% = 280$ ERR

For example: $250 \times 70\% = 175 = \text{ERR}$

Many people consider this number more reliable as a real indicator of progress compared to two separate result, that is just reading speed and understanding. In order to increase the effective reading rate, generally on of the following three things must happen:

- 1) Speed increases, permanent understanding
- 2) Permanent understanding, Speed increases
- 3) Both of them have increased.³²

So, if you want to increase effective reading rate the above things must be achieved.

d. Bad Habits in Speed Reading

³¹ Richard Sutz and Peter Weverka. (2009). *Speed Reading for Dummies* [electronic book] Canada: Wiley Publishing, Inc. p. 76

³²Gordon Wainwright, *Speed Reading Better Recalling, ...* p. 42.

According to Irwan W, there are some errors or habits bad people generally do when reading fast, they are:

1. Vocalization

Vocalization means reciting what is read. Rate this vocalization varying in each person including the high sounds pronounced. The vocalizations will cause the reading speed to drastic to be equivalent speed of speech.

2. Lip movements

Lip movements are very similar to vocalizations. The difference is if vocalization sounds, then the movement of the lips there is only movement without sound. Because the talking tool used is basically the same is using the lips and tongue, can be ascertained the speed of reading with it is also equivalent to the speed of speech.³³

3. Head movement

Many people when reading their head come along to follow word for word in reading material. This habit will hinder the speed of reading because the actual head movement is far less than eye movement.

4. Regression

³³Irwan Widiatmoko, *Super Speed Reading*, (Jakarta: PT Gramedia, 2011), p. 40.

Regression is a habit of reading material repeating it for fear what have read not understand. Imagine if on one page yo do it 10 - 15, how much time has been wasted.³⁴

e. The Advantages and Disadvantages of Speed Reading Strategy

Speed reading is highly dependent on the attitude, level of seriousness, and readiness to practice fast reading. Here are the various uses of speed reading that saves time, produces efficiency and effectiveness.³⁵

If we read a book with speed reading strategy, then we will get some advantages and disadvantages, According to Irwan Widiatmoko state that there are some meaning that can be obtained from speed reading, namely; 1) Knowing the topic of reading, 2) Knowing the opinions of others or opinions, 3) Getting important parts that can be needed, 4) Knowing the organization of writing, 5) Refreshing of what ever read, 6) Searching information, 7) Tracing the page material books or reading in a short time, and 8) Not much time is wasted.³⁶ Then, according to Muhammad Noer there are three the advantages of speed

³⁴Muhammad Noer, *Speed Reading for Beginner, Panduan Membaca Lebih Cepat, Lebih Cerdas dan Pemahaman Lebih Baik*, (Jakarta: PT Gramedia Pustaka Utama, 2012), p. 45.

³⁵Krisyani Laksono, *dkk. Membaca 2*, (Jakarta: Universitas Terbuka, 2008), p. 3-5-7.

³⁶Irwan Widiatmoko, *Super Speed Reading...*, p. 20-21.

reading strategy; 1) Choose important information and not important information, 2) master information quickly, 3) improve understanding.³⁷

Then, according to Soedarso in his book entitled speed reading explained that there are some advantages of speed reading include:

- 1) Faster completion of a reading so that we feel enthusiastic to read other reading.
- 2) Facilitate us to quickly master the information.
- 3) Can be applied in any reading, such as: books, newspapers, magazines, textbooks and others.
- 4) It is appropriately applied by hasty or time constraints.
- 5) Can help someone to make considerations / decide something, for example that is related in making a report an activity.
- 6) It is helpful for students to know the basic idea of their handbooks.³⁸

Disadvantages of speed reading strategy is a sense of confusion or lose the understanding of what has been read because they have not or less so master the skills of reading by using speed reading strategy, hence from it exercises so that they master the skills of speed reading.

2. Teaching Speed Reading Strategy

Based on Lauren, the steps in teaching speed reading strategy are:

- a. Teacher begins by picking a block of text, such as a page or couple of paragraphs.
- b. Teacher asks the students to go through different blocks of text and highlight the important major points of each line.
- c. Teacher asks the students to go back over the highlighted text and read just the highlighted area.
- d. Teacher teaches the students to read the text aggressively and without regression

³⁷Muhammad Noer, *Speed Reading for Beginners, Panduan Membaca Cepat, Lebih Cerdas, dan dengan Pemahaman yang Lebih Baik*, (Jakarta: PT Gramedia Pustaka Utama, 2012), p. 32.

³⁸Soedarso, *Speed Reading, Sistem Membaca Cepat dan Efektif*, (Jakarta: PT Gramedia Pustaka Utama, 2006), p. 25.

- e. Teacher helps the students to use their hand to keep focus while speed reading.
- f. Teacher keeps timing the students' reading regularly.³⁹

Based on the explanation above, researcher can conclude that in speed reading strategy some reader must be focus on the important material, reading aggressively without regression and also don't forget to timing the reading regularly.

3. Conventional Strategy

Conventional strategy is the strategy or the way that usually used by the teachers to teach the text to students.⁴⁰ According to Hudson that conventional strategy is the strategy used by the teachers based on mutual agreement in a school.⁴¹ In addition, it uses the traditional way in teaching and learning process. The researcher concluded that conventional strategy is the way that is used by the teachers in teaching a material based on the agreement of the teacher at school.

The procedure used by the English teachers at MTs Negeri 1 Binanga, are as follows:

- a. Explain the subject matter
- b. Identify the difficult words
- c. Ordering the student translate at home

³⁹Lauren, Wise, *How to Teach Speed Reading*. [electronic article] USA: Demand Media, Inc. p. 1.

⁴⁰Jhon Deriden, "Conventional Strategy", (retrieved from <http://www.britannia.com/EBchecked/topic/421797/nuclear-strategy/52993/conventional-strategy>, on March 24th 2018 10.00 a.m.)

⁴¹Hudson, "The Meaning of Conventional Strategy", (retrieved from <http://www.conventional-strategy/topic/54372-strategy>, on March 24th 2018 10.00 a.m.)

d. Answering the question.⁴²

Based on the information from English teachers at MTs Negeri Binanga. The researcher concluded that conventional strategy was used by teachers is not effective. Because, if like that will make the students' feel bored, passive in learning process and also make students' less comprehend about the material.

4. Reading Assessments

a. Reading Assessments

Assessments require planning and organization. The key lies in identifying the purpose of assessment and matching instructional activities to that purpose. Assessment is a tool to measure how far the students ability and comprehension of the material. In assessing reading, there are some indicators.⁴³

No	Indicators of Reading
1	Identifying topic sentence
2	Identifying main idea
3	Identifying specific and important information
4	Identifying vocabulary
5	Identifying conclusion

⁴²Private Interview, Mrs. Mega Harahap, on March 16th 2018 at 10.30 a.m.

⁴³J. Michael O, Malley and Lorraine Valdez Pierce. *Authentic assessment for English Language learners* (United States of America: Addison-Wesley Publishing Company, 1996), p. 98.

There are some techniques in assessing or testing, one of them is multiple choice questions. A multiple choice test item is usually set out in such a way that the candidate is required to select the answer from a number of given options. Only one of which is correct, the marking process totally objective because the marker is not permitted to exercise judgment when marking the candidate's answer, agreement has already been reached as to the correct answer to each item.⁴⁴

Similarly, multiple choices are the candidate provides evidence of successful reading by making a mark against one out of a number of alternatives, the superficial attraction of his technique is outweighed in institutional testing by various problems enumerated. In conclusion, multiple choices are a form of evaluation in which respondents are asked to select the best possible answer out of the choices from list.

Weir lists advantages and disadvantages of multiple choice tests, as below:

The advantages of multiple choices:

- a. The marking, as being reliable is simple, more rapid and often more cost effective than other forms of written. The formats of the multiple choices test items are such that the intention of the test compiler is clear than candidates know what is required of them.
- b. In multiple-choice tests there is almost complete marker reliability. Candidates' marks, unlike those in subjective formats, cannot be affected by the personal judgment of the marker.
- c. In more open-ended formats, example short answer questions, the candidate has to deploy the skill of writing.

⁴⁴Cyrill J. Weir, *Communicate Language Testing* (New York: Prentice Hall, 1990), p.43

- d. Because items can be pre-tested fairly easily, it is usually possible to estimate in advance the difficulty level of each item and that of the test as a whole.

The disadvantages of multiple choices:

- a. The scores gained in multiple choice tests, as in true-false test, may be suspect because the candidate has guessed all or some of the answers.
- b. There is however a number of problems associated with used of this format.
- c. A further objection to the use of multiple choice formats is the danger of the format having an undue effect on measurement of the trait.
- d. Multiple choice tests take much longer and are more expensive and difficult to prepare than essay test.⁴⁵

Based on advantages and disadvantages of multiple choices

above, the students are easy to answer question about the test, the researcher found advantages multiple choice are In multiple-choice tests there is almost complete marker reliability, and disadvantages are Multiple choice tests take much longer and are more expensive and difficult to prepare than essay test.

5. Reading Recount Text

Reading recount text is one of important knowledge in reading. Recount text can be considered as the most common kind of text we can the past. Knapp says recount text is a sequential text that does little more than sequencing a series of events.⁴⁶ It means that recount text considered as the simplest type of narrative genre.

⁴⁵Cyrill J. Weir, *Communicate Language Testing* p. 50.

⁴⁶Knapp, Peter and Megan Watkins, *Genre, Text, Grammar : technologies for teaching and assesing writing*, (Sidney: University of New South Wales, 2005), p. 23.

Furthermore Kurniawan says that recount text is a text which explain or report about an event happened in the past for the purpose of informing or entertaining.⁴⁷ It means that recount text is as information or amuse by someone. Djuhairi says that recount text is a kind of text which is content tells an event, happened or activity which ia happened to someone or someone's experience.⁴⁸ It means that recount text is a text which tell an event or happened. More Pardiyono says that recount text is a text which made for purpose to inform about that happened in the past.⁴⁹ It means that recount text to inform that happened in the past.

From the quotation of the defenition above, the researcher make a conclusion that recount text is a text which retell past activities or an event happened in the past. It means that the purpose of the recount text is to inform about past activities. In this research, the writer indicates the important aspect that should be discuss in reading recount text are: a) the generic structure of recount text, b) the social function of recount text, and c) the language features of recount text. So, the researcher discussed for them by clearly, as follow:

a. The Generic Structure of Recount Text

Recount text has the generic structure that should be understood by the students'. Generic structure is the way in which elements of a text are arranged to match its purpose. This structure can be observed

⁴⁷Arief Kurniawan and Yeni Yuniati, *Mengeplorisasi Jenis - jenis Teks Bahasa Inggris*, (Jakarta: Multi Kreasi Satudelapan, 2010), p. 40.

⁴⁸Djuhairi dan Otong Setiawan, *Genre Dilengkapi 700 Soal Uji Pemahaman...*, p. 44.

⁴⁹Pardiyono Pastibisa, *Writing Clues for Better Writing Competence*, (Yogyakarta: Andi Offset, 2006), p. 64.

by readers, and the writer use this knowledge to structure their reading, depending on their purpose. Djuairi says that there are three elements of generic structure of recount text, they are:

- 1) Orientation: Orientation consist of opening, introduction the participant, time and the place. As Otong says: “Orientation refers to part of the which gives setting or introduction”. It means that after the reader read and orientation of the text, the reader can gues the content of the text.
- 2) Events: An events is a part of structure of recount text that contain sequences of phenomenon or tells what happened in the story. Otong says that event is sequence of event. So, events refers to show phenomenon that happen.
- 3) Re-orientation: Re-orientation refers to the part of text that gives indication that the events in the text have finished.⁵⁰ So, re-orientation is a part of structure of recount text contains optional closure of the event in the text.

Thus Kurniawan says that the generic structure of recount text are:

- 1) Orientation: its provides the setting and introduces the participants.
- 2) Events: they tell what happened in what sequence.
- 3) Reorientation: its an optional or closure of events”. It means generic structure of recount text is three elements; it is orientation, events and reorientation.⁵¹

⁵⁰Djuhairi dan Otong Setiawan, *Genre Dilengkapi 700 Soal Uji Pemahaman*, (Bandung: Yana Widha, 2007). p. 44.

⁵¹Arief Kurniawan dan Yeni Yuniati, *Mengekplorisasi Jenis - jenis Teks Bahasa Inggris...*, p. 42.

b. The Social Function of Recount Text

Recount text has the social function; social function is the purpose of the text or also known as a communicative purpose. Recount text is a kind of text in genre to inform or to retell that happened in the past. Pardiyono says that social function of recount text; to reconstruct, to record events or activities for the purpose of informing.⁵² It means that in recount text can retell that story in the past.

Thus Djuhairi says that social function of recount text; it is either to inform the purpose, to entertain or to retell the events to audience.⁵³ It means that social function is give the audience a description of what occurred and when it happened. From all of the quotation above the writer conclude that the social function of recount text is to reconstruct past experiences by retelling events in original sequence.

c. Language Features of Recount text

In reading recount text, we should pay attention to the language features. Language features refers to the structure or grammar that is used by the writer. Kurniawan says that language features of recount

⁵²Djuhairi dan Otong Setiawan, *Genre Dilengkapi 700 Soal Uji Pemahaman*, (Bandung: Yana Widha, 2007). p. 164.

⁵³Djuhairi dan Otong Setiawan, *Genre Dilengkapi...*, p. 26.

text is use past tense, focus on temporal sequence, noun and noun phrase, and focus on specific participant.⁵⁴

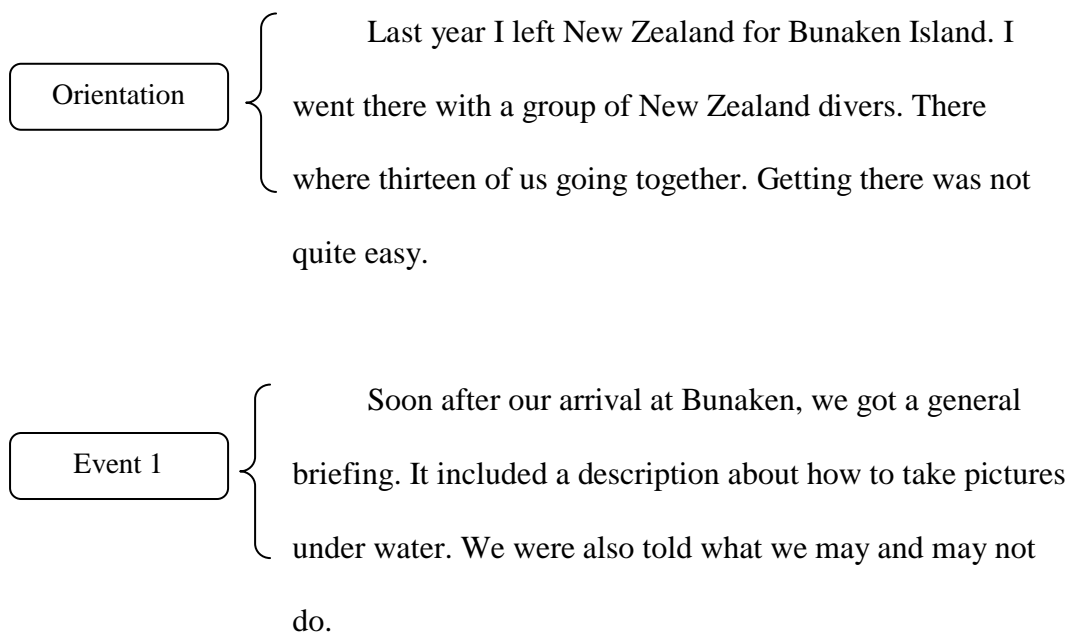
According to Otong Setiawan says that language features of recount text are:

- 1) Focus on specific
- 2) Participants
- 3) Use of the material
- 4) Processes
- 5) Circumstances of time and place
- 6) Use of past tense
- 7) Focus on temporal
- 8) Sequence.⁵⁵

Language features is characteristic of language for recount text.

Look at the example of recount text below:⁵⁶

My Trip to Bunaken



⁵⁴Arief Kurniawan dan Yeni Yuniati, *Mengekplorasi Jenis - jenis Teks Bahasa Inggris...*, p. 40-41.

⁵⁵Djuhairi dan Otong Setiawan, *Genre Dilengkapi 700 Soal Uji Pemahaman...*, p. 44.

⁵⁶Kistono, *The Bridge English Competence 2 Junior High School Grade VIII*, (Surabaya: Yudhistira, 2012), p. 71.

Event 2 { Then, we began our diving. In our diving, we saw groups of tiny fish. In order to identify them, we need a good guide. Without some knowledge of their habitat and behavior, it would be difficult to identify them.

Re-Orientation { In summary, the trip was mostly enjoyable. This place is so impressive with its marine life.

B. Review and Related Findings

In this research, the researcher is related some researchers. They are; Soraya. B, with the title “Efektivitas Penerapan Metode Membaca Cepat Terhadap Kemampuan Memahami Isi Bacaan Pada Mata Pelajaran Bahasa Indonesia Peserta Didik Kelas V SD Muhammadiyah II Berua Makassar”. There is influence after do analyze of the data t where H_1 was accepted and H_0 was not accepted because the result of the hypothesis that is t get from Tcount 3,000, Ttable 2,178. So, Tcount > Ttable and significant result to (2 tailed) is 0,010. So, can concluded there was any significant influence between speed reading method and reading comprehension.⁵⁷

The other reasearch, is from Nurul Aini, trough by the title “Pengaruh Metode Membaca Cepat terhadap Kemampuan Memahami Isi Teks Bacaan Pada Mata Pelajaran Bahasa Indonesia Siswa Kelas V SDI Al Ihsan Jakarta Barat” from the result of the research show that score of experimental class in pre test was 55.7 and afer gave treatment by using speed

⁵⁷Soraya. B, “Efektivitas Penerapan Metode Membaca Cepat Terhadap Kemampuan Memahami Isi Bacaan Pada Mata Pelajaran Bahasa Indonesia Peserta Didik Kelas V Sd Muhammadiyah II Berua Makassar”, (Makassar: UIN Alauddin, 2017), p. 60.

reading method score of experimental class in post test was 77.1. whereas, score of control class in pre test was 44.6 and score of post test in control class was 62.2. from the result calculation score of average from experimental class got increases about 21.4% and from control class got increases about 18%. Thus, the result of result above has any significant effect.⁵⁸

The last, Hasnul Bishry, she had done research trough by the title “The Effect Speed Reading Strategy to Improve students’ reading Comprehension at the Second years Students’of state Senior high School 1 Dabo Singkep Regency of Lingga”. She found that: $T_0 > T_t$ ($3.41 > 2.01$). It showed that the hypothesis was accepted. So the writer concluded that “there was a significant effect from the explanation above $T_0 > T_t$.”⁵⁹

C. Conceptual Framework

Reading is one of skill is very important. But for reading you need some strategy to make your reading more effective and efficient. By using speed reading strategy can help students easy to find some specific information in every material especially in English material in specific unit time. So, the researcher conduct a researcher. Based on framework below:

⁵⁸Nurul Aini,” Pengaruh Metode Membaca Cepat terhadap Kemampuan Memahami Isi Teks Bacaan Pada Mata Pelajaran Bahasa Indonesia Siswa Kelas V SDI Al Ihsan Jakarta Bara”, (Jakarta: UIN Ayarif Hidayatullah, 2015), p. 88.

⁵⁹Hasnul Bishry, The Effect Speed Reading Strategy to Improve students’ reading Comprehension at the Second years Students’of state Senior high School 1 Dabo Singkep Regency of Lingga”, (Pekanbaru: UIN Sultan Syarif Kasim Riau, 2012), p. 54.

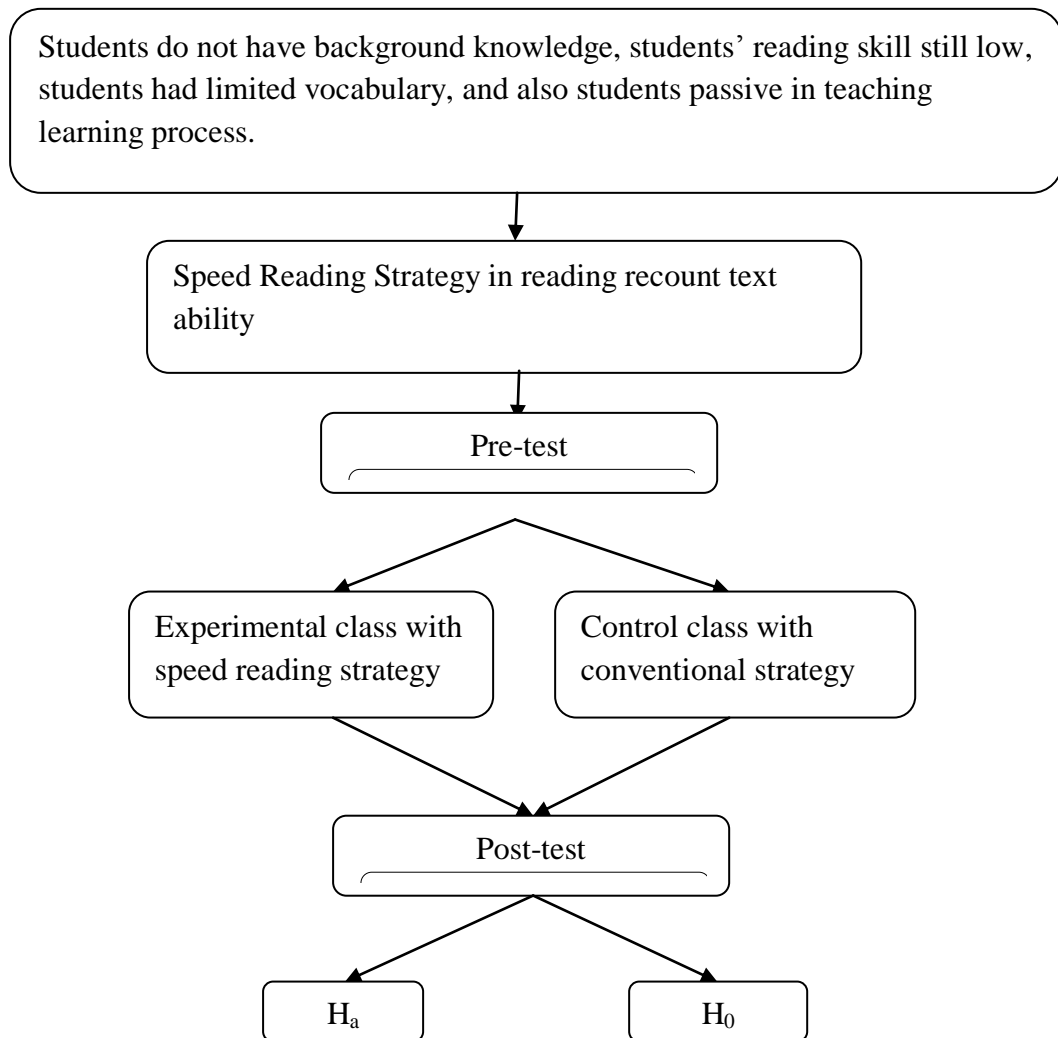


Figure 1: Conceptual Framework

D. Hypothesis

The hypothesis of this research was stated that: "Using speed Reading strategy has significant effect in Reading Recount Text Ability at Grade VIII Students' of MTs Negeri Binanga (H_a).

CHAPTER III

RESEARCH METHOD

A. Place and Time of the Research

The research has done conducted at MTs N Binanga. It is located on K Hajar Dewantara Street, Gang Saroha Pasar Binanga, Kec Barumon Tengah, Kab Padang Lawas of North Sumatra. The subject of research is at grade VIII students' of MTs N Binanga. The research started on August 2017 until October 2019 at MTs Negeri Binanga.

B. Research Design

In this research, the researcher conducted by using quantitative research method. It means, the researcher accumulated and calculated the data which is getting from the research statically. Quantitative method consist of some methods of research, they are descriptive, comparative, correlation, experimental, etc. But the researcher was used experimental research.

According to L.R. Gay says, "Experimental research is the only type of the research that can test hypothesis to establish cause-and-effect relationship".⁶⁰ According to John W. Creswell, "Experimental research included true experiment with the random assignment of subject to treatment condition as well as quasi experiment that use nonrandomized".⁶¹

In experimental research, the researcher manipulates at least one independent variable, controls other variables, and observes the effect on one or more dependent variables. The independent variable, also called the

⁶⁰L.R. Gay and Peter Airasian, *Educational Research: Competencies for Analysis and Application*, (USA: Merrill, 2000), p. 367.

⁶¹John W. Creswell, *Research Design*, (USA: Sage Publication, 2002), p. 14.

experimental variable, cause, or treatment, is that process or activity believed to make difference in performance. The dependent variable, also called the criterion variable, effect or post test, is the outcome of the study, the measure of the change or difference resulting from manipulation of the independent variable. When conducted well, experimental studies produce the soundest evidence concerning hypothesized cause effect relation.⁶²

Based on the above explanation, the researcher can conclude that experimental research was a kind of research method which has the aim to know causal effect relationship between one variable and more to other variables.

The experimental research controls the selection or participant for the study and divides the select participant into more groups having similar characteristics at the start of experiment. It mean that to collect the data, the design involved two different classes as the sample of the study. In this research, the sample divided into two classes are used; experimental class and control class. Experimental class is the class that taught by speed reading strategy and the control class is the class that taught by translation strategy. The design applied in order to investigate the effect of speed reading strategy in reading recount text ability. The research design can be seen in the following:

⁶²Bungin Burhan, *Metodologi Penelitian Kuantitatif*, (Surabaya: Prenada Media, 2005), p. 147.

Table. I
Research Design

Class	Pre-test	Treatment	Post-test
Experiment class	✓	Teaching Recount Text by using Speed Reading Strategy	✓
Control class	✓	Teaching Recount Text by using Conventional Strategy	✓

C. Population and Sample

1. Population

In conducting the research, it is certain needs population as what Sukardi says, that population is all members of well defined class of people, event, or object.⁶³ Next, according to Enciclopedia of Education says, “A population is a set (or collection) of all elements possessing one or more attributes of interest”.⁶⁴ The last, Gay says, “Population is the group at interest to the research, the group to which she or he would like the result of the study to be generalization”.⁶⁵

Based on the explanation above, the population of this research is all the students at grade VIII of MTs N Binanga. The total number of the grade VIII students of MTs N Binanga which consist of six classes with 129 students. It can be seen from the table below:

⁶³Sukardi, *Metodologi Penelitian Pendidikan*, (Jakarta: Bumi Aksara, 2003), p. 53.

⁶⁴Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: PT Rineka Cipta, 2006), p. 130.

⁶⁵L. R. Gay and Peter Airasian, *Educational Research: Competencies for Analysis and Application*, (New Jersey: Prentice-Hill, Inc, 1992), p. 122.

Table. 2
Population of Research

No	Classes	Number of Students
1	VIII-1	22
2	VIII-2	22
3	VIII-3	24
4	VIII-4	24
5	VIII-5	25
6	VIII-6	12
Total of Number		129

2. Sample

There were four different sampling techniques were included in the probability sampling technique. The fourth technique was random, stratified, cluster and systematic. In this research, the researcher used cluster sampling. Cluster sampling technique can be done by asked information and advice from English teacher at grade VIII, and test each class of the population. But, because of limited time and material, the researcher do it by asked information and advice from English teacher at grade VIII. Based on information from English teacher at grade VIII; the first, all of the population that have same ability are VIII-1 class and VIII-2 class. The second, VIII-1 and VIII-2 classes more friendly, creative, polite and higher curiosity. The last, before the students follow the learning process, the students must pass placement test, and that's distinguishes each class.

Based on the reason above, the researcher took VIII-1 class and VIII-2 class as sample, VIII-1 class which consist of 22 students and VIII-

2 class which consist of 22 students. So, the total of the sample in this research are 44 students.

Before using cluster sampling, the researcher must use normality and homogeneity test to get sample that have similar competence. To determine the normality and homogeneity was done with the way like in the following:

1) Normality test

Normality test is used to know whether the data of research is normal or not. The researcher uses normality test with using *Chi-Quadrate*, as follow:⁶⁶

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

Where:

x^2 = Chi-Quadrate

f_0 = Frequency is gotten from the sample/result of observation (questioner)

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

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

⁶⁶Mardalis, Metode Penelitian: *Suatu Pendekatan Proposal*, (Jakarta: Bumi Aksara, 2007), p. 85

2) Homogeneity test

Test of variance homogeneity is used to know whether the two classes of experiment and control have same variances or not. If two classes have same variances. It is said that the class is homogeneous. Variance is the square of standart deviation.

The formula that use to test the hypothesis as follow:⁶⁷

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

Where:

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

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

Hypothesis is rejected if $F \leq F_{1/2 \alpha} (n_1-1) (n_2-1)$, while if $F_{count} > F_{table}$ hypothesis is accepted. It determined with significant level 5% (0.05) and dk numerator was (n_1-1) , while dk deminator is (n_2-1) .

Table. 3
Sample of Research

No	Sample	Class	Total Person
1	Experimental Class	VIII-1	22
2	Control Class	VIII-2	22
	Total		44

⁶⁷Agus Irianto, *Statistik Konsep Dasar dan Aplikasinya*, (Padang: P2LPTK Departemen Pendidikan Nasional, 2003), p .276.

D. Instrument of Research

1. Instrument of Collecting Data

A research must have an instrument in the research because a good instrument can guarantee for taking the valid data. Suharsimi Arikunto says, instrument of research is a tool or facility is used by the researcher in collecting data, so that the process are easier and better the result that means more accurate, complete and systematic.⁶⁸ In this research, the researcher used an instrument for collecting data that is test. The test is some question are used for measuring skill, knowledge and also intelligent.

The design of the reading test are in the form of Multiple Choice, True/False, Matching, Gapped Test, and Proofreading, Particularly on reading fiction. In this case, the researcher choose Multiple Choice as test. Cyril says, a multiple choice question (MCQs) is test item usually set out in such a way that the candidate is required to select the answer from a number of given option, only one of which is correct.⁶⁹ The test is aimed at collecting data supporting the students' reading recount text ability.

2. Indicator of Test

The test is divided in two parts. The first part is pre-test consist of 30 number and the second part is post-test consist of 30 number before valid. After valid the test for pre-test consist of 25 number and also 25 for

⁶⁸Suharsimi Arikunto, *Prosedur Penelitian...*, p. 126.

⁶⁹Cyril J. Weir, *Communication Language Teaching*, (New York: Prentice Hall, 1990), p. 43.

post-test. The test gives to both classes. To find out the score of the students, answer, the researcher gives 4 scores for each item. Thus, the maximum score of test is 100. The instrument data in reading test of the pre-test and post-test are below:

Table. 4
There are the indicators of reading recount text Pre-Test

NO	Indicators	Items	Number of items	Score	Total Score
1	Students are able to find the topic sentences of the text		1, 6, 16, 19, 23	4	20
2	Students are able to identify main idea	6	7, 10, 15, 21, 25	4	24
3	Students are able to identify the important information from the text	6	3, 4, 8, 12, 17, 20	4	24
4	Students are able to identify vocabulary	3	5, 13, 18	4	12
5	Students are able to identify the conclusion	5	9, 11, 14, 22, 24	4	20
	Total	25		20	100

Table. 5
There are the indicators of reading recount text Post-Test

NO	Indicators	Items	Number of items	Score	Total Score
1	Students are able to find the topic sentences of the text	4	5, 10, 19, 21	4	16
2	Students are able to identify main idea	7	4, 6, 9, 14, 18, 24	4	28
3	Students are able to identify the important information from the text	6	2, 3, 7, 11, 17, 23	4	24
4	Students are able to identify vocabulary	4	8, 12, 15, 25	4	16

5	Students are able to identify the conclusion	4	13, 16, 20, 22	4	16
	Total	25		20	100

E. Test of Instrument

1. Validity Test

Validity is the most important quality of a test. It is the degree to which a test measure what it is supposed to measure, and consequently, permits appropriated interpretations of test scores.⁷⁰ Anas Sudijono stated that validity is a characteristic of the good test. To get the validity of an achievement test can be used two ways.⁷¹

1) Totality of the test validity

2) Item validity

It means that, validity test make the test valid or not to give the experimental classes and control classes. Researcher would be given 60 multiple-choice tests before validity test that divided into two classes. They were 30 for pre-test and 30 for post test. The purpose is to know what the test is ready to test.

To know the validity of the each question will be refer to list r biserial with r_t in 5% significant: 0, 404 and 1% significant: 0, 515. So, if $r_{account} > r_{table}$ the test is classified valid.

So, to get the validity of test, the formula of r pointbiserial can be used as follow:

⁷⁰L. R. Gay and Peter Airasian, *Educational Research...*, p. 191.

⁷¹Anas Sudijono, *Pengantar Evaluasi Pendidikan* (Jakarta: PT Raja Grafindo Persada, 1996), p. 163.

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

Where:

- r_{pbi} = Coefficient item validity
- M_p = Mean score of the total score
- 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.⁷²

From the result of analysis for 60 instrument test, in which 30 for pre-test and 30 for post-test. The researcher concluded that for pre-test only 25 questions were categorized valid and 5 were categorized invalid (see appendix 7). Then, for post-test also consist of 25 questions were categorized valid, and 5 were categorized invalid (see appendix 10). The calculation of how to got it could be seen in the appendix 8 and appendix 11. So, researcher conducted 25 items for control class and 25 items for experimental class.

2. Reliability Test

The reliability of the characteristic of a good test refers to consistency of the measurement that was to how consistent scores or other

⁷²Ayat Hidayat Huang, "Uji Validitas Point Biserial". (retrieved from <http://www.en.globalstatistik.com/uji-validitas-point-biserial/>. On July 18th 2018 13.15 pm).

evaluation results were from one measurement to another. To get the reliability of the test; the researcher used formula K-R 20:⁷³

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(\frac{SB^2 - \sum pq}{SB^2} \right)$$

Where :

- R11 = Reliability of the test
- K = Total of question
- SB = Standard deviation
- P = Proporsi subject who is right answer
- Q = Proporsi subject who is wrong answer

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

F. Procedure of Research

In tis research, to completing the data, the next step of this research is collecting the data. The researcher would be given pre-test, treatment and post-test to two class, they are experimental class and control class would be given some material, which consist of recount text. In the experimental class would be taught by using speed reading strategy and the control class would be taught by using lecture method. The test is divided into two kinds, which are pre-test and post-test. The function of test is to collecting the data. Then,

⁷³Suharsimin Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, cet. 7(Jakarta: Bumi Aksara, 1991), hlm. 71.

the data was to determine the result of research. The process of collecting data the researcher used some steps. They are:

1. Pre-test

Before giving the treatment, both of the class would be tested to know their previous achievement in reading recount text. In this case, researcher has some steps that are:

- a. Researcher prepared some question about speed reading which the kind of text is recount text, 25 questions to experimental and also 25 questions to control class.
- b. The researcher distributed the paper of the test to students of experimental class and control class.
- c. Then, the researcher explained what must students to do.
- d. Gave time to students, to answer the question with time 45 minutes.
- e. The last, researcher collected their paper test and checked their answer to find the score before using Speed Reading Strategy.

2. Treatment

After giving the pre test, the students would be given the treatment. The experimental class would be taught by using speed reading strategy and the control class would be taught without speed reading strategy or using conventional strategy, only explain the subject matter or recount text, then read it, after students read the text one by one, researcher translated the difficult word in the text, and the last ask the students to answer the question.

3. Post-test

After giving the treatment, the researcher given the final test or post test. Especially, to measure the speed reading and effective reading rate of the students' in treatment. The researcher has some procedure, they are:

- a. Researcher prepared some question about speed reading which the kind of text is recount text, 25 questions to experimental and also 25 questions to control class.
- b. The researches distributed the paper of the test to students of experimental class and control class.
- c. Then, the researcher explained what must students to do.
- d. Gave time to students, to read and answer the question with time 45 minutes.
- e. The researcher collected their paper test
- f. The researcher checked their answer to find out the mean score after using Speed Reading Strategy.

Index which is resulted after t-test what determine the admission or the rejection of the hypotheses.

G. Technique of Data Analysis

Hypothesis is the provisional result of the research. The technique in analyzing the data is used by t-test, because it is aimed to examine the difference of two variables. So, the researcher needs to analyze the data which have been divided into two groups; experiment class and control class.

Such examination performed both on pre-test and post-test score from the experimental class and control class.

From explanation above, to test hypothesis researcher uses formula as follows:⁷⁴

$$T_t = \frac{X_1 - X_2}{\sqrt{\left(\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \right) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where:

t : The value which the statistical significant

X_1 : The average score of the experimental class

X_2 : The average score of the control class

S_1^1 : Deviation of the experimental class

S_2^2 : Deviation of the control class

n_1 : Number of experimental class

n_2 : Number of control class.

⁷⁴Sugiyono, *Statistika Untuk Penelitian*, (Bandung: ALFABETA, 2006), p.138

CHAPTER IV

RESEARCH RESULT

As mentioned in earlier chapter, in order to evaluate the effect of using speed reading strategy on students' reading recount text ability, the researcher has calculated the data using pre-test and post-test. 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 Speed Reading Strategy

a. Score of Pre-test Experimental Class

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

Table 6
The Score of Experimental Class in Pre-test

Total	1196
Highest score	72
Lowest score	36
Mean	54.9
Median	53.9
Modus	53
Range	36
Interval	7
Standard deviation	11.05
Variants	121.38

Based on the above table the total score of experiment class in pre-test was 1196, mean was 57.5, standard deviation was 11.5, variants was 121.38, median was 53.9, range was 36, modus was 53,

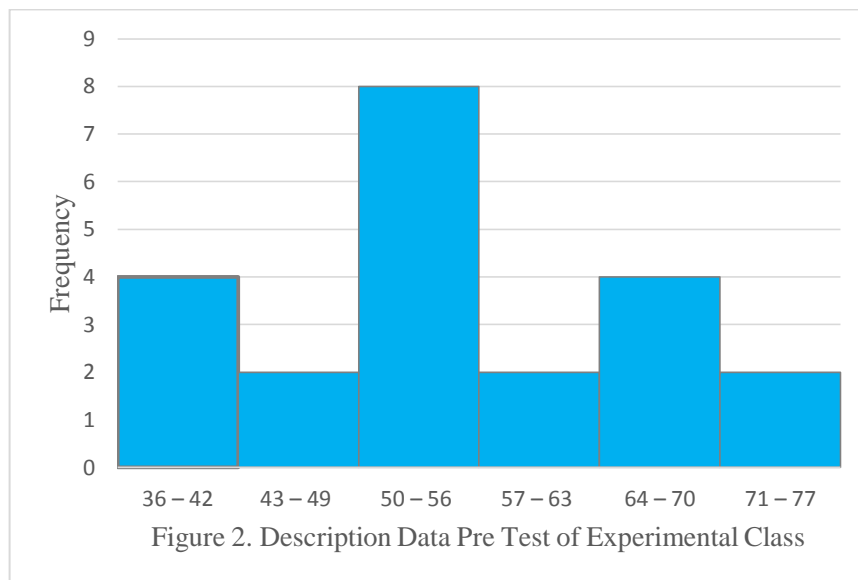
interval was 7. The researcher got the highest score was 72 and the lowest score was 36. It can be seen on appendix 17. Then, the computed of the frequency distribution of the students' score of experiment class can be applied into table frequency distribution as follow:

Table 7
Frequency Distribution of Students' Score

No	Interval	Mid Point	Frequency	Percentages
1	36 – 42	39	4	18.18%
2	43 – 49	46	2	9.09%
3	50 – 56	53	8	36.36%
4	57 – 63	60	2	9.09%
5	64 – 70	67	4	18.18%
6	71 – 77	74	2	9.09%
<i>i = 7</i>			22	100%

From the table above, the students' score in class interval between 36 – 42 was 4 students (18.18%), class interval between 43 – 49 was 2 students (9.09 %), class interval between 50 – 56 was 8 students (36.36 %), class interval between 57 – 63 was 2 students (9.09 %), class interval between 64 – 70 was 4 students (18.18 %), and the last class interval between 71 – 77 was 2 students (9.09 %).

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



From the histogram above, the students' score 36 – 42 was 4 students, the students' score 43 – 49 was 2 students, the students' score 50 – 56 was 8 students, the students' score 57 – 63 was 2 students, the students' score 64 – 70 was 4 students, and the last students' score 71 – 77 was 2.

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 the question (test). The score of pre-test control class can be seen in the following table:

Table 8
The Score of Control Class in Pre-test

Total	1208
Highest score	76
Lowest score	32
Mean	54.8
Median	56.7
Modus	61.5
Range	44
Interval	9
Standard deviation	13.00
Variants	155.70

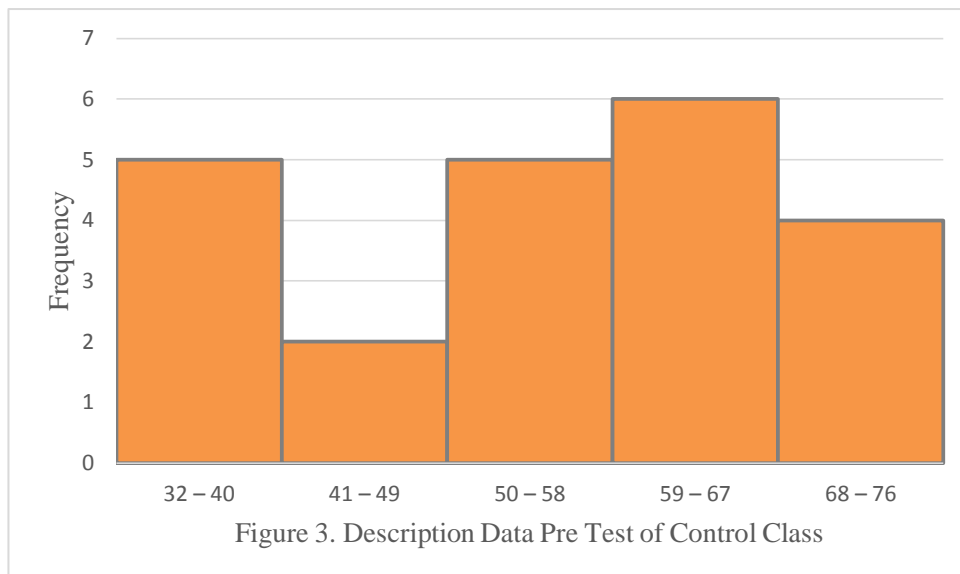
Based on the above table the total score of experiment class in pre-test was 1208, mean was 54.8, standard deviation was 13.00, variants was 155.70, median was 56.7, range was 44, modus was 61.5, interval was 9. The researcher got the highest score was 76 and the lowest score was 32. It can be seen on 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 Students' Score

No	Interval	Mid Point	Frequency	Percentages
1	32 – 40	36	5	22.72%
2	41 – 49	45	2	9.09%
3	50 – 58	54	5	22.72%
4	59 – 67	63	6	27.27%
5	68 – 76	72	4	18.18%
$i = 9$			22	100%

From the table above, the students' score in class interval between 32 – 40 was 5 students (22.72 %), class interval between 41 – 49 was 2 students (9.09 %), class interval between 50 – 58 was 5 students (22.72 %), class interval between 59 – 67 was 6 students (27.27 %), and the last class interval between 68 – 76 was 4 students (18.18 %).

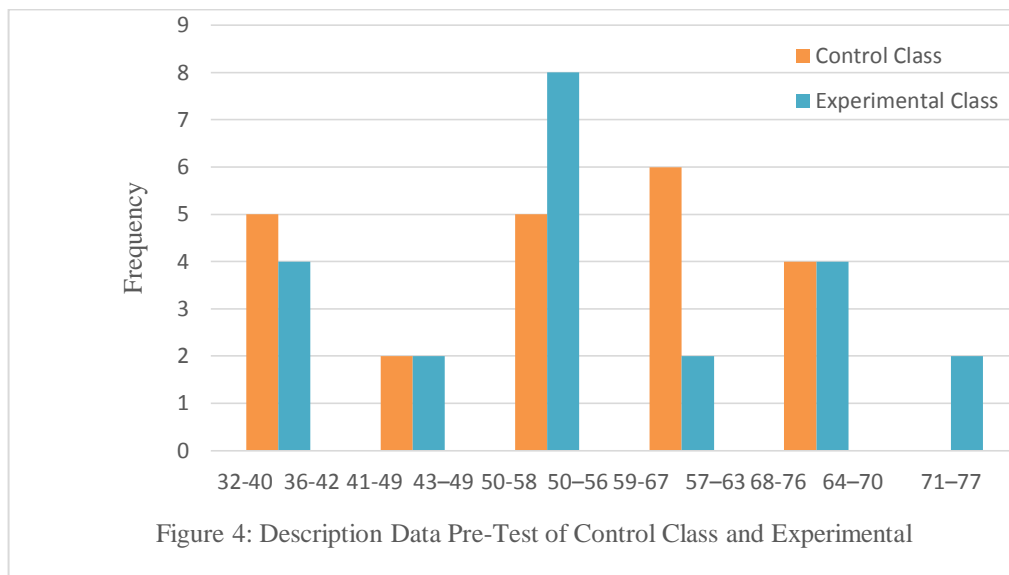
In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:



From the histogram above, the students' score 32 – 40 was 5 students, the students' score 41 – 49 was 2 students, the students' score 50 – 58 was 5 students, the students' score 59 – 67 was 6 students, and the last students' score 68 – 76 was 4 students.

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

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



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

2. Description of Data After Using Speed Reading Strategy

a. Score of Post-Test Experimental Class

In post-test of experimental class, the researcher calculated the result that had been gotten by the students in answering the question (test) after the researcher did the treatment by using speed reading strategy. The score of post-test experimental class can be seen in the following table:

Table 10
The Score of Experimental Class in Post-test

Total	1756
Highest score	92
Lowest score	72
Mean	81.3
Median	80.64
Modus	79.5
Range	20

Interval	4
Standard deviation	4.90
Variants	26.63

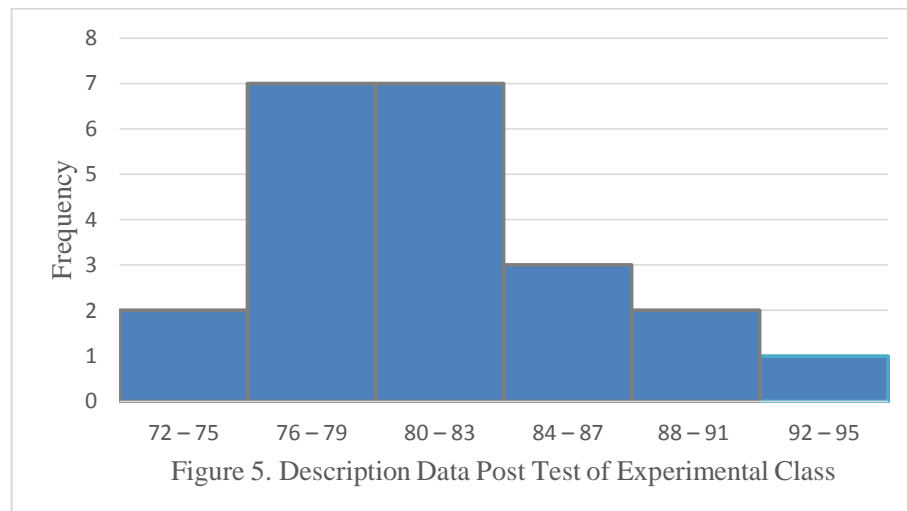
Based on the above table the total score of experiment class in post-test was 1756, mean was 81.3, standard deviation was 4.90, variants was 26.63, median was 80.64, range was 20, modus was 79.5, interval was 4. The researcher got the highest score was 92 and the lowest score was 72. It can be seen on appendix 18. Then, the computed 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	72 – 75	73.5	2	9.09%
2	76 – 79	77.5	7	31.81%
3	80 – 83	81.5	7	31.81%
4	84 – 87	85.5	3	13.63%
5	88 – 91	89.5	2	9.09%
6	92 – 95	93.5	1	4.54%
<i>i</i> = 4			22	100%

From the table above, the students' score in class interval between 72 – 75 was 2 students (9.09%), class interval between 76 – 79 was 7 students (31.81 %), class interval between 80 – 83 was 7 students (31.81%), class interval between 84 – 87 was 3 students (13.63%), class interval between 88 – 91 was 2 students (9.09%), and the last class interval between 92 – 95 was 1 students (4.54%).

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



From the histogram above, the students' score 72 – 75 was 2 students, the students' score 76 – 79 was 7 students, the students' score 80 – 83 was 7 students, the students' score 84 – 87 was 3 students, the students' score 88 – 91 was 2 students, and the last the students' score 92 – 95 was 1 students.

b. Score of Post-Test Control Class

In post-test of control class, the researcher calculated the result that had been gotten by the students in answering the question (test) after the researcher taught the reading recount text by using conventional strategy. The score of post-test control class can be seen in the following table:

Table 12
The Score of Control Class in Post-test

Total	1592
Highest score	88
Lowest score	60
Mean	73.1
Median	72.35
Modus	71.5
Range	28
Interval	6
Standard deviation	7.39
Variants	51.67

Based on the above table the total score of control class in post-test was 1592, mean was 73.1, standard deviation was 7.39, variants was 51.67, median was 72.35, range was 28, modus was 71.5, interval was 6. The researcher got the highest score was 88 and the lowest score was 60. It can be seen on appendix 18. Then, the computed of the frequency distribution of the students' score of control class can be applied into table frequency distribution as follow:

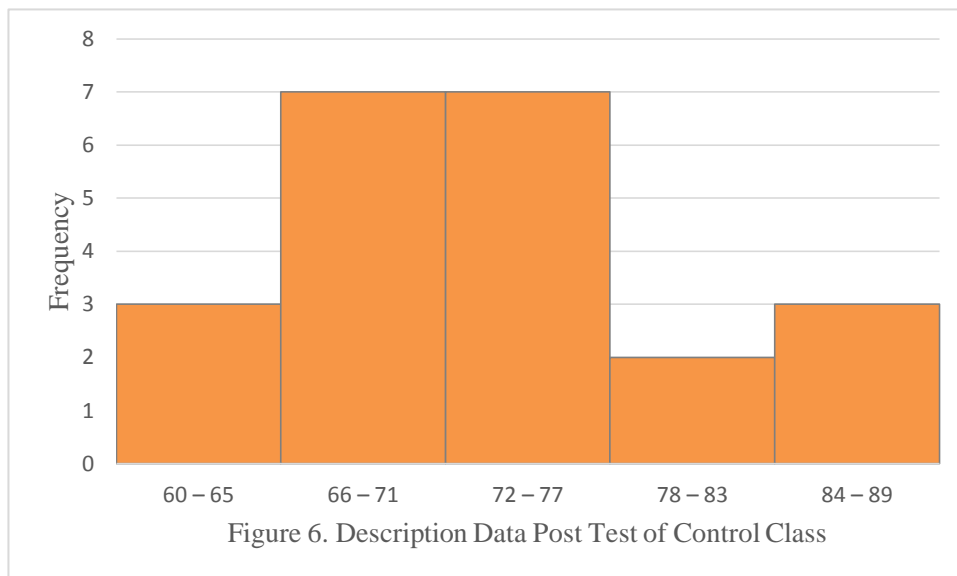
Table 13
Frequency Distribution of Students' Score

No	Interval	Mid Point	Frequency	Percentages
1	60 – 65	62.5	3	13.63%
2	66 – 71	68.5	7	31.81%
3	72 – 77	74.5	7	31.81%
4	78 – 83	80.5	2	9.09%
5	84 – 89	86.5	3	13.63%
<i>i</i> = 6			22	100%

From the table above, the students' score in class interval between 60 – 65 was 3 students (13.63%), class interval between 66 – 71 was 7 students (31.81%), class interval between 72 – 77 was 7 students

(31.81%), class interval between 78 – 83 was 2 students (9.09%), and the last class interval between 84 – 89 was 3 students (13.63%).

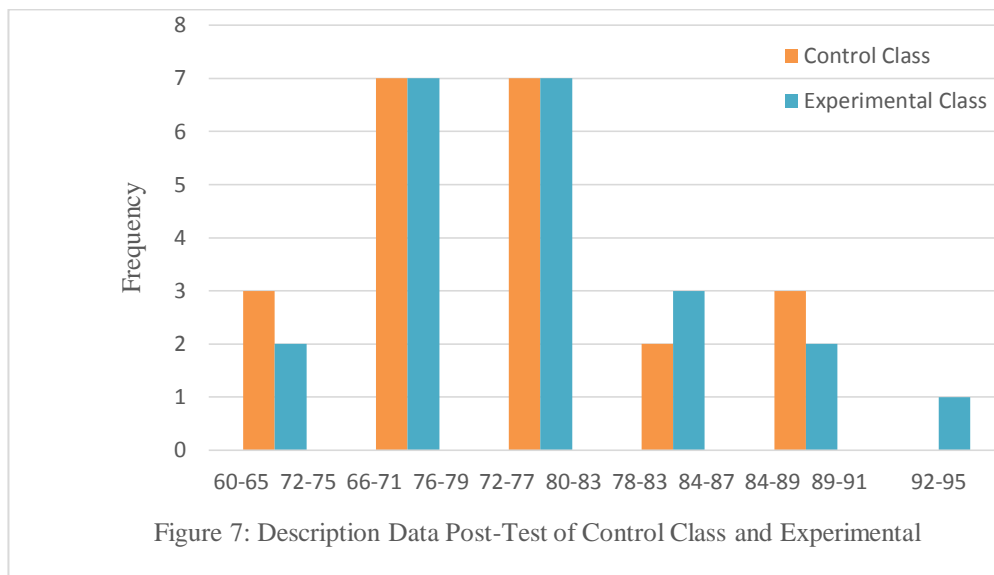
In order to get description of the data clearly and completely, the researcher presents them in histogram on the following figure:



From the histogram above, the students' score 60 – 65 was 3 students, the students' score 66 – 71 was 7 students, the students' score 72 – 77 was 7 students, the students' score 78 – 83 was 2 students, the students' score 76.5 was 4 students, and the last the students' score 84 – 89 was 3 students.

c. The Comparison between Description Data Post-Test of Control Class and Experimental Class

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



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

3. The Student's Reading Recount Text ability by Using Speed Reading Strategy (WPM) and Effective Reading Rate (ERR) of the student's at grade VIII-1 of MTs Negeri Binanga.

Table 14
The students' reading rate and the students' effective reading rate

No	The Initial Name of Students (n)	Word Per Minute (WPM)	Effective Reading Rate (ERR)
1.	AA	124 wpm	94 wpm
2.	APH	146 wpm	116 wpm
3.	AHMH	140 wpm	106 wpm
4.	BHS	143 wpm	114 wpm
5.	BRH	134 wpm	102 wpm
6.	HSS	164 wpm	144 wpm
7.	LS	155 wpm	130 wpm
8.	MSSH	136 wpm	103 wpm
9.	MRH	141 wpm	112 wpm
10.	NLSH	204 wpm	171 wpm
11.	PJ	174 wpm	160 wpm
12.	RMH	143 wpm	103 wpm
13.	RM	192 wpm	169 wpm

14.	SH	140 wpm	112 wpm
15.	SA	164 wpm	124 wpm
16.	SK	120 wpm	91 wpm
17.	STA	145 wpm	110 wpm
18.	SNA	124 wpm	99 wpm
19.	SRO	182 wpm	131 wpm
20.	SRRS	134 wpm	107 wpm
21.	TPH	169 wpm	141 wpm
22.	UK	115 wpm	92 wpm
Total		3.289 wpm	2.631 wpm
Average		149 wpm	119 wpm

Table 15

The result of measurement of the word per minute (WPM)

No	WPM	Frequency	Category
1	201 – ...	1	Very good
2	151 – 200	7	Good
3	101 – 150	14	Enough
4	50 – 100	0	Less

Based on the measurement of the result speed reading above it, can be concluded that the speed reading of students' at grade VIII of MTS Negeri Binanga is 149 words per minute (WPM).

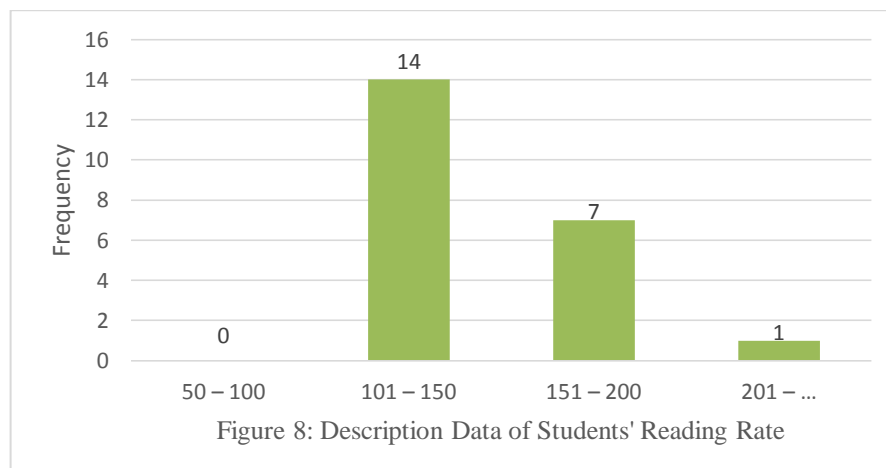
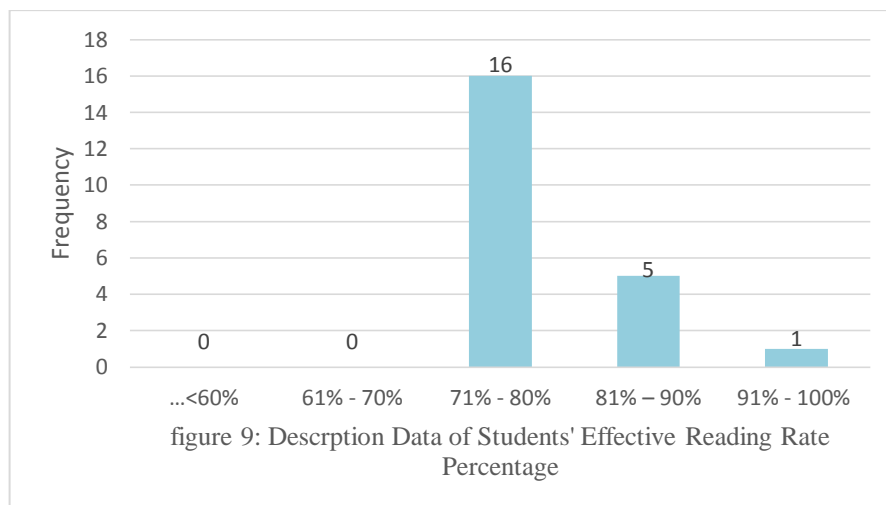


Table 16

Percentage of students' Effective Reading Rate (ERR)

No	Percentage	Frequency	Category
1	91% - 100%	1	Very good
2	81% - 90%	5	Good
3	71% - 80%	16	Enough
4	61% - 70%	0	Less
5	...<60%	0	Very less

From the table above show that the students' effective reading rate , 1 person was very good category, 5 was good category, 16 was enough category. So, the researcher conclude that the students' effective reading rate average is enough.



From the histogram above show that the students' effective reading rate ...<60% was 0 student, 61% - 70% was 0 students', 71% - 80% was 16 students, 81% - 90% was 5 students' and 91% - 100% was 1 students. So, the researcher conclude the percentage of students' effective reading rate average is 71% - 80% and category average.

B. Data Analysis

1. Requirement Test

a. Normality and Homogeneity Pre-Test

1) Normality of Experimental and Control Class in Pre-Test

Table 17
Normality and Homogeneity in Pre-Test

Class	Normality Test		Homogeneity Test	
	x_{count}	x_{table}	f_{count}	f_{table}
Experiment Class	1.15	9.488	1.28 < 2.04	
Control Class	-0.04	9.488		

Based on the above table researcher calculation, the score of experiment class $Lo = 1.15 < Lt = 9.488$ with $n = 22$ and control class $Lo = -0.04 < Lt = 9.488$ with $n = 22$, and real level $\alpha 0.05$. 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 17.

2) Homogeneity of Experimental and Control Class in Pre-test

The coefficient of $F_{\text{count}} = 1.28$ was compared with F_{table} . Where F_{table} was determined at real $\alpha 0.05$, and the different numerator $dk = N-1 = 22-1 = 21$ and denominator $dk N-1 = 22-1 = 21$. So, by using the list of critical value at F distribution is got $F_{0.05} = 2.04$. It showed that $F_{\text{count}} 1.28 < F_{\text{table}} 2.04$. So, the researcher concluded that the variant from the data of the Students' Reading Recount Text Ability at Grade VIII of MTsN Binanga by experimental and control class was homogenous. The calculation can be seen on the appendix 19.

b. Normality and Homogeneity Post-Test

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

Table 18
Normality and Homogeneity in Post-Test

Class	Normality Test		Homogeneity Test	
	X_{count}	X_{table}	f_{count}	f_{table}
Experiment Class	-1.04	9.488	1.94 < 2.04	
Control Class	-1.79	9.488		

Based on the table above researcher calculation, the score of experiment class $L_o = -1.04 < L_t = 9.488$ with $n = 22$ and control class $L_o = -1.79 < L_t = 9.488$ with $n = 22$, and real level $\alpha 0.05$. Cause $L_o < L_t$ 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 18.

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

The coefficient of $F_{\text{count}} = 1.94$ was compared with F_{table} . Where F_{table} was determined at real $\alpha 0.05$, and the different numerator $dk = N-1 = 22-1 = 21$ and denominator $dk N-1 = 22-1 = 21$. So, by using the list of critical value at F distribution is got $F_{0.05} = 2.04$. It showed that $F_{\text{count}} 1.94 < F_{\text{table}} 2.04$. So, the researcher concluded that the variant from the data of the Students' Reading Recount Text at Grade VIII of MTsN Binanga by experimental and control class was homogenous. The calculation can be seen on the appendix 20.

2. Hypothesis Test

After calculated the data of post-test, researcher has found that post-test result of experiment and control class is normal and homogenous. Based on the result, researcher used parametric test by using T-test to analyze the hypothesis. Hypothesis alternative (H_a) of the research was “There was the significant effect of Using Speed Reading Strategy on Students’ Reading Recount Text Ability”. The calculation can be seen on the appendix 21.

Table 19
Result of T-test from the Both Averages

Pre-test		Post-test	
t_{count}	t_{table}	t_{count}	t_{table}
0.028	1.681	4.343	1.681

$$H_a : \mu_1 > \mu_2$$

Where:

$H_a : \mu_1 > \mu_2$ “There was a significant effect of using speed reading strategy on students’ reading recount text ability”.

Based on researcher calculation, researcher found that t_{count} 0.028 while t_{table} 1.681 with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 22 + 22 - 2 = 42$. Cause $t_{count} > t_{table}$ ($4.343 > 1.681$), it means that hypothesis H_a was accepted and H_0 was rejected. So, there was the significant effect of Using Speed Reading Strategy on Students’ Reading Recount Text. The calculation can be seen on the appendix 18.

C. Discussion

Based on the related findings, the researcher discussed the result of this research and compared with the related findings. It also discussed with the theory that has been stated by the researcher. First, Hasanul Bishry⁷⁵ showed that the experimental class got 55.40. Second, Nurul Aini⁷⁶ showed that the experimental class got 55.71 for the mean score of pre-test. The last, Soraya. B⁷⁷ showed that the experimental class got 61.75 for the mean score of pre-test. Nurul Aini's pre-test result was higher than Hasanul Bishry's result. Soray. B's pre-test result was higher than Hasanul Bishry's, and Nurul Aini's result.

Meanwhile, the researcher got the mean score of pre-test of the experimental class was 54.9. And it was the lowest pre-test result than Hasanul Bishry's, Nurul Aini's and Soraya. B's result of the related findings. From the above description, it can be seen that the highest mean score of pre-test of the experimental class was gotten by Soraya. B's result where the mean score of pre-test was 61.75 and the lowest mean score of pre-test of the experimental class was gotten by the researcher in this thesis where the mean score of pre-test was 54.9. It means, before using Speed Reading Strategy, students' score was low. And for the researcher, the mean score of pre-test of

⁷⁵Hasanul Bishry, "The Effect of Speed Reading Strategy to Improve Students' Reading Comprehension at the Second Year Students of State Senior High School 1 Dabo Singkep Regency of Lingga", (Pekanbaru: UIN Sultan Syarif Kasim, 2012), p. 55.

⁷⁶Nurul Aini, "Pengaruh Metode Membaca Cepat Terhadap kemampuan Memahami Isi Teks Bacaan pada Mata Pelajaran Bahasa Indonesia Siswa kelas V SDI Al Ihsan Jakarta Barat", (Jakarta: UIN Syarif Hidayatullah, 2015), p. 70.

⁷⁷Soraya. B, "Efektivitas Penerapan Metode Membaca Cepat Terhadap Kemampuan Memahami Isi Bacaan Pada Mata Pelajaran Bahasa Indonesia Peserta Didik Kelas V Sd Muhammadiyah II Berua Makassar", (Makassar: UIN Alauddin, 2017), p. 60.

the experimental group was under the standardization where the standardization mark is 75.

Then, for the post-test result, Hasanul Bishry⁷⁸ got the experimental class score was 69.40. Nurul Aini⁷⁹ got the experimental class score was 77.14, and Soraya. B got⁸⁰ the experimental class score was 83.75, and it was higher than Nurul Aini's and Hasanul Bishry's result. Beside that, the researcher got the mean score for experimental class after using Speed Reading Strategy was 81.3, and it was higher score than Nurul Aini and Hasanul Bashry result.

From the description, it can be seen that the highest mean score of post-test of the experimental class was gotten by Soraya. B where the mean score of post-test was 83.75 and the lowest mean score of post-test was gotten by Hasanul Bishry in his thesis where the mean score of post-test was 69.40. So, among the mean scores of post-test, the mean scores have increased than pre-test. Where, for the researcher result, the mean score of post-test was passed the standardization where the standardization mark is 75.

Based on the result, the researcher has got the significant effect of using Speed Reading Strategy, so have the researchers who mentioned in related finding. Hasanul Bishry⁸¹ found that t_0 was higher than t_t ($3.41 > 2.01$), Nurul Aini⁸² found that t_{count} was higher than t_{table} ($2.458 > 2.06$), and Soraya.

⁷⁸Hasanul Bishry, The Effect of Speed...., p.55

⁷⁹Nurul Aini, Pengaruh Metode Membaca...., p. 70

⁸⁰Soraya. B, "Efektivitas Penerapan Metode...., p. 60

⁸¹Hasanul Bishry, The Effect of Speed...., p. 55

⁸²Nurul Aini, "Pengaruh Metode Membaca...., p. 70.

B⁸³ found that t_{count} was higher than t_{table} ($3.000 > 2.178$). From the description, t-test result from Hasanul Bishry's was the highest between Nurul Aini's, Soraya. B's result and t-test result from Nurul Aini was lowest among them. Beside that, the researcher also found that t_{count} is higher than t_{table} where t_{count} was 4.343 and t_{table} was 1.681 ($4.343 > 1.681$). Where, the researcher result of t-test was the highest among the related findings result. So, the result of t-test of Speed Reading strategy was highest than the result t-test of related findings. It can be seen that among the researcher, the using of Speed Reading strategy gave the effect to students' reading recount text ability especially at grade VIII of MTS Negeri Binanga. where it is suitable with the theory from Muhammad Noer says that there are there the advantages of speed reading strategy, they are:

1. Choose important information and not important information, this can be seen in the students' answer to the test questions distinguishing sentences which are opinions and sentences which are facts.
2. Master information quickly, this can be seen when students work on the post-test questions given. The time used by students is quit faster in working on these questions compared to when working on pre-test questions without using speed reading strategy.
3. Improve understanding, this can be seen in the post-test scores of students who have been done by the students. Increase in the average value of the

⁸³Soraya. B, Efektivitas Penerapan Metode....., p. 60.

pre- test questions to the post-test questions showed that students' understanding of the reading texts provided was relatively increase.

Thus it can be said that the result of this research by using of Speed Reading Strategy on Reading Recount Text Ability Students' at grade VIII of MTS Negeri Binanga is accordance with existing theories regarding speed reading strategies.

D. Threats of the Research

The researcher found the threats of the research as follows:

1. The students were not serious in answering the pre-test and post-test. Some of them still did cheating. It made the answer of the test was not pure because they did not do it by themselves.
2. The students were noisy while the learning process. They were not concentrating in following the learning process. Some of them talked to their friends and some of them did something outside the teacher's rule. Of course it made them can't get the teacher's explanation well and gave the impact to the post-test answer.
3. The students were too enthusiastic in answering the questions which to find the topic, identify main idea, identify specific information, identify vocabulary and to identify conclusion of the text.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

Based on the result of the research, the conclusions of this research is there was the effect of using speed reading strategy in reading recount text ability at grade VIII students' of MTs Negeri Binanga. The researcher found the result before using speed reading strategy in reading recount text, mean score of experimental class in pre-test was 54.9 and the mean score of control class in pre-test was 54.8. Then, after using speed reading strategy the mean score of experimental class was 81.3 and the mean score of control class which was taught by using conventional strategy was 73.1. The last, the researcher found the result of t-test where t_{count} was higher than t_{table} . t_{count} was 4.343 and t_{table} was 1.681 ($4.343 > 1.681$). It means that H_a was accepted.

B. Suggestion

After finding the result of the effect of using speed reading strategy on students' reading recount text ability, there are some researcher's suggestions for the students, teacher and school.

1. Suggestion for students

In mastering reading especially in reading recount text, one thing that should be done by the students is that the students have to be interested in reading it self. The students should read the material more and more. In this case, speed reading strategy is an appropriate strategy that can be used by the students in reading the material to get specific

information and comprehension of the text what they are read. Speed reading is a strategy that can increase students' reading.

2. Suggestion for teacher

In effort to increase students' reading especially in reading recount text, teacher must be smart to select the strategy to be used by students in comprehending the reading text. Based on the research findings, there is a significant effect of using speed reading strategy on students' reading recount text ability. It means that, speed reading strategy can be applied to increase students' reading comprehension. Thus, teacher can apply this strategy to increase students' reading comprehension and also as an the new innovation in learning reading.

3. Suggestion for school

School is an institution that has a purpose to make students enjoyable in teaching and learning process. School has to observe the students' subject in teaching and learning process, especially in teaching and learning English. School should find the students' interest in teaching and learning reading. So, school should help English teacher find the strategy and observe the teacher's activity in teaching English.

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CURRICULUM VITAE

A. Identity

Name : AHMAD TAHIR
Reg. No. : 13 340 0077
Place/Birth : P.P Makmur /August, 12th 1993
Sex : Male
Religion : Islam
Address : P.P Makmur, Binanga

B. Parents

Father's Name : Ibrahim Hadengganan Harahap
Mother's Name : Nurhasanah Siregar

C. Educational Background

1. Elementary School : SD Negeri No. 102060 Pembangunan (2005)
2. Junior High School : MTS Negeri Binanga (2008)
3. Senior High School : SMK Negeri 1 Portibi PALUTA (2011)
4. Institute : IAIN Padangsidempuan (2020)

APPENDIX 1

RENCANA PELAKSANAAN PEMBELAJARAN

(RPP)

Experimental Class

Satuan Pendidikan : MTsN 1 Binanga
Mata Pelajaran : Bahasa Inggris
Kelas/Semester : VIII¹/2 (dua)
Tema : Teks monolog berbentuk recount
Alokasi Waktu : 2 x 45 menit (Pertemuan 1)

A. Kompetensi Inti

- .1 Menghargai dan menghayati ajaran agama yang dianutnya.
- .2 Menghargai dan menghayati perilaku jujur, disiplin, tanggungjawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan sosial dan alam dalam jangkauan pergaulan dan keberadaannya
- .3 Memahami dan menerapkan pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.
- .4 Mengolah, menyaji, dan menalar dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.

B. Kompetensi Dasar Dan Indikator Pencapaian Kompetensi

Kompetensi Dasar	Indikator
3.11 Membandingkan fungsi sosial, struktur teks, dan	<ul style="list-style-type: none">• Membaca dan memahami teks recount• Mengidentifikasi topic dalam teks

<p>unsur kebahasaan beberapa teks personal recount lisan dan tulis dengan memberi dan meminta informasi terkait pengalaman pribadi di waktu lampau, pendek dan sederhana, sesuai dengan konteks penggunaannya</p>	<p>recount</p> <ul style="list-style-type: none"> • Mengidentifikasi ide pokok dalam teks recount • Memahami informasi yang penting dalam teks recount • Memahami kosa kata yang terdapat dalam esei pendek berbentuk recount • Menyimpulkan informasi yang terdapat dalam teks recount • Menjawab pertanyaan berdasarkan informasi yang ada dalam esei pendek berbentuk recount.
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C. Tujuan Pembelajaran

Setelah selesai mengikuti proses pembelajaran, peserta didik diharapkan dapat :

- Membaca dan memahami teks recount
- Mengidentifikasi topic dalam teks recount
- Mengidentifikasi ide pokok dalam teks recount
- Memahami informasi yang penting dalam teks recount
- Memahami kosa kata yang terdapat dalam esei pendek berbentuk recount
- Menyimpulkan informasi yang terdapat dalam teks recount
- Menjawab pertanyaan berdasarkan informasi yang ada dalam esei pendek berbentuk recount

D. Materi Pembelajaran

➤ Fungsi Sosial

Mendapat hiburan, menghibur, mengambil teladan dan mengerjakan nilai-nilai luhur.

➤ Struktur teks

- a. Orientation
- b. Event
- c. Re-orientation

➤ Unsur Kebahasaan

- a. Using Personal Participant; I, my family, we, etc.
- b. Use Past Tense; arrived.

- c. Use temporal connective/temporal sequence events; last holiday, the, next, after, and, before, etc.
- d. Using action verb; went, etc.
- e. Using linking items to do with time, was, were.

➤ **Topik**

Peristiwa, pengalaman yang terjadi di sekolah, rumah, lingkungan sekitar dan yang dapat menumbuhkan perilaku yang termuat di dalam KI.

E. Metode Pembelajaran

- 1. Pendekatan Pembelajaran : Scientific Approach
- 2. Model Pembelajaran : Discovery Learning, problem based learning (PBL)
- 3. Metode : Speed Reading Strategy

F. Media dan Alat/bahan

- 1. Media
 - a. Media : worksheet atau lembar kerja siswa
 - b. Lembar penelitian
- 2. Alat/bahan
 - a. Papan tulis, spidol/kapus, penghapus
 - b. Laptop, kalkulator, stopwach.

G. Sumber Belajar

- a. Buku penunjang kurikulum 2013 Mata Pelajaran Bahasa Inggris Kelas VIII, Kementerian Pendidikan Dan Kebudayaan Republik Indonesia 2016
- b. Kamus bahasa Inggris
- c. Sumber internet : <https://m.youtube.com> > watch

H. Langkah-langkah kegiatan pembelajaran

Pertemuan ke-1
Kegiatan pendahuluan (10 menit)
<p>uru:</p> <ul style="list-style-type: none"> 1. Melakukan pembukaan dengan salam pembuka dan berdoa untuk memulai pembelajaran. 2. Memeriksa kehadiran peserta didik sebagai sikap disiplin 3. Menyiapkan fisik dan psikis peserta didik dalam mengawali kegiatan pembelajaran

Kegiatan inti 70 menit	
<p>Guru :</p> <ol style="list-style-type: none"> 1. Guru memulai dengan memilih sebuah blok teks, seperti halaman atau beberapa paragraph. 2. Guru meminta siswa untuk melewati blok teks yang berbeda dan menyoroti/mewarnai poin-poin penting dari setiap baris. 3. Guru meminta siswa untuk membaca kembali teks yang diwarnai. 4. Guru mengajari siswa membaca secara agresif dan tanpa mengulang. 5. Guru membantu siswa untuk tetap focus dengan menggunakan tangan mereka saat membaca cepat. 6. Guru menjaga waktu membaca siswa secara teratur. 7. Guru menyuruh siswa menjawab pertanyaan-pertanyaan recount text dengan menggunakan speed reading strategy. 8. Guru memberikan waktu kepada siswa untuk membaca dan menjawab pertanyaan-pertanyaan. 9. Guru mengumpulkan dan mengoreksi lembar jawaban siswa. 	<p>Siswa :</p> <ol style="list-style-type: none"> 1. Mendengarkan penjelasan dan arahan dari guru 2. Membaca teks recount dan memberi tanda pada poin-poin penting 3. Membaca kembali teks yang diberi tanda 4. Membaca secara agresif, tanpa mengulang dan tetap focus dengan menggunakan tangan mereka 5. Menjawab pertanyaan-pertanyaan dalam teks recout dengan menggunakan strategy membaca cepat
Kegiatan penutup (10 menit)	
<ol style="list-style-type: none"> 1. Guru menanyakan hal yang tidak dipahami oleh siswa 2. Guru bersama siswa menyimpulkan pelajaran tentang materi yang dipelajari 	

- dan mencatat informasi penting
3. Guru meminta siswa mengakhiri kelas dengan berdo'a
 4. Salam.

I. Penilaian

1. Affective

a. Attitude assessment

- 1) Assessment techniques : Observations
- 2) Form of assessment : The observation

2. Cognitive

Indicator pencapaian Kompetensi	Teknik penelitian	Bentuk Instru ment	Instrument soal
<ol style="list-style-type: none"> 1. Mengidentifikasi topik yang terkait dalam teks berbentuk recount. 2. Mengidentifikasi kalimat pokok yang terdapat dalam teks. 3. Mengidentifikasi informasi penting yang terdapat dalam teks. 4. Memahami kosa kata yang terdapat dalam teks. 5. Menarik kesimpulan yang ada dalam teks. 	Teks Tulisan	Pilihan Ganda	Read the text carefully and then choose the correct answer based on the text by crossing a, b, c, or d.

a. Pedoman penilaian

- Jumlah skor maksimal keseluruhan adalah 100.
- Jawaban benar diberi skor 4 dan jawaban salah diberi skor 0. Jumlah skor keseluruhan

4 x 25 = 100. (Test Tertulis)

- Nilai maksimal = $\frac{\text{Jumlah jawaban yang benar}}{\text{jumlah soal}}$

b. Instrument: Answer the question based on the text!

c. Rubrik Penilaian

Penilaian	Skor
Jawaban benar	
Jawaban salah	

English Teacher

Megawati Harahap, S.Pd.

Binanga, 03, Mei, 2019

Researcher

**Ahmad Tahir Harahap
NIM. 13 340 0077**

APPENDIX 2

RENCANA PELAKSANAAN PEMBELAJARAN (RPP)

Control Class

Satuan Pendidikan : MTsN Binanga
 Mata Pelajaran : Bahasa Inggris
 Kelas/Semester : VIII²/2 (dua)
 Tema : Teks monolog berbentuk recount
 Alokasi Waktu : 2 x 45 menit(Pertemuan 1)

J. Kompetensi Inti

- .1 Menghargai dan menghormati ajaran agama yang dianutnya.
- .2 Menghargai dan menghormati perilaku jujur, disiplin, tanggung jawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan sosial dan alam dalam jangkauan pergaulan dan keberadaannya
- .3 Memahami dan menerapkan pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingintahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.
- .4 Mengolah, menyaji, dan menalar dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.

K. Kompetensi Dasar Dan Indikator Pencapaian Kompetensi

Kompetensi Dasar	Indikator
3.11 Membandingkan fungsi	• Membaca dan memahami teks recount

sosial, struktur teks, dan unsur kebahasaan beberapa teks personal recount lisan dan tulis dengan memberi dan meminta informasi terkait pengalaman pribadi di waktu lampau, pendek dan sederhana, sesuai dengan konteks penggunaannya	<ul style="list-style-type: none"> • Mengidentifikasi topic dalam teks recount • Mengidentifikasi ide pokok dalam teks recount • Memahami informasi yang penting dalam teks recount • Memahami kosa kata yang terdapat dalam esei pendek berbentuk recount • Menyimpulkan informasi yang terdapat dalam teks recount • Menjawab pertanyaan berdasarkan informasi yang ada dalam esei pendek berbentuk recount.
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L. Tujuan Pembelajaran

Setelah selesai mengikuti proses pembelajaran, peserta didik diharapkan dapat :

- Membaca dan memahami teks recount
- Mengidentifikasi topic dalam teks recount
- Mengidentifikasi ide pokok dalam teks recount
- Memahami informasi yang penting dalam teks recount
- Memahami kosa kata yang terdapat dalam esei pendek berbentuk recount
- Menyimpulkan informasi yang terdapat dalam teks recount
- Menjawab pertanyaan berdasarkan informasi yang ada dalam esei pendek berbentuk recount

M. Materi Pembelajaran

➤ Fungsi Sosial

Mendapat hiburan, menghibur, mengambil teladan dan mengerjakan nilai-nilai luhur.

➤ Struktur teks

- a. Orientation
- b. Event
- c. Re-orientation

➤ Unsur Kebahasaan

- f. Using Personal Participant; I, my family, we, etc.
- g. Use Past Tense; arrived.

- h. Use temporal connective/temporal sequence events; last holiday, the, next, after, and, before, etc.
- i. Using action verb; went, etc.
- j. Using linking items to do with time, was, were.

➤ **Topik**

Peristiwa, pengalaman yang terjadi di sekolah, rumah, lingkungan sekitar dan yang dapat menumbuhkan perilaku yang termuat di dalam KI.

N. Metode Pembelajaran

- 4. Pendekatan Pembelajaran : Scientific Approach
- 5. Model Pembelajaran : Discovery Learning, problem based learning (PBL)
- 6. Metode : Conventional Strategy

O. Media dan Alat/bahan

- 3. Media
 - a. Media : worksheet atau lembar kerja siswa
 - b. Lembar penelitian
- 4. Alat/bahan
 - a. Papantulis, spidol/kapus, penghapus
 - b. Laptop, kalkulator, stopwatch.

P. Sumber Belajar

- a. Buku penunjang kurikulum 2013 Mata Pelajaran Bahasa Inggris Kelas VIII, Kementerian Pendidikan Dan Kebudayaan Republik Indonesia 2016
- b. Kamus bahasa Inggris

Q. Langkah-langkah kegiatan pembelajaran

Pertemuan ke-1
Kegiatan pendahuluan (10 menit)
<p>Urutan:</p> <ul style="list-style-type: none"> 4. Melakukan pembukaan dengan salam pembuka dan berdoa untuk memulai pembelajaran. 5. Memeriksa kehadiran peserta didik sebagai sikap disiplin 6. Menyiapkan fisik dan psikis peserta didik dalam mengawali kegiatan pembelajaran

Kegiatan inti 70 menit	
<p>Guru :</p> <ol style="list-style-type: none"> 10. Guru menyediakan bahan ajar yang berhubungan dengan pelajaran menggunakan alat visualisasi, seperti papan tulis atau media yang tersedia untuk menjelaskan pokok bahasan yang disampaikan. 11. Guru menjelaskan tentang recount text dan komponen-komponen recount text. 12. Guru menugaskan siswa untuk membaca dalam memahami teks yang dipelajari. 13. Guru memberikan penjelasan tentang kosa kata dan tata bahasa yang berkaitan dengan recount text yang dibaca. 14. Memfasilitasi terjadinya interaksi antar peserta didik dan guru, lingkungan dan lainnya. 15. Guru melibatkan peserta didik secara aktif dalam setiap kegiatan pembelajaran. 16. Guru menyuruh siswa menjawab pertanyaan-pertanyaan recount text. 17. Guru memberikan waktu kepada siswa untuk membaca dan menjawab pertanyaan-pertanyaan. 18. Guru mengumpulkan dan mengoreksi lembar jawaban siswa. 	<p>Siswa :</p> <ol style="list-style-type: none"> 6. Mendengarkan penjelasan dari guru 7. Membaca dan memahami teks recount 8. Menjawab pertanyaan-pertanyaan dalam teks recount dengan menggunakan strategy membacacepat

Kegiatan penutup (10 menit)

5. Guru menanyakan hal yang tidak dipahami oleh siswa
6. Guru bersama siswa menyimpulkan pelajaran tentang materi yang dipelajari dan mencatat informasi penting
7. Guru meminta siswa mengakhiri kelas dengan berdoa
8. Salam.

R. Penilaian

3. Affective

- a. Attitude assessment
 - 3) Assessment techniques : Observations
 - 4) Form of assessment : The observation

4. Cognitive

Indicator pencapaian Kompetensi	Teknik penelitian	Bentuk Instrumen	Instrumen soal
6. Mengidentifikasi topik yang terkait dalam teks berbentuk recount.			Read the text carefully and then choose
7. Mengidentifikasi kalimat pokok yang terdapat dalam teks.			the correct answer based on the text by crossing a, b, c, or d.
8. Mengidentifikasi informasi penting yang terdapat dalam teks.	Teks Tulisan	Pilihan Ganda	
9. Memahami kosakata yang terdapat dalam teks.			
10. Menarik kesimpulan yang ada dalam teks.			

d. Pedoman penilaian

- Jumlah skor maksimal keseluruhan adalah 100.
- Jawaban benar diberi skor 4 dan jawaban salah diberi skor 0. Jumlah skor keseluruhan

4 x 25 = 100. (Test Tertulis)

- Nilai maksimal = $\frac{\text{Jumlah jawaban yang benar}}{\text{jumlah soal}}$

e. Instrument: Answer the question based on the text!

f. Rubrik Penilaian

Penilaian	or
Jawaban benar	4
Jawaban salah	0

English Teacher

Mega Harahap, S.Pd.

Binanga, - - 2019

Researcher

Ahmad Tahir Harahap
NIM. 13 340 0077

APPENDIX 3

Instrument for Pre-Test after Validity

Name :

Class :

Instruction: choose the correct answer by crossing (X) A, B, C, or D!

The following text is for question 1 to 5

Caught in the Rain

One day, Jane was caught in the rain. When she reached home, she started sneezing. Soon, Jane was down with cold.

The next morning, Jane's mother took her to the doctor. The doctor said that Jane had flu and he gave her some medicine. He also advised Jane to drink more water and take a good rest.

When Jane reached home, she went straight to bed. She slept till lunch time. Her mother carried her meal to her bedroom. She also brought Jane her medicine. After eating, Jane went back to sleep.

When Jane woke up for dinner, she felt much better. Her best friend called to find out how she was. She also told Jane briefly what the teacher had taught that day.

The next day, Jane had recovered. She missed her friends and was glad to go back to school again.

1. Why did Jane catch a cold?
 - a. She caught it from her friends.
 - b. She drunk to much ice.
 - c. She did not wear a raincoat.
 - d. She was caught in the rain.
2. What did her mother do knowing her daughter catch a cold?
 - a. She gave her some water.
 - b. She asked her to go to bed.
 - c. She took her to the doctor.
 - d. She gave her some medicine.
3. What did the doctor suggest her to do?
 - a. Not to catch in the rain.
 - b. To take enough nap.
 - c. To be careful.
 - d. To drink more water and take a good rest.
4. How long did Jane catch a cold? For...
 - a. One day
 - b. Two days
 - c. Three days
 - d. Four days.
5. "When Jane reached home, she went *straight* to bed." [paragraph 3]
What is the synonym of the italic word?

- a. Crooked
- b. Directly
- c. Strong
- d. Easy.

The following text is for question 6 to 9

A Small Rubber Ball

One afternoon, Peter bought a small rubber ball in a sport shop. He bought it with his brother. It was yellow and orange. The salesman said it could bounce very well.

Peter decided to test the bounce in his rubber ball. He started playing with it. The salesman did not lie. The rubber ball could bounce very well. In fact, it bounces so well that it went onto the street. Peter ran quickly after it.

The driver saw Peter but he could not brake the car in time. The driver told him not to play on the road again. Peter was taken to the hospital. He had to stay in a hospital for days.

Peter was better now. He was still in shock though. He realized he should not play ball close to the street like that.

- 6. What did Peter buy?
 - a. A tennis ball
 - b. A small rubber ball
 - c. A volleyball
 - d. A shoe.
- 7. Where did he buy it?
 - a. Toy store
 - b. Minimarket
 - c. Sport shop
 - d. Mall.
- 8. How did it look like?
 - a. The rubber ball could bounce very well.
 - b. The rubber ball couldn't bounce very well.
 - c. The salesman did lie.
 - d. The rubber ball is not good for Peter.
- 9. How was Peter now?
 - a. Peter playing with rubber ball.
 - b. Peter was taken to the hospital
 - c. Peter ran quickly
 - d. Peter was better now.

The following text for question 10 to 11

My Picnic

Last week, I went to Yogyakarta with my family. My father drove the car. My mother sat beside him. My sister and I sat in the back seats. We woke up early in the morning. My father prepared the car in the garage while mother was preparing food for breakfast and some snacks for us. My sister and I packed some

clothes. After everything got ready and we had our breakfast, we left the house at six o'clock. It was about nine Am.

We arrived at Yogyakarta. First of all we visited our uncle. We stayed there for an hour. Then we went to Parangtritis Beach. We got there at eleven o'clock. There were a lot of tourists because it was holiday. I saw many foreign visitors too. My parents watched us playing with sand in the beach. We did not swim and the a bath since the wave was trough. After having lunch, we went on our picnic to the museum and Maliboro shopping center. We drove back to Semarang at 7 o'clock and arrived home at ten. We were tired but happy.

10. What is the main idea of the text above?
 - a. We went there at morning.
 - b. We left the house at six o'clock.
 - c. We went to Yogyakarta by car.
 - d. Last week, I went to Yogyakarta with my family.
11. The conclusion of the text above is...
 - a. The author is very happy visiting Yogyakarta.
 - b. Visiting Yogyakarta is very wonderful.
 - c. Yogyakarta was a nice place.
 - d. There are many interesting places in Yogyakarta.

The following text for question 12 to 14

My Hobby

When I was in junior high school, I really loved football. Every Saturday afternoon I practiced in school field with my team and my coach. They were strong and smart players. My coach, Mr Sentana was a kind person. But, while he was coaching us, he was very discipline. He would grounded anyone who came late and not obeyed the team's rule.

With Mr Sentana, our team won many tournament in many big cities. Our team named after our school, 67 team (from SMP 67) and we had many fans too, you know. Oh, that was so cool. Now, I still love football and have a team too. But, my parents warn me to pay attention more to my study, football just for hobby.

12. When did the writer practiced football?
 - a. When the writer was in Junior high school.
 - b. Every day.
 - c. Afternoon.
 - d. Every Saturday afternoon.
13. He would grounded anyone who came late and not obeyed the team's rule. He refers to...
 - a. Writer.
 - b. Reader.
 - c. Mr. Sentana.
 - d. Mrs. Sentana.

14. What conclusion from the text above?
- Mr. Sentana won many tournament in many big cities.
 - I love football.
 - Football just for writer's hobby because his parents warn him to pay attention more to his study.
 - Football is not writer's hobby.

The following text is for question 15 to 18

Senggigi Beach

Last Saturday I woke up early, but I didn't get up because there was no school. Suddenly, my telephone was rung. It was my friend fanny, she asked me to go to out at 10.00 o'clock. She wanted to buy something in traditional market.

Finally, we were out. In the street, I saw a piece of pink coupon. Interested with its colour, I took it, the Fanny and I read this out. We were fully shocked, it was a receipt of four nights tour Lombok!! The expired date was that day. To our surprised, the name was Fanny Fenita and the birth date was exactly the same like Fanny my friend, and it was so valid for two person. My God!! We were thinking that maybe the coupon just fell from the sky and it was there for us.

We were in hurried to the address of the tour agency that issued the coupon. The tour agency took care of everything. We went home and still could not believe what was going on. Two days later we were on the Senggigi Beach, lied in the warmth sun. moreover, we had long public holiday, so we could enjoy the "gift" happily. We also bought some presents for our family and friends.

15. What is the main idea of paragraph 1?
- Writer's friend asked the writer to go to out at 10.00 o'clock for buy something in traditional market.
 - The writer didn't get up because there was no school.
 - There was no school on last Saturday.
 - The writer saw pink coupon.
16. What did happened in the story above?
- The writer and Fanny was shopping in traditional market.
 - Fanny asked the writer to the traditional market.
 - Fanny got coupon from the writer.
 - The writer and Fanny went to Lombok because pink coupon.
17. When did they go to the Senggigi Beach?
- Two days.
 - Two days before.
 - Two days later.
 - Two day later.
18. We were fully shocked, it was a receipt of four nights tour Lombok!!
- A piece of pink coupon.
 - Traditional market.
 - Something.
 - Street.

The following text is for question 19 to 22

My Adolescence

I had my adolescence when I was thirteen. It started with acne that showed up on my face. It was very annoying. It lowered my self-esteem and I was embarrassed to come out my house and play with my friends.

Fortunately, my Mum gave me a good medicine. In three weeks, the acnes started to vanish although those showed some black spots in my face.

That was my bad experience with adolescence, though there were stills lots of good experience too.

19. The text tells about...
 - a. The writer's bad experience in her adolescence.
 - b. The writer's acne.
 - c. The writer's good experience.
 - d. The writer's embarrassed experience
20. How was the writer's feeling when acne showed up on her face?
 - a. Her self-esteem is higher than before.
 - b. She was happy.
 - c. She was confidence to come out her house and play with her friends.
 - d. She was very annoying and embarrassed to come out her house and play with her friends.
21. What is main idea in second paragraph?
 - a. Writer's Mum gave good medicine to writer.
 - b. Writer's gave good medicine to writer's Mum.
 - c. Writer's Mum bought good medicine to writer.
 - d. Writer bought good medicine to writer's Mum.
22. What is the conclusion of the text?
 - a. There were stills lots of good experience too.
 - b. Acne was one of the writer's good experience.
 - c. There are some good and bad experience.
 - d. Acne was the writer's bad experience with adolescence

The following text is for question 23 to 25

Theatre at My Town

Last week I went to the theatre. It was the only theatre at my town. I had 1 free ticket to watch a movie. I had no idea about the movie I would like to watch and I did not know the schedule of that theatre. So that, I just wanted to come and see if there was any good movie.

I parked my motorcycle at the parking area and I walked slowly at the hall of the theatre. I took my ticket on my wallet and go to the information section to ask about how to use the ticket that day.

Unfortunately, I missed it. The ticket was already expired 2 days before.

I went home and I was very disappointed about that.

23. The text is about?
 - a. Theatre at my town.

- b. Watch a movie.
 - c. How to use the ticket.
 - d. 1 free ticket to the theatre
24. What is the conclusion of the text?
- a. I watch a nice movie.
 - b. I went home and I was very disappointed about that.
 - c. I was very disappointed about the movie.
 - d. I went home and I was very happy about that.
25. What is the main idea of paragraph 1?
- a. I had 1 free ticket to watch a movie.
 - b. I just wanted to come and see if there was any good movie.
 - c. I parked my motorcycle at the parking area.
 - d. The ticket was already expired 2 days before.

Validator

Megawati Harahap,S.Pd.

APPENDIX 4

Instrument for Post-Test after Validity

Name :

Class :

Instruction: choose the correct answer by crossing (X) A, B, C, or D!

The following text is for question 1 to 2

My Wish

Since I was in Elementary School, I have hankered for a computer. Whenever my classmates talked about the usefulness of computers, and how computers helped them in their studies, I felt left out. If I owned a computer, I could use it to do my school projects and to play my favorite computer games. I could also watch movies on the computer or surf the internet for information.

I tried to make father see the advantages of owning a computer. Although I tried to convince him, he objected to buying one. His reason was that once the excitement of owning it was over, the computer would be useless. Moreover, he could not afford to buy a computer as his earnings had been reduced as a result of the economic crisis.

When things get better, I will ask him again. Meanwhile, I have to be patient and hope that soon my wish will come true.

26. What is the main idea of the first paragraph is...
 - a. I have a hankered a computer.
 - b. I see the advantages of owning a computer.
 - c. I could watch movies.
 - d. The computer would be useless.
27. Why the writer father's objected to buying one?
 - a. Computer is useless
 - b. Computers are expensive
 - c. Computer for adults
 - d. Once the excitement of owning it was over and He could not afford to buy a computer.

The following text is for question 3 to 4

Terrible Day

The day when I went home from office was a terrible day. I was driving along the coast road when the car suddenly lurched to one side. At first I thought a tire had gone but then I saw telegraph poles collapsing like matchsticks which flashed and burnt.

The rocks that tumbled across the road almost hit my car and tried to abandon it. When I got back to town where many people crowded on the road, I saw some houses collapsed, the bridge had a crack, and the people said that the earthquake happened a few minutes ago.

Fortunately, the earthquake did not collapse my home. I thanked god happily because my wife and children were safe.

28. How did the man know the earthquake based on the text?
- He saw houses collapsed, the bridge had a crack, and the people said that the earthquake happened
 - His wife informed to him that the earthquake happened
 - His car suddenly lurched to one side
 - People ran out to his house.
29. What is mainly discussed in the third paragraph?
- The rocks that tumbled across the road almost hit my car and tried to abandon it
 - There were many people crowded on the road
 - The earthquake happened a few minutes ago
 - Some houses collapsed, the bridge had a crack.

The following text is for question 5 to 8

Study Tour

The students in the second level of SMP 2 Yogyakarta went to Bali last year for study tour. At 7 o'clock in the morning, the students went to Bali by bus. They were very enjoyable in the traveling. They sang some pop songs and made some games. They also exchange their snack each other. At 12 o'clock a.m., they stayed for an hour to have supper and took a rest in a restaurant. They were served with a lot of foods such as sate, noodle, meatball, and soup. Some of them ate sate, and the others ate meatball and noodle. They were very satisfied with the restaurant service.

One hour later, they came into the bus and continued their traveling. During the trip, most of them slept. Only some of them read some comics and listened to the music. At 06.00 p.m. they crossed the straits by snip. Lastly, they arrived in the hotel.

During three days, they went to Sanur Beach, Bedugul, Pure Bekasih, Kute Beach, Tanah Lot and Sangeh. They were the beautiful places that would never be forgotten. In the next morning, they came back to Yogyakarta.

30. The text is about...
- Beach in Bali
 - Traveling to Bali
 - My vocation
 - Traveling by bus.
31. What the main idea of the last paragraph?
- Visiting some beautiful places in Bali
 - They come back to Yogyakarta
 - Sanur Beach is very interesting Beach
 - That was a disappointed traveling.
32. Which places was not visited by them in Bali?
- Kute

- b. Sanur Beach
 - c. Sangeh
 - d. Tulamben.
33. “They were very enjoyable in the traveling”. They refers to...
- a. Students SMP N 2 Yogyakarta
 - b. Students and teachers SMP N 2 Yogyakarta
 - c. Students in the second level of SMP 2 Yogyakarta
 - d. Teachers SMP 2 Yogyakarta

The following text is for question 9 to 13

The Unlucky Camping

It was the beginning of wet season, but the weather was fine in the morning. My classmates and I went camping to the camping ground.

We set up our tent in the middle of a field near a small river. As soon as this was done, we cooked a meal over an open fire. Everything was alright in the afternoon. But at night while we were singing songs by the campfire, a strong wind blew. It brought disorder to our tent. We couldn't sleep because it was thundering and raining heavily. Lightning intensified the downpours. Soon the surrounding areas became flooded. We all panicked.

34. How was the weather at the beginning of wet season?
- a. Bad
 - b. Good.
 - c. Fine.
 - d. Clear.
35. What did the writer do then?
- a. Went camping.
 - b. Went shopping.
 - c. Went to the camp ground.
 - d. Made a fire.
36. What happened at night while we were singing songs by the campfire?
- a. Cooked a meal.
 - b. Sing a song.
 - c. A strong wind blew.
 - d. Make campfire.
37. “It brought disorder to our tent.” The word ‘it’ refers to...
- a. Small river
 - b. Lightning
 - c. A strong wind.
 - d. Flood.
38. What is the conclusion of the text above?
- a. We all enjoyable.
 - b. We all felt happy
 - c. We all felt scared
 - d. We all panicked

The following text is for question 14 to 17

Fife Cows Die in Heavy Rain

Qubabat is 60 kilometers south of Cairo. This small farming village had a rain storm for 17 hours yesterday. The river Nile flooded the fields. Five cows died in the water. The villagers could only watch when the river came into the village.

Many families climbed on to their roofs to escape the water. An old woman who lives in the village said, "I am eighty years old and I was born Qubabat. I have lived here all my life. I can't remember rain as bad as this. It's terrible.

39. Where did the story take place?
 - a. In Pakistan
 - b. In Iraq
 - c. In Qubabat, Cairo.
 - d. In India.
40. "I have lived *here* all my life." What does the word 'here' refer to?
 - a. In Cairo.
 - b. In her home.
 - c. In her life.
 - d. In Qubabat.
41. What is the conclusion of the text above?
 - a. It's amazing
 - b. It's terrible.
 - c. It's not good.
 - d. It's scared.
42. What happened?
 - a. Rain storm for 17 hours
 - b. The river Nile flooded the fields
 - c. An old woman who lives in the village.
 - d. I can't remember rain as bad as this.

The following text is for question 18 to 20

My Classmates

I was on a tour bus with my classmates. We were on our trip going back to school after a long day visiting museums and an amusement park. We felt very thirsty. We gave a big hurrah when two of our friends distributed soft drinks.

Soon the bus was noisy with gulping sounds. Everyone was enjoying his/her own drink. Everyone? Well, no... I found the taste of the soft drink some kind of funny. It was sour. I felt suspicious and quickly looked for the expiry date printed on the back of the cartoon. May 20! Gosh... that was nearly two months ago. I stood up, cleared my throat and said, "Stop drinking! This soft drinks are already expired. The expiry date is last May." At once almost everyone stopped drinking. Some of my friends even threw their half empty drinks into the garbage bins along the bus aisle.

Then, I heard a voice shouting, “You fool, that’s May next year, not May this year!” now everybody gave me a dark look. I felt terrible because I knew that we were still thirsty. I found out later that the drinks tasted sour because they had a new lime flavor.

43. What is the main idea from first paragraph?
 - a. The writer tour with his classmates
 - b. The writer and his friends felt very thirsty
 - c. His classmates distributed soft drinks
 - d. Writer going back to school.
44. What does the text above tell us about?
 - a. Embarrassing experience of the writer
 - b. The new product of soft drink
 - c. Tiring journey to the museum
 - d. The advertisement of the soft drink
45. From the text we know that the writer...
 - a. Knew the exact expired date of the drink
 - b. The writer’s friends thanked him for reminding them
 - c. The writer knew that the flavor of the drink was not good
 - d. The writer had made mistakes looking at the expired date of the drink.

The following text is for question 21 to 25

My Pen Pal’s

Last weekend, I visited my pen pal's house. His Name is Anto. There were many activities I did there. In the morning, Anto and I had breakfast. We had traditional food. I liked it very much.

After breakfast, he took me to the garden behind his house. The garden was very big and beautiful. There is a big bird cage in the garden. There were many kinds of birds in that cage. I spent a long time feeding the birds. I also took pictures with those beautiful birds.

After visiting the bird cage, Anto and I went to the flower garden not far from his house. We took a rest and had lunch under a big tree and watch butterflies flying above colourful flowers. In the afternoon, we swam in the pool in the backyard. It was so fun. I really enjoyed my time with Anto.

46. The text above tell us about?
 - e. A holiday at a friend's place
 - f. A picture of bird
 - g. A big bird cage
 - h. A big garden.
47. What is the last paragraph about?
 - e. Anto had butterflies as his pet
 - f. The writer's friend is a good swimmer
 - g. There are a lot of flowers in Anto's house
 - h. The writer had a good time with his friend.

-)
48. From the text, we know that the writer
- e. Had gone and visited many places during his holiday
 - f. Lived in the same village with his pen pal, Anto
 - g. Liked butterflies and swimming very much
 - h. Spent his holiday at friend's house.
49. What is main idea of the text?
- a. We had traditional food
 - b. There were many activities I did there
 - c. I spent a long time feeding the birds
 - d. We swam in the pool in the backyard.
50. "We in the pool in the backyard". Complete the sentences to make it better.
- a. Swim
 - b. Swam
 - c. Swimming
 - d. Swimmer

Validator

Megawati Harahap, S.Pd.

APPENDIX 5

KEY ANSWER

A. Pre-Test

B. Post-Test

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

APPENDIX 6

Validity of Pre-Test

No	1	2	3	4	5	6	7	8	9	1	1	1	13	1	1	1	1	1	1	2
1	1	0	1	1	1	1	0	1	0	0	1	0	1	1	0	1	0	1	0	1
2	0	0	0	0	0	1	1	1	1	0	0	1	0	0	1	0	0	0	0	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
4	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
5	1	0	1	0	1	0	1	1	0	1	1	1	1	1	0	1	0	1	1	1
6	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0
7	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0
8	1	0	0	1	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	1
9	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	1	1	1	0	1
10	0	0	1	1	1	0	1	1	1	1	1	0	1	0	1	1	0	1	1	1
11	1	0	1	0	1	1	0	1	1	0	1	1	1	0	1	0	1	0	1	1
12	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1
13	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
14	0	0	0	1	1	1	0	1	0	1	1	0	1	0	1	1	1	1	1	1
15	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	1	1	1	1
16	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1
17	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1
18	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	0	1	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	0
21	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
22	1	1	1	0	1	0	0	1	1	1	0	0	0	1	1	1	1	1	0	1
23	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	0	1	0	1	1
24	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1
N=24	14	10	18	14	22	13	15	22	19	18	17	13	19	14	17	18	17	13	22	21
P	0.583	0.417	0.75	0.583	0.542	0.625	0.917	0.79	0.75	0.71	0.54	0.79	0.58	0.71	0.75	0.71	0.542	0.917	0.875	
Q	0.417	0.583	0.25	0.417	0.458	0.375	0.083	0.21	0.25	0.29	0.46	0.21	0.42	0.29	0.25	0.29	0.458	0.083	0.125	

No	21	22	23	24	25	26	27	28	29	30	Xt	Xt ²
1	0	1	0	1	0	0	1	1	0	1	17	289
2	1	0	0	0	1	0	1	0	0	0	11	121
3	1	0	1	1	1	1	0	1	1	1	27	729
4	0	1	0	0	1	0	1	1	1	1	23	529
5	1	0	0	1	1	1	1	1	1	1	22	484
6	0	0	1	1	1	1	0	1	0	1	13	169
7	0	0	0	0	0	0	0	0	0	0	4	16
8	0	0	0	1	0	0	0	0	0	1	11	121
9	1	1	0	1	1	0	0	1	0	1	15	225
10	0	1	0	1	1	1	0	1	1	1	21	441
11	1	1	0	1	1	1	1	0	1	1	21	441
12	0	0	0	1	0	1	1	1	1	1	22	484
13	1	1	1	1	0	0	1	0	0	1	24	576
14	0	0	1	1	0	1	1	0	1	1	19	361
15	1	0	0	1	0	1	0	0	1	1	21	441
16	1	1	1	1	0	0	1	1	0	0	23	529
17	1	0	1	1	0	1	1	1	1	1	24	576
18	1	1	1	1	1	1	1	1	1	1	27	729
19	1	1	1	1	1	1	1	1	0	1	29	841
20	1	1	1	1	1	0	1	0	0	1	21	441
21	0	1	1	1	0	1	1	1	1	1	26	676
22	1	1	1	1	0	1	1	0	0	1	20	400
23	1	1	1	1	1	1	1	1	1	1	26	676
24	1	1	1	1	0	1	1	1	1	1	25	625
N= 24	15	14	13	21	12	15	17	15	13	21	$\sum xt$ = 492	$\sum xt^2$ = 10920
P	0.625	0.58	0.54	0.875	0.5	0.625	0.71	0.625	0.54	0.875		
Q	0.375	0.42	0.46	0.125	0.5	0.375	0.29	0.375	0.46	0.125		

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.	22.71	20.50	5.89	0.583	0.417	0.444	0.404	Valid
2.	24.50	20.50	5.89	0.417	0.583	0.573	0.404	Valid
3.	22.22	20.50	5.89	0.75	0.25	0.506	0.404	Valid
4.	22.57	20.50	5.89	0.583	0.417	0.416	0.404	Valid
5.	21.68	20.50	5.89	0.917	0.083	0.665	0.404	Valid
6.	22.30	20.50	5.89	0.542	0.458	0.333	0.404	Invalid
7.	22.66	20.50	5.89	0.625	0.375	0.475	0.404	Valid
8.	21.27	20.50	5.89	0.917	0.083	0.435	0.404	Valid
9.	21.84	20.50	5.89	0.79	0.21	0.444	0.404	Valid
10.	22.00	20.50	5.89	0.75	0.25	0.441	0.404	Valid
11.	22.41	20.50	5.89	0.71	0.29	0.505	0.404	Valid
12.	22.53	20.50	5.89	0.54	0.46	0.376	0.404	Invalid
13.	22.00	20.50	5.89	0.79	0.21	0.496	0.404	Valid
14.	23.64	20.50	5.89	0.58	0.42	0.631	0.404	Valid
15.	21.94	20.50	5.89	0.71	0.29	0.381	0.404	Invalid
16.	22.11	20.50	5.89	0.75	0.25	0.473	0.404	Valid
17.	22.41	20.50	5.89	0.71	0.29	0.505	0.404	Valid
18.	20.46	20.50	5.89	0.542	0.458	-0.007	0.404	Invalid
19.	21.40	20.50	5.89	0.917	0.083	0.511	0.404	Valid
20.	21.61	20.50	5.89	0.875	0.125	0.502	0.404	Valid
21.	22.40	20.50	5.89	0.625	0.375	0.416	0.404	Valid
22.	22.71	20.50	5.89	0.58	0.42	0.444	0.404	Valid
23.	23.38	20.50	5.89	0.54	0.46	0.532	0.404	Valid
24.	21.61	20.50	5.89	0.875	0.125	0.502	0.404	Valid

25.	21.33	20.50	5.89	0.5	0.5	0.141	0.404	Invalid
26.	22.86	20.50	5.89	0.625	0.375	0.518	0.404	Valid
27.	22.35	20.50	5.89	0.71	0.29	0.490	0.404	Valid
28.	22.66	20.50	5.89	0.625	0.375	0.475	0.404	Valid
29.	23.38	20.50	5.89	0.54	0.46	0.532	0.404	Valid
30.	21.61	20.50	5.89	0.875	0.125	0.502	0.404	Valid

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)

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

$$M_t = \frac{492}{24} = 20.50$$

2. Standard Deviation (SD_t)

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

$$SD_t = \sqrt{\frac{10920}{24} - \left(\frac{492}{24}\right)^2}$$

$$SD_t = \sqrt{455 - 20.5^2}$$

$$SD_t = \sqrt{455 - 420.25} = \sqrt{34.75} = 5.89$$

3. Means Score (M_p)

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

$$M_{p1} = \frac{17+27+23+22+11+21+23+27+29+21+26+20+26+25}{14} = \frac{318}{14} = 22.71$$

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

$$M_{p2} = \frac{27+24+21+23+24+29+26+20+26+25}{10} = \frac{245}{10} = 24.50$$

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

$$M_{p3} = \frac{17+27+23+22+4+21+21+22+24+21+24+27+29+21+26+20+25}{18} = \frac{400}{18} = 22.22$$

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

$$M_{p4} = \frac{17+27+11+21+22+24+19+21+23+24+27+29+26+25}{14} = \frac{316}{14} = 22.57$$

$$\begin{aligned} \text{Item 5 } M_{p5} &= \frac{\text{the total of students score that true item answer}}{n5} \\ M_{p5} &= \frac{17+27+23+22+13+11+15+21+21+22+24+19+21+23+24+27+29+21+26+20+26+25}{22} \\ &= \frac{477}{22} = 21.68 \end{aligned}$$

$$\begin{aligned} \text{Item 6 } M_{p6} &= \frac{\text{the total of students score that true item answer}}{n6} \\ M_{p6} &= \frac{17+11+27+23+21+22+24+19+21+23+27+29+26}{13} = \frac{290}{13} = 22.30 \end{aligned}$$

$$\begin{aligned} \text{Item 7 } M_{p7} &= \frac{\text{the total of students score that true item answer}}{n7} \\ M_{p7} &= \frac{11+27+23+22+13+21+22+24+23+27+29+21+26+26+25}{15} = \frac{340}{15} = 22.66 \end{aligned}$$

$$\begin{aligned} \text{Item 8 } M_{p8} &= \frac{\text{the total of students score that true item answer}}{n8} \\ M_{p8} &= \frac{17+11+27+23+22+4+15+21+21+22+24+19+21+23+24+27+29+21+26+20+26+25}{22} \\ &= \frac{468}{22} = 21.27 \end{aligned}$$

$$\begin{aligned} \text{Item 9 } M_{p9} &= \frac{\text{the total of students score that true item answer}}{n9} \\ M_{p9} &= \frac{11+27+23+13+11+21+21+22+24+21+23+24+27+29+21+26+20+26+25}{19} \\ &= \frac{415}{19} = 21.84 \end{aligned}$$

$$\begin{aligned} \text{Item 10 } M_{p10} &= \frac{\text{the total of students score that true item answer}}{n10} \\ M_{p10} &= \frac{27+23+22+4+15+21+22+24+19+21+24+27+29+21+26+20+26+25}{18} \\ &= \frac{396}{18} = 22.00 \end{aligned}$$

$$\begin{aligned} \text{Item 11 } M_{p11} &= \frac{\text{the total of students score that true item answer}}{n11} \\ M_{p11} &= \frac{17+27+23+22+11+21+21+22+24+19+21+23+24+29+26+26+25}{17} \\ &= \frac{381}{17} = 22.41 \end{aligned}$$

$$\text{Item 12 } M_{p12} = \frac{\text{the total of students score that true item answer}}{n_{12}}$$

$$M_{p12} = \frac{11+27+23+22+11+21+24+27+29+21+26+26+25}{13} = \frac{293}{13} = 22.53$$

$$\text{Item 13 } M_{p13} = \frac{\text{the total of students score that true item answer}}{n_{13}}$$

$$M_{p13} = \frac{17+27+23+22+11+15+21+21+22+24+19+21+23+24+27+29+21+26+25}{19}$$

$$= \frac{418}{19} = 22.00$$

$$\text{Item 14 } M_{p14} = \frac{\text{the total of students score that true item answer}}{n_{14}}$$

$$M_{p14} = \frac{17+27+23+22+22+24+21+23+24+27+29+26+20+26}{14} = \frac{331}{14} = 23.64$$

$$\text{Item 15 } M_{p15} = \frac{\text{the total of students score that true item answer}}{n_{15}}$$

$$M_{p15} = \frac{11+23+15+21+21+22+24+19+21+23+24+27+29+21+26+20+26}{17}$$

$$= \frac{373}{17} = 21.94$$

$$\text{Item 16 } M_{p16} = \frac{\text{the total of students score that true item answer}}{n_{16}}$$

$$M_{p16} = \frac{17+27+23+22+13+15+21+22+24+19+23+24+27+29+21+26+20+25}{18}$$

$$= \frac{398}{18} = 22.11$$

$$\text{Item 17 } M_{p17} = \frac{\text{the total of students score that true item answer}}{n_{17}}$$

$$M_{p17} = \frac{27+23+13+15+21+22+24+19+21+23+24+27+29+21+26+20+26}{17}$$

$$= \frac{381}{17} = 22.41$$

$$\text{Item 18 } M_{p18} = \frac{\text{the total of students score that true item answer}}{n_{18}}$$

$$M_{p18} = \frac{17+27+22+13+4+21+19+21+23+24+29+21+25}{13} = \frac{266}{13} = 20.46$$

$$\text{Item 19 } M_{p19} = \frac{\text{the total of students score that true item answer}}{n_{19}}$$

$$M_{p19} = \frac{11+27+23+22+13+11+15+21+21+22+24+19+21+23+24+27+19+21+26+20+26+25}{22}$$

$$= \frac{471}{22} = 21.40$$

Item 20 $M_{p20} = \frac{\text{the total of students score that true item answer}}{n20}$

$$M_{p20} = \frac{17+11+27+23+22+11+15+21+21+22+24+19+21+23+24+27+29+26+20+26+25}{21}$$

$$= \frac{454}{21} = 21.61$$

Item 21 $M_{p21} = \frac{\text{the total of students score that true item answer}}{n21}$

$$M_{p21} = \frac{11+27+22+15+21+24+21+23+24+27+29+21+20+26+25}{15}$$

$$= \frac{336}{15} = 22.40$$

Item 22 $M_{p22} = \frac{\text{the total of students score that true item answer}}{n22}$

$$M_{p22} = \frac{17+23+15+21+21+24+23+27+29+21+26+20+26+25}{14} = \frac{318}{14} = 22.71$$

Item 23 $M_{p23} = \frac{\text{the total of students score that true item answer}}{n23}$

$$M_{p23} = \frac{27+13+24+19+23+24+27+29+21+26+20+26+25}{13} = \frac{304}{13} = 23.38$$

Item 24 $M_{p24} = \frac{\text{the total of students score that true item answer}}{n24}$

$$M_{p24} = \frac{17+27+22+13+11+15+21+21+22+24+19+21+23+24+27+29+21+26+20+26+25}{21}$$

$$= \frac{454}{21} = 21.61$$

Item 25 $M_{p25} = \frac{\text{the total of students score that true item answer}}{n25}$

$$M_{p25} = \frac{11+27+23+22+13+15+21+21+27+29+21+26}{12} = \frac{256}{12} = 21.33$$

Item 26 $M_{p26} = \frac{\text{the total of students score that true item answer}}{n26}$

$$M_{p26} = \frac{27+22+13+21+21+22+19+21+24+27+29+26+20+26+25}{15}$$

$$= \frac{343}{15} = 22.86$$

$$\text{Item 27 } M_{p27} = \frac{\text{the total of students score that true item answer}}{n27}$$

$$M_{p27} = \frac{17+11+23+22+21+22+24+19+23+24+27+29+21+26+20+26+25}{17}$$

$$= \frac{380}{17} = 22.35$$

$$\text{Item 28 } M_{p28} = \frac{\text{the total of students score that true item answer}}{n28}$$

$$M_{p28} = \frac{17+27+23+22+13+15+21+22+23+24+27+29+26+26+25}{15}$$

$$= \frac{340}{15} = 22.66$$

$$\text{Item 29 } M_{p29} = \frac{\text{the total of students score that true item answer}}{n29}$$

$$M_{p29} = \frac{27+23+22+21+21+22+19+21+24+27+26+26+25}{13} = \frac{304}{13} = 23.38$$

$$\text{Item 30 } M_{p30} = \frac{\text{the total of students score that true item answer}}{n30}$$

$$M_{p30} = \frac{17+27+23+22+13+11+15+21+21+22+24+19+21+24+27+29+21+26+20+26+26}{21}$$

$$= \frac{454}{21} = 21.61$$

4. Calculation of the formulation $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$\text{Item 1 } r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{22.71 - 20.50}{5.89} \sqrt{\frac{0.583}{0.417}}$$

$$r_{pbi} = \frac{2.21}{5.89} \sqrt{1.398}$$

$$r_{pbi} = 0.375 \times 1.182 = 0.444$$

$$\begin{aligned}\text{Item 2} = r_{\text{pbi}} &= \frac{24.50-20.50}{5.89} \sqrt{\frac{0.417}{0.583}} \\ r_{\text{pbi}} &= \frac{4}{5.89} \sqrt{0.714} \\ r_{\text{pbi}} &= 0.679 \times 0.843 = 0.573\end{aligned}$$

$$\begin{aligned}\text{Item 3} = r_{\text{pbi}} &= \frac{22.22-20.50}{5.89} \sqrt{\frac{0.75}{0.25}} \\ r_{\text{pbi}} &= \frac{1.72}{5.89} \sqrt{3} \\ r_{\text{pbi}} &= 0.292 \times 1.732 = 0.506\end{aligned}$$

$$\begin{aligned}\text{Item 4} = r_{\text{pbi}} &= \frac{22.57-20.50}{5.89} \sqrt{\frac{0.583}{0.417}} \\ r_{\text{pbi}} &= \frac{2.07}{5.89} \sqrt{1.4} \\ r_{\text{pbi}} &= 0.351 \times 1.185 = 0.416\end{aligned}$$

$$\begin{aligned}\text{Item 5} = r_{\text{pbi}} &= \frac{21.68-20.50}{5.89} \sqrt{\frac{0.917}{0.083}} \\ r_{\text{pbi}} &= \frac{1.18}{5.89} \sqrt{11} \\ r_{\text{pbi}} &= 0.200 \times 3.325 = 0.665\end{aligned}$$

$$\begin{aligned}\text{Item 6} = r_{\text{pbi}} &= \frac{22.30-20.50}{5.89} \sqrt{\frac{0.542}{0.458}} \\ r_{\text{pbi}} &= \frac{1.8}{5.89} \sqrt{1.182} \\ r_{\text{pbi}} &= 0.305 \times 1.091 = 0.333\end{aligned}$$

$$\begin{aligned}\text{Item 7} = r_{\text{pbi}} &= \frac{22.66-20.50}{5.89} \sqrt{\frac{0.625}{0.375}} \\ r_{\text{pbi}} &= \frac{2.16}{5.89} \sqrt{1.667} \\ r_{\text{pbi}} &= 0.366 \times 1.297 = 0.475\end{aligned}$$

$$\text{Item 8} = r_{\text{pbi}} = \frac{21.27-20.50}{5.89} \sqrt{\frac{0.917}{0.083}}$$

$$r_{\text{pbi}} = \frac{0.77}{5.89} \sqrt{11}$$

$$r_{\text{pbi}} = 0.130 \times 3.346 = 0.435$$

$$\text{Item 9} = r_{\text{pbi}} = \frac{21.84-20.50}{5.89} \sqrt{\frac{0.79}{0.21}}$$

$$r_{\text{pbi}} = \frac{1.34}{5.89} \sqrt{3.8}$$

$$r_{\text{pbi}} = 0.227 \times 1.955 = 0.444$$

$$\text{Item 10} = r_{\text{pbi}} = \frac{22.00-20.50}{5.89} \sqrt{\frac{0.75}{0.25}}$$

$$r_{\text{pbi}} = \frac{1.5}{5.89} \sqrt{3}$$

$$r_{\text{pbi}} = 0.254 \times 1.736 = 0.441$$

$$\text{Item 11} = r_{\text{pbi}} = \frac{22.41-20.50}{5.89} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{1.91}{5.89} \sqrt{2.43}$$

$$r_{\text{pbi}} = 0.324 \times 1.558 = 0.505$$

$$\text{Item 12} = r_{\text{pbi}} = \frac{22.53-20.50}{5.89} \sqrt{\frac{0.54}{0.46}}$$

$$r_{\text{pbi}} = \frac{2.03}{5.89} \sqrt{1.18}$$

$$r_{\text{pbi}} = 0.344 \times 1.093 = 0.376$$

$$\text{Item 13} = r_{\text{pbi}} = \frac{22.00-20.50}{5.89} \sqrt{\frac{0.79}{0.21}}$$

$$r_{\text{pbi}} = \frac{1.5}{5.89} \sqrt{3.8}$$

$$r_{\text{pbi}} = 0.254 \times 1.952 = 0.496$$

$$\text{Item 14} = r_{\text{pbi}} = \frac{23.64-20.50}{5.89} \sqrt{\frac{0.58}{0.42}}$$

$$r_{\text{pbi}} = \frac{3.14}{5.89} \sqrt{1.4}$$

$$r_{\text{pbi}} = 0.533 \times 1.183 = 0.631$$

$$\text{Item 15} = r_{\text{pbi}} = \frac{21.94 - 20.50}{5.89} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{1.44}{5.89} \sqrt{2.43}$$

$$r_{\text{pbi}} = 0.244 \times 1.561 = 0.381$$

$$\text{Item 16} = r_{\text{pbi}} = \frac{22.11 - 20.50}{5.89} \sqrt{\frac{0.75}{0.25}}$$

$$r_{\text{pbi}} = \frac{1.61}{5.89} \sqrt{3}$$

$$r_{\text{pbi}} = 0.273 \times 1.732 = 0.473$$

$$\text{Item 17} = r_{\text{pbi}} = \frac{22.41 - 20.50}{5.89} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{1.91}{5.89} \sqrt{2.43}$$

$$r_{\text{pbi}} = 0.324 \times 1.558 = 0.505$$

$$\text{Item 18} = r_{\text{pbi}} = \frac{20.46 - 20.50}{5.89} \sqrt{\frac{0.542}{0.458}}$$

$$r_{\text{pbi}} = \frac{-0.04}{5.89} \sqrt{1.182}$$

$$r_{\text{pbi}} = -0.06 \times 0.116 = -0.007$$

$$\text{Item 19} = r_{\text{pbi}} = \frac{21.40 - 20.50}{5.89} \sqrt{\frac{0.917}{0.083}}$$

$$r_{\text{pbi}} = \frac{0.9}{5.89} \sqrt{11}$$

$$r_{\text{pbi}} = 0.152 \times 3.361 = 0.511$$

$$\text{Item 20} = r_{\text{pbi}} = \frac{21.61 - 20.50}{5.89} \sqrt{\frac{0.875}{0.125}}$$

$$r_{\text{pbi}} = \frac{1.11}{5.89} \sqrt{7}$$

$$r_{\text{pbi}} = 0.188 \times 2.670 = 0.502$$

$$\begin{aligned}\text{Item 21} = r_{\text{pbi}} &= \frac{22.40-20.50}{5.89} \sqrt{\frac{0.625}{0.375}} \\ r_{\text{pbi}} &= \frac{1.9}{5.89} \sqrt{1.667} \\ r_{\text{pbi}} &= 0.322 \times 1.291 = 0.416\end{aligned}$$

$$\begin{aligned}\text{Item 22} = r_{\text{pbi}} &= \frac{22.71-20.50}{5.89} \sqrt{\frac{0.58}{0.42}} \\ r_{\text{pbi}} &= \frac{2.21}{5.89} \sqrt{1.4} \\ r_{\text{pbi}} &= 0.375 \times 1.184 = 0.444\end{aligned}$$

$$\begin{aligned}\text{Item 23} = r_{\text{pbi}} &= \frac{23.38-20.50}{5.89} \sqrt{\frac{0.54}{0.46}} \\ r_{\text{pbi}} &= \frac{2.88}{5.89} \sqrt{1.18} \\ r_{\text{pbi}} &= 0.488 \times 1.090 = 0.532\end{aligned}$$

$$\begin{aligned}\text{Item 24} = r_{\text{pbi}} &= \frac{21.61-20.50}{5.89} \sqrt{\frac{0.875}{0.125}} \\ r_{\text{pbi}} &= \frac{1.11}{5.89} \sqrt{7} \\ r_{\text{pbi}} &= 0.188 \times 2.670 = 0.502\end{aligned}$$

$$\begin{aligned}\text{Item 25} = r_{\text{pbi}} &= \frac{21.33-20.50}{5.89} \sqrt{\frac{0.5}{0.5}} \\ r_{\text{pbi}} &= \frac{0.83}{5.89} \sqrt{1} \\ r_{\text{pbi}} &= 0.140 \times 1.007 = 0.141\end{aligned}$$

$$\begin{aligned}\text{Item 26} = r_{\text{pbi}} &= \frac{22.86-20.50}{5.89} \sqrt{\frac{0.625}{0.375}} \\ r_{\text{pbi}} &= \frac{2.36}{5.89} \sqrt{1.667} \\ r_{\text{pbi}} &= 0.400 \times 1.295 = 0.518\end{aligned}$$

$$\begin{aligned}\text{Item 27} = r_{\text{pbi}} &= \frac{22.35-20.50}{5.89} \sqrt{\frac{0.71}{0.29}} \\ r_{\text{pbi}} &= \frac{1.85}{5.89} \sqrt{2.43}\end{aligned}$$

$$r_{\text{pbi}} = 0.314 \times 1.560 = 0.490$$

$$\text{Item 28} = r_{\text{pbi}} = \frac{22.66 - 20.50}{5.89} \sqrt{\frac{0.625}{0.375}}$$

$$r_{\text{pbi}} = \frac{2.16}{5.89} \sqrt{1.667}$$

$$r_{\text{pbi}} = 0.366 \times 1.297 = 0.475$$

$$\text{Item 29} = r_{\text{pbi}} = \frac{23.38 - 20.50}{5.89} \sqrt{\frac{0.54}{0.46}}$$

$$r_{\text{pbi}} = \frac{2.88}{5.89} \sqrt{1.18}$$

$$r_{\text{pbi}} = 0.488 \times 1.090 = 0.532$$

$$\text{Item 30} = r_{\text{pbi}} = \frac{21.61 - 20.50}{5.89} \sqrt{\frac{0.875}{0.125}}$$

$$r_{\text{pbi}} = \frac{1.11}{5.89} \sqrt{7}$$

$$r_{\text{pbi}} = 0.188 \times 2.670 = 0.502$$

APPENDIX 9

Validity of Post-Test

No	1	2	3	4	5	6	7	8	9	1	1	1	13	1	1	1	1	1	1	2
1	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	1	0	1	0	1
2	0	0	0	0	1	1	1	0	0	0	1	0	1	0	1	0	0	0	0	1
3	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	1	1
4	1	0	1	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1
5	1	0	0	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	1	1
6	0	0	1	1	1	0	0	0	1	1	1	1	0	1	0	1	1	1	1	0
7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
9	1	0	1	0	1	0	1	0	0	1	1	0	1	1	1	1	1	1	0	1
10	0	1	1	1	1	0	0	1	0	1	0	0	0	1	1	1	0	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1
12	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1
14	1	1	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1
15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
16	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1
17	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1
18	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1
19	0	1	1	1	1	0	1	1	1	0	0	1	0	1	1	0	1	1	0	1
20	0	1	1	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	0
21	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1
22	1	1	1	0	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1
23	1	1	1	1	0	0	1	0	1	1	0	1	1	1	1	0	1	1	1	1
24	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
N=24	14	15	16	13	18	12	16	12	11	17	14	12	17	15	18	17	17	18	21	20
P	0.583	0.625	0.667	0.542	0.75	0.5	0.667	0.5	0.46	0.71	0.58	0.5	0.71	0.625	0.75	0.71	0.71	0.75	0.875	0.83
Q	0.417	0.375	0.333	0.458	0.25	0.5	0.333	0.5	0.54	0.29	0.42	0.5	0.29	0.375	0.25	0.29	0.29	0.25	0.125	0.17

APPENDIX 10

Table Validity of Post-Test

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.	20.71	19.45	6.24	0.583	0.417	0.239	0.404	Invalid
2.	22.93	19.45	6.24	0.625	0.375	0.721	0.404	Valid
3.	21.87	19.45	6.24	0.667	0.333	0.550	0.404	Valid
4.	20.76	19.45	6.24	0.542	0.458	0.229	0.404	Invalid
5.	21.00	19.45	6.24	0.75	0.25	0.429	0.404	Valid
6.	20.08	19.45	6.24	0.5	0.5	0.101	0.404	Invalid
7.	20.81	19.45	6.24	0.667	0.333	0.635	0.404	Valid
8.	22.25	19.45	6.24	0.5	0.5	0.449	0.404	Valid
9.	21.71	19.45	6.24	0.46	0.54	0.578	0.404	Valid
10.	21.23	19.45	6.24	0.71	0.29	0.445	0.404	Valid
11.	21.64	19.45	6.24	0.58	0.42	0.416	0.404	Valid
12.	23.08	19.45	6.24	0.5	0.5	0.583	0.404	Valid
13.	21.47	19.45	6.24	0.71	0.29	0.504	0.404	Valid
14.	21.46	19.45	6.24	0.625	0.375	0.417	0.404	Valid
15.	20.94	19.45	6.24	0.75	0.25	0.414	0.404	Valid
16.	21.47	19.45	6.24	0.71	0.29	0.504	0.404	Valid
17.	21.35	19.45	6.24	0.71	0.29	0.475	0.404	Valid
18.	20.05	19.45	6.24	0.75	0.25	0.166	0.404	Invalid
19.	20.42	19.45	6.24	0.875	0.125	0.413	0.404	Valid
20.	20.90	19.45	6.24	0.83	0.17	0.518	0.404	Valid
21.	22.15	19.45	6.24	0.54	0.46	0.471	0.404	Valid
22.	21.75	19.45	6.24	0.58	0.42	0.443	0.404	Valid
23.	22.76	19.45	6.24	0.54	0.46	0.579	0.404	Valid
24.	20.71	19.45	6.24	0.875	0.125	0.534	0.404	Valid
25.	20.90	19.45	6.24	0.5	0.5	0.235	0.404	Invalid
26.	20.75	19.45	6.24	0.625	0.375	0.555	0.404	Valid

27.	21.58	19.45	6.24	0.71	0.29	0.534	0.404	Valid
28.	21.46	19.45	6.24	0.625	0.375	0.417	0.404	Valid
29.	22.23	19.45	6.24	0.54	0.46	0.485	0.404	Valid
30.	20.76	19.45	6.24	0.875	0.125	0.555	0.404	Valid

APPENDIX 11

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

B. Calculation of Pre-Test

5. Means score from score total (M_t)

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

$$M_t = \frac{467}{24} = 19.45$$

6. Standard Deviation (SD_t)

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

$$SD_t = \sqrt{\frac{10015}{24} - \left(\frac{467}{24}\right)^2}$$

$$SD_t = \sqrt{417.29 - 19.45^2}$$

$$SD_t = \sqrt{417.29 - 378.30} = \sqrt{38.99} = 6.24$$

7. Means Score (M_p)

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

$$M_{p1} = \frac{15+25+19+22+8+19+26+23+23+9+26+23+25+27}{14} = \frac{290}{14} = 20.71$$

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

$$M_{p2} = \frac{25+19+26+21+23+23+18+23+26+21+20+24+23+25+27}{15} = \frac{344}{15} = 22.93$$

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

$$M_{p3} = \frac{25+19+18+19+19+26+21+23+18+23+26+21+20+24+23+25}{16} = \frac{350}{16} = 21.87$$

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

$$M_{p4} = \frac{15+25+22+18+2+19+26+23+23+21+24+25+27}{13} = \frac{270}{13} = 20.76$$

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

$$M_{p5} = \frac{11+25+19+22+18+8+19+19+26+21+23+23+23+26+21+24+23+27}{18} = \frac{378}{18} = 21.00$$

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

$$M_{p6} = \frac{15+11+25+19+22+8+26+23+18+24+23+27}{12} = \frac{241}{12} = 20.08$$

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

$$M_{p7} = \frac{11+25+22+19+26+23+18+23+26+21+20+24+23+25+27}{16} = \frac{333}{16} = 20.81$$

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

$$M_{p8} = \frac{15+19+19+26+21+23+23+23+26+21+24+27}{12} = \frac{267}{12} = 22.25$$

$$\text{Item 9 } M_{p9} = \frac{\text{the total of students score that true item answer}}{n9}$$

$$M_{p9} = \frac{25+26+23+23+26+21+20+23+25+27}{11} = \frac{239}{11} = 21.72$$

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

$$M_{p10} = \frac{15+25+22+18+8+19+19+26+21+23+23+23+20+24+23+25+27}{17} = \frac{361}{17} = 21.23$$

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

$$M_{p11} = \frac{11+25+19+22+18+19+26+21+23+23+23+26+20+27}{14} = \frac{303}{14} = 21.64$$

$$\text{Item 12 } M_{p12} = \frac{\text{the total of students score that true item answer}}{n12}$$

$$M_{p12} = \frac{25+22+18+26+21+23+26+21+20+23+25+27}{12} = \frac{277}{12} = 23.08$$

$$\begin{aligned} \text{Item 13 } M_{p13} &= \frac{\text{the total of students score that true item answer}}{n13} \\ M_{p13} &= \frac{15+11+19+22+19+26+21+23+23+18+23+26+20+24+23+25+27}{17} \\ &= \frac{365}{17} = 21.47 \end{aligned}$$

$$\begin{aligned} \text{Item 14 } M_{p14} &= \frac{\text{the total of students score that true item answer}}{n14} \\ M_{p14} &= \frac{15+25+19+22+18+19+19+21+18+23+26+21+24+25+27}{15} \\ &= \frac{322}{15} = 21.46 \end{aligned}$$

$$\begin{aligned} \text{Item 15 } M_{p15} &= \frac{\text{the total of students score that true item answer}}{n15} \\ M_{p15} &= \frac{11+19+19+19+26+21+23+23+9+18+23+26+21+20+24+23+25+27}{18} \\ &= \frac{377}{18} = 20.94 \end{aligned}$$

$$\begin{aligned} \text{Item 16 } M_{p16} &= \frac{\text{the total of students score that true item answer}}{n16} \\ M_{p16} &= \frac{15+25+19+22+18+19+19+21+23+23+18+23+26+20+24+23+27}{17} \\ &= \frac{365}{17} = 21.47 \end{aligned}$$

$$\begin{aligned} \text{Item 17 } M_{p17} &= \frac{\text{the total of students score that true item answer}}{n17} \\ M_{p17} &= \frac{25+19+18+19+26+21+23+23+9+18+23+26+21+20+24+23+25}{17} \\ &= \frac{363}{17} = 21.35 \end{aligned}$$

$$\begin{aligned} \text{Item 18 } M_{p18} &= \frac{\text{the total of students score that true item answer}}{n18} \\ M_{p18} &= \frac{15+25+22+18+2+19+26+21+23+9+18+23+21+20+24+23+25+27}{18} \\ &= \frac{361}{18} = 20.05 \end{aligned}$$

$$\text{Item 19 } M_{p19} = \frac{\text{the total of students score that true item answer}}{n19}$$

$$M_{p19} = \frac{11+25+19+22+18+8+19+19+26+21+23+23+9+18+23+26+20+24}{21} = \frac{429}{21} = 20.42$$

Item 20 $M_{p20} = \frac{\text{the total of students score that true item answer}}{n20}$

$$M_{p20} = \frac{15+11+25+19+22+8+19+19+26+21+23+23+18+23+26+21+24+23+25+27}{20} = \frac{418}{20} = 20.90$$

Item 21 $M_{p21} = \frac{\text{the total of students score that true item answer}}{n21}$

$$M_{p21} = \frac{11+25+22+19+26+23+23+18+26+20+23+25+27}{13} = \frac{288}{13} = 22.15$$

Item 22 $M_{p22} = \frac{\text{the total of students score that true item answer}}{n22}$

$$M_{p22} = \frac{15+19+19+19+26+23+18+26+21+20+24+23+25+27}{14} = \frac{305}{14} = 21.75$$

Item 23 $M_{p23} = \frac{\text{the total of students score that true item answer}}{n23}$

$$M_{p23} = \frac{25+18+23+23+18+23+26+21+20+24+23+25+27}{13} = \frac{296}{13} = 22.76$$

Item 24 $M_{p24} = \frac{\text{the total of students score that true item answer}}{n24}$

$$M_{p24} = \frac{15+25+22+18+8+19+19+26+21+23+23+9+18+23+26+21+20+24+23}{21} = \frac{435}{21} = 20.71$$

Item 25 $M_{p25} = \frac{\text{the total of students score that true item answer}}{n25}$

$$M_{p25} = \frac{11+25+19+22+18+19+19+26+26+21+20+25}{12} = \frac{251}{12} = 20.91$$

Item 26 $M_{p26} = \frac{\text{the total of students score that true item answer}}{n26}$

$$M_{p26} = \frac{25+22+18+19+26+21+23+9+13+26+21+24+23}{16} = \frac{332}{16} = 20.75$$

$$\text{Item 27 } M_{p27} = \frac{\text{the total of students score that true item answer}}{n27}$$

$$M_{p27} = \frac{15+11+19+22+26+21+23+23+18+23+26+21+20+24+23+25+27}{17} \\ = \frac{367}{17} = 21.58$$

$$\text{Item 28 } M_{p28} = \frac{\text{the total of students score that true item answer}}{n28}$$

$$M_{p28} = \frac{15+25+19+22+18+19+19+21+18+23+26+21+24+25+27}{15} \\ = \frac{322}{15} = 21.46$$

$$\text{Item 29 } M_{p29} = \frac{\text{the total of students score that true item answer}}{n29}$$

$$M_{p29} = \frac{25+19+22+19+26+21+23+9+23+26+24+25+27}{13} = \frac{283}{13} = 22.23$$

$$\text{Item 30 } M_{p30} = \frac{\text{the total of students score that true item answer}}{n30}$$

$$M_{p30} = \frac{15+25+19+22+18+8+19+19+26+21+23+23+9+23+26+21+20+24}{21} \\ = \frac{436}{21} = 20.76$$

8. Calculation of the formulation $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$\text{Item 1 } r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{20.71 - 19.45}{6.24} \sqrt{\frac{0.583}{0.417}}$$

$$r_{pbi} = \frac{1.17}{6.24} \sqrt{1.4}$$

$$r_{pbi} = 0.187 \times 1.278 = 0.239$$

$$\text{Item 2 } r_{pbi} = \frac{22.93 - 19.45}{6.24} \sqrt{\frac{0.625}{0.375}}$$

$$r_{\text{pbi}} = \frac{3.48}{6.24} \sqrt{1.667}$$

$$r_{\text{pbi}} = 0.557 \times 1.294 = 0.721$$

$$\text{Item 3} = r_{\text{pbi}} = \frac{21.87 - 19.45}{6.24} \sqrt{\frac{0.667}{0.333}}$$

$$r_{\text{pbi}} = \frac{2.42}{6.24} \sqrt{2}$$

$$r_{\text{pbi}} = 0.387 \times 1.421 = 0.550$$

$$\text{Item 4} = r_{\text{pbi}} = \frac{20.76 - 19.45}{6.24} \sqrt{\frac{0.542}{0.458}}$$

$$r_{\text{pbi}} = \frac{1.31}{6.24} \sqrt{1.182}$$

$$r_{\text{pbi}} = 0.209 \times 1.095 = 0.229$$

$$\text{Item 5} = r_{\text{pbi}} = \frac{21.00 - 19.45}{6.24} \sqrt{\frac{0.75}{0.25}}$$

$$r_{\text{pbi}} = \frac{1.55}{6.24} \sqrt{3}$$

$$r_{\text{pbi}} = 0.248 \times 1.729 = 0.429$$

$$\text{Item 6} = r_{\text{pbi}} = \frac{20.08 - 19.45}{6.24} \sqrt{\frac{0.5}{0.5}}$$

$$r_{\text{pbi}} = \frac{0.63}{6.24} \sqrt{1}$$

$$r_{\text{pbi}} = 0.101 \times 1 = 0.101$$

$$\text{Item 7} = r_{\text{pbi}} = \frac{20.81 - 19.45}{6.24} \sqrt{\frac{0.667}{0.333}}$$

$$r_{\text{pbi}} = \frac{1.36}{6.24} \sqrt{2}$$

$$r_{\text{pbi}} = 0.217 \times 2.926 = 0.635$$

$$\text{Item 8} = r_{\text{pbi}} = \frac{22.25 - 19.45}{6.24} \sqrt{\frac{0.5}{0.5}}$$

$$r_{\text{pbi}} = \frac{2.8}{6.24} \sqrt{1}$$

$$r_{\text{pbi}} = 0.449 \times 1 = 0.449$$

$$\text{Item 9} = r_{\text{pbi}} = \frac{21.71 - 19.45}{6.24} \sqrt{\frac{0.46}{0.54}}$$

$$r_{\text{pbi}} = \frac{2.26}{6.24} \sqrt{0.846}$$

$$r_{\text{pbi}} = 0.362 \times 1.596 = 0.578$$

$$\text{Item 10} = r_{\text{pbi}} = \frac{21.23 - 19.45}{6.24} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{1.78}{6.24} \sqrt{2.429}$$

$$r_{\text{pbi}} = 0.285 \times 1.561 = 0.445$$

$$\text{Item 11} = r_{\text{pbi}} = \frac{21.64 - 19.45}{6.24} \sqrt{\frac{0.58}{0.42}}$$

$$r_{\text{pbi}} = \frac{2.19}{6.24} \sqrt{1.4}$$

$$r_{\text{pbi}} = 0.350 \times 1.188 = 0.416$$

$$\text{Item 12} = r_{\text{pbi}} = \frac{23.08 - 19.45}{6.24} \sqrt{\frac{0.5}{0.5}}$$

$$r_{\text{pbi}} = \frac{3.63}{6.24} \sqrt{1}$$

$$r_{\text{pbi}} = 0.583 \times 1 = 0.583$$

$$\text{Item 13} = r_{\text{pbi}} = \frac{21.47 - 19.45}{6.24} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{2.02}{6.24} \sqrt{2.429}$$

$$r_{\text{pbi}} = 0.323 \times 1.560 = 0.504$$

$$\text{Item 14} = r_{\text{pbi}} = \frac{21.46 - 19.45}{6.24} \sqrt{\frac{0.625}{0.375}}$$

$$r_{\text{pbi}} = \frac{2.01}{6.24} \sqrt{1.667}$$

$$r_{\text{pbi}} = 0.322 \times 1.295 = 0.417$$

$$\text{Item 15} = r_{\text{pbi}} = \frac{20.94 - 19.45}{6.24} \sqrt{\frac{0.75}{0.25}}$$

$$r_{\text{pbi}} = \frac{1.49}{6.24} \sqrt{3}$$

$$r_{\text{pbi}} = 0.238 \times 1.739 = 0.414$$

$$\text{Item 16} = r_{\text{pbi}} = \frac{21.47 - 19.45}{6.24} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{2.02}{6.24} \sqrt{2.429}$$

$$r_{\text{pbi}} = 0.323 \times 1.560 = 0.504$$

$$\text{Item 17} = r_{\text{pbi}} = \frac{21.35 - 19.45}{6.24} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{1.9}{6.24} \sqrt{2.429}$$

$$r_{\text{pbi}} = 0.304 \times 1.562 = 0.475$$

$$\text{Item 18} = r_{\text{pbi}} = \frac{20.05 - 19.45}{6.24} \sqrt{\frac{0.75}{0.25}}$$

$$r_{\text{pbi}} = \frac{0.6}{6.24} \sqrt{3}$$

$$r_{\text{pbi}} = 0.096 \times 1.732 = 0.166$$

$$\text{Item 19} = r_{\text{pbi}} = \frac{20.42 - 19.45}{6.24} \sqrt{\frac{0.875}{0.125}}$$

$$r_{\text{pbi}} = \frac{0.97}{6.24} \sqrt{7}$$

$$r_{\text{pbi}} = 0.155 \times 2.664 = 0.413$$

$$\text{Item 20} = r_{\text{pbi}} = \frac{20.90 - 19.45}{6.24} \sqrt{\frac{0.83}{0.17}}$$

$$r_{\text{pbi}} = \frac{1.45}{6.24} \sqrt{5}$$

$$r_{\text{pbi}} = 0.232 \times 2.232 = 0.518$$

$$\text{Item 21} = r_{\text{pbi}} = \frac{22.15 - 19.45}{6.24} \sqrt{\frac{0.54}{0.46}}$$

$$r_{\text{pbi}} = \frac{2.7}{6.24} \sqrt{1.182}$$

$$r_{\text{pbi}} = 0.432 \times 1.090 = 0.471$$

$$\text{Item 22} = r_{\text{pbi}} = \frac{21.75 - 19.45}{6.24} \sqrt{\frac{0.58}{0.42}}$$

$$r_{\text{pbi}} = \frac{2.3}{6.24} \sqrt{1.4}$$

$$r_{\text{pbi}} = 0.368 \times 1.203 = 0.443$$

$$\text{Item 23} = r_{\text{pbi}} = \frac{22.76 - 19.45}{6.24} \sqrt{\frac{0.54}{0.46}}$$

$$r_{\text{pbi}} = \frac{3.31}{6.24} \sqrt{1.182}$$

$$r_{\text{pbi}} = 0.530 \times 1.092 = 0.579$$

$$\text{Item 24} = r_{\text{pbi}} = \frac{20.71 - 19.45}{6.24} \sqrt{\frac{0.875}{0.125}}$$

$$r_{\text{pbi}} = \frac{1.17}{6.24} \sqrt{7}$$

$$r_{\text{pbi}} = 0.187 \times 2.855 = 0.534$$

$$\text{Item 25} = r_{\text{pbi}} = \frac{20.90 - 19.45}{6.24} \sqrt{\frac{0.5}{0.5}}$$

$$r_{\text{pbi}} = \frac{1.45}{6.24} \sqrt{1}$$

$$r_{\text{pbi}} = 0.232 \times 1.012 = 0.235$$

$$\text{Item 26} = r_{\text{pbi}} = \frac{20.75 - 19.45}{6.24} \sqrt{\frac{0.625}{0.375}}$$

$$r_{\text{pbi}} = \frac{1.3}{6.24} \sqrt{1.667}$$

$$r_{\text{pbi}} = 0.208 \times 2.707 = 0.555$$

$$\text{Item 27} = r_{\text{pbi}} = \frac{21.58 - 19.45}{6.24} \sqrt{\frac{0.71}{0.29}}$$

$$r_{\text{pbi}} = \frac{2.13}{6.24} \sqrt{2.429}$$

$$r_{\text{pbi}} = 0.341 \times 1.562 = 0.534$$

$$\text{Item 28} = r_{\text{pbi}} = \frac{21.46 - 19.45}{6.24} \sqrt{\frac{0.625}{0.375}}$$

$$r_{\text{pbi}} = \frac{2.01}{6.24} \sqrt{1.667}$$

$$r_{\text{pbi}} = 0.322 \times 1.295 = 0.417$$

$$\text{Item 29} = r_{\text{pbi}} = \frac{22.23 - 19.45}{6.24} \sqrt{\frac{0.54}{0.46}}$$

$$r_{\text{pbi}} = \frac{2.78}{6.24} \sqrt{1.182}$$

$$r_{\text{pbi}} = 0.445 \times 1.089 = 0.485$$

$$\text{Item 30} = r_{\text{pbi}} = \frac{20.76 - 19.45}{6.24} \sqrt{\frac{0.875}{0.125}}$$

$$r_{\text{pbi}} = \frac{1.31}{6.24} \sqrt{7}$$

$$r_{\text{pbi}} = 0.209 \times 2.655 = 0.555$$

APPENDIX 12

Reliability of Pre-Test

No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	0	1	1	1	1	0	1	0	0	1	0	1	1	0	1	0	1	0	1
2	0	0	0	0	0	1	1	1	1	0	0	1	0	0	1	0	0	0	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
4	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
5	1	0	1	0	1	0	1	1	0	1	1	1	1	1	0	1	0	1	1	1
6	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	1	1	1	0
7	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0
8	1	0	0	1	1	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1
9	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	1	1	0	1	1
10	0	0	1	1	1	0	1	1	1	1	1	0	1	0	1	1	0	1	1	1
11	1	0	1	0	1	1	0	1	1	0	1	1	1	0	1	0	1	0	1	1
12	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1
13	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
14	0	0	0	1	1	1	0	1	0	1	1	0	1	0	1	1	1	1	1	1
15	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	1	1	1	1
16	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1
17	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1
18	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	0	1	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	0
21	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
22	1	1	1	0	1	0	0	1	1	1	0	0	0	1	1	1	1	0	1	1
23	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	0	1	0	1	1
24	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1
N=24	14	10	18	14	22	13	15	22	19	18	17	13	19	14	17	18	17	13	22	21
P	0.583	0.417	0.75	0.583	0.916 7	0.542	0.625	0.917	0.79	0.75	0.71	0.54	0.79	0.58	0.71	0.75	0.71	0.542	0.917	0.875
Q	0.417	0.583	0.25	0.417	0.083 3	0.458	0.375	0.083	0.21	0.25	0.29	0.46	0.21	0.42	0.29	0.25	0.29	0.458	0.083	0.125
P.Q	0.243	0.243	0.188	0.243	0.076	0.248	0.234	0.076	0.165	0.188	0.207	0.248	0.165	0.243	0.207	0.188	0.207	0.248	0.076	0.109

No	21	22	23	24	25	26	27	28	29	30	Xt	Xt ²
1	0	1	0	1	0	0	1	1	0	1	17	289
2	1	0	0	0	1	0	1	0	0	0	11	121
3	1	0	1	1	1	1	0	1	1	1	27	729
4	0	1	0	0	1	0	1	1	1	1	23	529
5	1	0	0	1	1	1	1	1	1	1	22	484
6	0	0	1	1	1	1	0	1	0	1	13	169
7	0	0	0	0	0	0	0	0	0	0	4	16
8	0	0	0	1	0	0	0	0	0	1	11	121
9	1	1	0	1	1	0	0	1	0	1	15	225
10	0	1	0	1	1	1	0	1	1	1	21	441
11	1	1	0	1	1	1	1	0	1	1	21	441
12	0	0	0	1	0	1	1	1	1	1	22	484
13	1	1	1	1	0	0	1	0	0	1	24	576
14	0	0	1	1	0	1	1	0	1	1	19	361
15	1	0	0	1	0	1	0	0	1	1	21	441
16	1	1	1	1	0	0	1	1	0	0	23	529
17	1	0	1	1	0	1	1	1	1	1	24	576
18	1	1	1	1	1	1	1	1	1	1	27	729
19	1	1	1	1	1	1	1	1	0	1	29	841
20	1	1	1	1	1	0	1	0	0	1	21	441
21	0	1	1	1	0	1	1	1	1	1	26	676
22	1	1	1	1	0	1	1	0	0	1	20	400
23	1	1	1	1	1	1	1	1	1	1	26	676
24	1	1	1	1	0	1	1	1	1	1	25	625
N= 24	15	14	13	21	12	15	17	15	13	21	$\sum xt = 492$	$\sum x t^2 = 10920$
P	0.625	0.58	0.54	0.875	0.5	0.625	0.71	0.625	0.54	0.875		
Q	0.375	0.42	0.46	0.125	0.5	0.375	0.29	0.375	0.46	0.125		
P.Q	0.234	0.243	0.248	0.109	0.250	0.234	0.207	0.234	0.248	0.109	$\sum pq = 5.920$	

APPENDIX 13

Reliability of Post-Test

No	1	2	3	4	5	6	7	8	9	1	1	1	13	1	1	1	1	1	1	2
1	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	1	0	1	0	1
2	0	0	0	0	1	1	1	0	0	0	1	0	1	0	1	0	0	0	1	1
3	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	1	1
4	1	0	1	0	1	1	1	0	1	0	0	1	0	1	1	1	1	1	0	1
5	1	0	0	1	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	1
6	0	0	1	1	1	0	0	0	1	1	1	1	0	1	0	1	1	1	1	0
7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
9	1	0	1	0	1	0	1	0	0	1	1	0	1	1	1	1	1	1	0	1
10	0	1	1	1	1	0	0	1	0	1	0	0	0	1	1	1	1	0	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1
12	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	1
14	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1
15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0
16	0	1	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1
17	0	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1
18	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1
19	0	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1	0	1	1	0
20	0	1	1	0	0	0	1	0	1	1	1	1	1	1	0	1	1	1	1	0
21	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1
22	1	1	1	0	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1
23	1	1	1	1	0	0	1	0	1	1	0	1	1	1	1	1	0	1	1	1
24	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
N=24	14	15	16	13	18	12	16	12	11	17	14	12	17	15	18	17	17	18	21	20
P	0.583	0.625	0.667	0.542	0.75	0.5	0.667	0.5	0.46	0.71	0.58	0.5	0.71	0.625	0.75	0.71	0.71	0.75	0.875	0.83
Q	0.417	0.375	0.333	0.458	0.25	0.5	0.333	0.5	0.54	0.29	0.42	0.5	0.29	0.375	0.25	0.29	0.29	0.25	0.125	0.17
P.Q	0.243	0.234	0.222	0.248	0.188	0.250	0.222	0.250	0.248	0.207	0.243	0.250	0.207	0.234	0.188	0.207	0.207	0.188	0.109	0.139

No	21	22	23	24	25	26	27	28	29	30	Xt	Xt ²
1	0	1	0	1	0	0	1	1	0	1	15	225
2	1	0	0	0	1	0	1	0	0	0	11	121
3	1	0	1	1	1	1	0	1	1	1	25	625
4	0	1	0	0	1	0	1	1	1	1	19	361
5	1	0	0	1	1	1	1	1	1	1	22	484
6	0	0	1	1	1	1	0	1	0	1	18	324
7	0	0	0	0	0	0	0	0	0	0	2	4
8	0	0	0	1	0	0	0	0	0	1	8	64
9	1	1	0	1	1	0	0	1	0	1	19	361
10	0	1	0	1	1	1	0	1	1	1	19	361
11	1	1	0	1	1	1	1	0	1	1	26	676
12	0	0	0	1	0	1	1	1	1	1	21	441
13	1	1	1	1	0	0	1	0	0	1	23	529
14	1	0	1	1	0	1	1	0	1	1	23	529
15	0	0	0	1	0	1	0	0	1	1	9	81
16	1	1	1	1	0	0	1	1	0	0	18	324
17	0	0	1	1	0	1	1	1	1	1	23	529
18	1	1	1	1	1	1	1	1	1	1	26	676
19	0	1	1	1	1	1	1	1	0	1	21	441
20	1	1	1	1	1	0	1	0	0	1	20	400
21	0	1	1	1	0	1	1	1	1	1	24	576
22	1	1	1	1	0	1	1	0	0	1	23	529
23	1	1	1	1	1	1	1	1	1	1	25	625
24	1	1	1	1	0	1	1	1	1	1	27	729
N= 24	13	14	13	21	12	15	17	15	13	21	$\sum xt = 467$	$\sum xt^2 = 10015$
P	0.54	0.58	0.54	0.875	0.5	0.625	0.71	0.625	0.54	0.875		
Q	0.46	0.42	0.46	0.125	0.5	0.375	0.29	0.375	0.46	0.125		
P.Q	0.248	0.243	0.248	0.109	0.250	0.234	0.207	0.234	0.248	0.109		

APPENDIX 14

Reliability of Pre-Test

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(\frac{SB^2 - \sum pq}{SB^2} \right)$$

$$N = 24$$

$$\sum Xt = 492$$

$$\sum Xt^2 = 10920$$

$$\sum pq = 5.89$$

$$\begin{aligned} S_t^2 &= \sum Xt^2 - \left(\frac{\sum Xt}{N} \right)^2 \\ &= 10920 - \left(\frac{492}{24} \right)^2 = 10920 - (20.5)^2 = 10920 - 420.25 = 10499.75 \end{aligned}$$

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(\frac{SB^2 - \sum pq}{SB^2} \right)$$

$$r_{11} = \left(\frac{24}{(24-1)} \right) \left(\frac{10499.75 - 5.89}{10499.75} \right)$$

$$= (1.043) (0.999)$$

$$= 1.041$$

$$= 1.041 \quad (r_{11} = 1.041 > r_{\text{tabel}} = 0.404) \text{ reliable}$$

Reliability of Post-Test

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(\frac{SB^2 - \sum pq}{SB^2} \right)$$

$$N = 24$$

$$\sum Xt = 467$$

$$\sum Xt^2 = 10015$$

$$\sum pq = 6.41$$

$$\begin{aligned} S_t^2 &= \sum Xt^2 - \left(\frac{\sum Xt}{N} \right)^2 \\ &= 10015 - \left(\frac{467}{24} \right)^2 = 10015 - (19.46)^2 = 10015 - 376.69 = 9636.31 \end{aligned}$$

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(\frac{SB^2 - \sum pq}{SB^2} \right)$$

$$r_{11} = \left(\frac{24}{(24-1)} \right) \left(\frac{9363.31 - 6.41}{9363.31} \right)$$

$$= (1.043) (0.999)$$

$$= 1.041$$

$$= 1.041 \text{ (} r_{11} = 1.041 > r_{\text{tabel}} = 0.404 \text{) reliable}$$

Appendix 15

Score of Experimental Class and Control Class on Pre-Test

1. Score of Experimental Class Pre-Test before using Speed Reading Strategy

No	The Initial Name of Students (n)	Pre-Test
23.	AA	72
24.	APH	60
25.	AHMH	52
26.	BHS	56
27.	BRH	36
28.	HSS	56
29.	LS	64
30.	MSSH	40
31.	MRH	64
32.	NLSH	56
33.	PJ	60
34.	RMH	52
35.	RM	72
36.	SH	44
37.	SA	64
38.	SK	48
39.	STA	36
40.	SNA	56
41.	SRO	36
42.	SRRS	52
43.	TPH	68
44.	UK	52
TOTAL		1196

2. Score of Control Class Pre-Test

No	The Initial Name of Students (n)	Pre-Test
1.	AKH	60
2.	AAH	32
3.	AS	56
4.	ARD	40
5.	ASH	36
6.	AUS	72
7.	AND	56
8.	AT	48
9.	DAH	52
10.	JJD	60
11.	JS	64
12.	MD	56
13.	MS	76
14.	NKD	64
15.	OPH	60
16.	RHH	48
17.	RN	60
18.	RAN	36
19.	RY	72
20.	SNS	40
21.	SOAD	68
22.	SWH	52
TOTAL		1208

Appendix 16

Score of Experimental Class and Control Class on Post-Test

3. Score of Experimental Class Post-Test after using Speed Reading Strategy

No	The Initial Name of Students (n)	Post-Test
45.	AA	76
46.	APH	80
47.	AHMH	76
48.	BHS	80
49.	BRH	76
50.	HSS	88
51.	LS	84
52.	MSSH	76
53.	MRH	80
54.	NLSH	84
55.	PJ	92
56.	RMH	72
57.	RM	88
58.	SH	80
59.	SA	76
60.	SK	76
61.	STA	76
62.	SNA	80
63.	SRO	72
64.	SRRS	80
65.	TPH	84
66.	UK	80
TOTAL		1756

4. Score of Control Class Post-Test

No	The Initial Name of Students (n)	Post-Test
1.	AKH	72
2.	AAH	64
3.	AS	76
4.	ARD	72
5.	ASH	68
6.	AUS	84
7.	AND	68
8.	AT	72
9.	DAH	76
10.	JJD	72
11.	JS	68
12.	MD	68
13.	MS	88
14.	NKD	64
15.	OPH	80
16.	RHH	68
17.	RN	72
18.	RAN	60
19.	RY	84
20.	SNS	68
21.	SOAD	80
22.	SWH	68
TOTAL		1592

Appendix 17

RESULT OF NORMALITY TEST IN PRE TEST

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

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

36	36	36	40	44	48	52	52	52	52	56
56	56	56	60	60	64	64	64	68	72	72

2. High = 72

Low = 36

Range = High – Low

= 72- 36

= 36

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

= $1 + 3,3 \log (22)$

= $1 + 3,3 (1.342)$

= $1 + 4.428$

= 5.428

= 5

4. Length of Classes = $\frac{\text{range}}{\text{totalofclass}} = \frac{36}{5} = 7.2 = 7$

5. Mean

Interval Class	f_i	x_i	$f_i x_i$	$x - \bar{x}$	$(x - \bar{x})^2$	$f_i (x - \bar{x})^2$
36 – 42	4	39	156	-15.9	252.81	1011.2
43 – 49	2	46	92	-8.9	79.21	158.42
50 – 56	8	53	424	-1.9	3.61	28.88
57 – 63	2	60	120	5.1	26.01	52.02
64 – 70	4	67	268	12.1	146.41	585.64

71 – 77	2	74	148	19.1	364.81	729.62
$i = 7$	22			9.6	872.85	2565.78

$$\bar{x} = \frac{\sum fi xi}{\sum fi} = \frac{1208}{22} = 54.9$$

$$SD_t = \sqrt{\frac{\sum fi (x - \bar{x})^2}{(n-1)}} = \sqrt{\frac{2565.78}{22-1}} = \sqrt{122.18} = 11.05$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$
71 – 77	77.5	2.04	0.4793				
				0.0586	1.29	2	0.55
64 – 70	70.5	1.41	0.4207				
				0.1413	3.10	4	0.30
57 – 63	63.5	0.77	0.2794				
				0.2237	4.92	2	-0.60
50 – 56	56.5	0.14	0.0557				
				0.2599	5.71	8	0.40
43 – 49	49.5	-0.48	0.31561				
				0.1842	4.05	2	-0.50
36 – 42	42.5	-1.12	0.13136				
				0.0913	2.00	4	1
	35.5	-1.75	0.04006				
						X^2	1.15

Based on the table above, the reseracher found that $x^2_{count} = 1.15$ while

$x^2_{table} = 9.488$ cause $x^2_{count} < x^2_{table}$ ($1.15 < 9.488$) with degree of freedom (dk) = 5–1

= 4 and significant level $\alpha = 5\%$. So distribution of VIII-1class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	36 – 42	4	4
2	43 – 49	2	6
3	50 – 56	8	14
4	57 – 63	2	16
5	64 – 70	4	20
6	71 – 77	2	22

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

$$Bb = 49.5$$

$$F = 6$$

$$fm = 8$$

$$i = 7$$

$$n = 22$$

$$1/2n = 11$$

So :

$$\begin{aligned}
 Me &= Bb + i \left(\frac{n/2 - F}{fm} \right) \\
 &= 49.5 + 7 \left(\frac{11 - 6}{8} \right) \\
 &= 49.5 + 7 \left(\frac{5}{8} \right) \\
 &= 49.5 + \frac{35}{8} \\
 &= 49.5 + 4.4 \\
 &= 53.9
 \end{aligned}$$

7. Modus

No	Interval	F	Fk
1	36 – 42	4	4
2	43 – 49	2	6

3	50 – 56	8	14
4	57 – 63	2	16
5	64 – 70	4	20
6	71 – 77	2	22

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

$$L = 49.5$$

$$d_1 = 8 - 2 = 6$$

$$d_2 = 8 - 2 = 6$$

$$i = 7$$

So,

$$\begin{aligned} M_o &= 49.5 + \frac{6}{6+6} 7 \\ &= 49.5 + 0.5 (7) \\ &= 49.5 + 3.5 \\ &= 53 \end{aligned}$$

RESULT OF NORMALITY TEST IN PRE-TEST

RESULT OF THE NORMALITY TEST OF VIII-2 IN PRE-TEST

1. The score of VIII-2 class in pre test from low score to high score:

32	36	36	40	40	48	48	52	52	56	56
56	60	60	60	60	64	64	68	72	72	76

2. High = 76
Low = 32
Range = High – Low
= 76 – 32
= 44

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

$$\begin{aligned}
&= 1 + 3,3 \log (22) \\
&= 1 + 3,3 (1.342) \\
&= 1 + 4.428 \\
&= 5.428 \\
&= 5
\end{aligned}$$

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

5. Mean

Interval Class	f_i	x_i	$f_i x_i$	$x - \bar{x}$	$(x - \bar{x})^2$	$f_i (x - \bar{x})^2$
32 – 40	5	36	180	-18.8	353.44	1767.2
41 – 49	2	45	90	-9.8	96.04	192.08
50 – 58	5	54	270	-0.8	0.64	3.2
59 – 67	6	63	378	8.2	67.24	403.44
68 – 76	4	72	288	17.2	295.84	1183.36
$i = 9$	22		1206			3549.28

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i} = \frac{1206}{22} = 54.8$$

$$SD_t = \sqrt{\frac{\sum f_i (x - \bar{x})^2}{(n-1)}} = \sqrt{\frac{3549.28}{22-1}} = \sqrt{169.01} = 13.00$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$
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68 – 76	76.5	1.66	0.4515	0.1175	2.58	4	0.55	
59 – 67	67.5	0.97	0.3340	0.2237	4.92	6	0.22	
50 – 58	58.5	0.28	0.1103	-0.2342	-5.15	5	-1.2	
41 – 49	49.5	-0.40	0.34458	0.1883	4.14	2	-0.51	
32 – 40	40.5	-1.1	0.15625	0.1195	2.62	5	0.90	
	31.5	-1.79	0.03673					
							X^2	-0.04

Based on the table above, the reseracher found that $x^2_{\text{count}} = -0.04$ while $x^2_{\text{table}} = 9.488$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($-0.04 < 9.488$) with degree of freedom (dk) = $5 - 1 = 4$ and significant level $\alpha = 5\%$. So distribution of VIII-2 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	32 – 40	5	5
2	41 – 49	2	7
3	50 – 58	5	12
4	59 – 67	6	18
5	68 – 76	4	22

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

$$Bb = 49.5$$

$$F = 7$$

$$fm = 5$$

$$i = 9$$

$$n = 22$$

$$1/2n = 11$$

So :

$$\begin{aligned} \text{Me} &= \text{Bb} + i \left(\frac{n/2 - F}{fm} \right) \\ &= 49.5 + 9 \left(\frac{11-7}{5} \right) \\ &= 49.5 + 9 \left(\frac{4}{5} \right) \\ &= 49.5 + \frac{36}{5} \\ &= 49.5 + 7.2 \\ &= 56.7 \end{aligned}$$

7. Modus

No	Interval	F	Fk
1	32 – 40	5	5
2	41 – 49	2	7
3	50 – 58	5	12
4	59 – 67	6	18
5	68 – 76	4	22

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

$$L = 58.5$$

$$d_1 = 6 - 5 = 1$$

$$d_2 = 6 - 4 = 2$$

$$i = 9$$

So,

$$\begin{aligned} M_o &= 58.5 + \frac{1}{1+2} 9 \\ &= 58.5 + 0.33(9) \\ &= 58.5 + 3 \\ &= 61.5 \end{aligned}$$

Appendix 18

RESULT OF NORMALITY TEST IN POST TEST

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

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

72	72	76	76	76	76	76	76	76	80	80
80	80	80	80	80	84	84	84	88	88	92

9. High = 92

Low = 72

Range = High – Low

$$= 92 - 72$$

$$= 20$$

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

$$= 1 + 3,3 \log (22)$$

$$= 1 + 3,3 (1.342)$$

$$= 1 + 4.428$$

$$= 5.428$$

$$= 5$$

11. Length of Classes = $\frac{\text{range}}{\text{totalofclass}} = \frac{20}{5} = 4$

12. Mean

Interval Class	f_i	x_i	$f_i x_i$	$x - \bar{x}$	$(x - \bar{x})^2$	$f_i (x - \bar{x})^2$
72 – 75	2	73.5	147	-5.8	33.64	67.28
76 – 79	7	77.5	542.5	-3.8	14.44	101.08
80 – 83	7	81.5	570.5	0.2	0.04	0.28
84 – 87	3	85.5	256.5	4.2	17.64	52.92
88 – 91	2	89.5	179	8.2	67.24	134.48

92 – 95	1	93.5	93.5	12.2	148.84	148.84
$i = 4$	22		1789			504.88

$$\bar{x} = \frac{\sum fi xi}{\sum fi} = \frac{1789}{22} = 81.3$$

$$SD_t = \sqrt{\frac{\sum fi (x - \bar{x})^2}{(n-1)}} = \sqrt{\frac{504.88}{22-1}} = \sqrt{24.04} = 4.90$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$	
92–95	95.5	2.89	0.4981					
88 – 91	91.5	2.08	0.4812	0.0169	0.37	1	1.70	
84 – 87	87.5	1.26	0.3962	0.085	1.87	2	0.07	
80 – 83	83.5	0.44	0.1700	0.2262	4.97	3	-0.4	
76 – 79	79.5	-0.36	0.35942	-0.1894	-4.16	7	-2.68	
72 – 75	75.5	-1.18	0.11900	0.2404	5.28	7	0.32	
	71.5	-2	0.02275	0.0962	2.11	2	-0.05	
X²								-1.04

Based on the table above, the reseracher found that $x^2_{count} = -1.04$ while $x^2_{table} = 9.488$ cause $x^2_{count} < x^2_{table}$ ($-1.04 < 9.488$) with degree of freedom (dk) = 5–1 = 4 and significant level $\alpha = 5\%$. So distribution of VIII-1 class (post-test) is normal.

13. Median

No	Interval	F	Fk
----	----------	---	----

1	72 – 75	2	2
2	76 – 79	7	9
3	80 – 83	7	16
4	84 – 87	3	19
5	88 – 91	2	21
6	92 – 95	1	22

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

$$Bb = 79.5$$

$$F = 9$$

$$fm = 7$$

$$i = 4$$

$$n = 22$$

$$1/2n = 11$$

So :

$$\begin{aligned}
 Me &= Bb + i \left(\frac{n/2 - F}{fm} \right) \\
 &= 79.5 + 4 \left(\frac{11 - 9}{7} \right) \\
 &= 79.5 + 4 \left(\frac{2}{7} \right) \\
 &= 79.5 + \left(\frac{8}{7} \right) \\
 &= 79.5 + 1.14 \\
 &= 80.64
 \end{aligned}$$

14. Modus

No	Interval	F	Fk
1	72 – 75	2	2
2	76 – 79	7	9
3	80 – 83	7	16
4	84 – 87	3	19

5	88 – 91	2	21
6	92 – 95	1	22

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

$$L = 79.5$$

$$d_1 = 7 - 7 = 0$$

$$d_2 = 7 - 3 = 4$$

$$i = 4$$

So,

$$M_o = 79.5 + \frac{0}{0+4} 4$$

$$= 79.5$$

RESULT OF NORMALITY TEST IN POST-TEST

RESULT OF THE NORMALITY TEST OF VIII-2 IN POST-TEST

8. The score of VIII-2 class in post test from low score to high score:

60	64	64	68	68	68	68	68	68	68	72
72	72	72	72	76	76	80	80	84	84	88

9. High = 88

Low = 60

Range = High – Low

$$= 88 - 60$$

$$= 28$$

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

$$= 1 + 3,3 \log (22)$$

$$= 1 + 3,3 (1.342)$$

$$= 1 + 4.428$$

$$= 5.428$$

$$= 5$$

11. Length of Classes $= \frac{\text{range}}{\text{total of class}} = \frac{28}{5} = 5.6 = 6$

12. Mean

Interval Class	f_i	x_i	$f_i x_i$	$x - \bar{x}$	$(x - \bar{x})^2$	$f_i (x - \bar{x})^2$
60 – 65	3	62.5	187.5	-10.6	112.36	337.08
66 – 71	7	68.5	479.5	-4.6	21.16	148.12
72 – 77	7	74.5	521.5	1.4	1.96	13.72
78 – 83	2	80.5	161	7.4	54.76	109.52
84 – 89	3	86.5	259.5	13.4	179.56	538.68
$i = 6$	22		1609	7		1147.12

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i} = \frac{1609}{22} = 73.1$$

$$SD_t = \sqrt{\frac{\sum f_i (x - \bar{x})^2}{(n-1)}} = \sqrt{\frac{1147.12}{22-1}} = \sqrt{54.62} = 7.39$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval of Score	Real Upper Limit	Z – Score	Limit of Large of the Area	Large of area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$
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84 – 89	89.5	2.21	0.4864					
				0.0672	1.47	3	1.04	
78 – 83	83.5	1.40	0.4192					
				0.1968	4.32	2	-0.53	
72 – 77	77.5	0.59	0.2224					
				-0.1944	-4.27	7	-2.63	
66 – 71	71.5	-0.21	0.41683					
				0.2629	5.78	7	0.21	
60 – 65	65.5	-1.02	0.15386					
				0.1209	2.66	3	0.12	
	59.5	-1.84	0.03288					
							X^2	-1.79

Based on the table above, the reseracher found that $x^2_{\text{count}} = -1.79$ while $x^2_{\text{table}} = 9.488$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($-1.79 < 9.488$) with degree of freedom (dk) = $5 - 1 = 4$ and significant level $\alpha = 5\%$. So distribution of VIII-2 class (post-test) is normal.

13. Median

No	Interval	F	Fk
1	60 – 65	3	3
2	66 – 71	7	10
3	72 – 77	7	17
4	78 – 83	2	19
5	84 – 89	3	22

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

$$Bb = 71.5$$

$$F = 10$$

$$fm = 7$$

$$i = 6$$

$$n = 22$$

$$1/2n = 11$$

So :

$$\begin{aligned}
Me &= Bb + i \left(\frac{n/2 - F}{fm} \right) \\
&= 71.5 + 6 \left(\frac{11-10}{7} \right) \\
&= 71.5 + 6 \left(\frac{1}{7} \right) \\
&= 71.5 + \frac{6}{7} \\
&= 71.5 + 0.85 \\
&= 72.35
\end{aligned}$$

14. Modus

No	Interval	F	Fk
1	60 – 65	3	3
2	66 – 71	7	10
3	72 – 77	7	17
4	78 – 83	2	19
5	84 – 89	3	22

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

$$L = 71.5$$

$$d_1 = 7 - 7 = 0$$

$$d_2 = 7 - 2 = 5$$

$$i = 6$$

So,

$$\begin{aligned}
M_o &= 71.5 + \frac{0}{0+5} 6 \\
&= 71.5
\end{aligned}$$

Appendix 19

HOMOGENEITY TEST (PRE-TEST)

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

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

Hypotheses:

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

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

A. Variant of the VIII-1 class is:

NO	Xi	Xi ²
1.	36	1296
2.	36	1296
3.	36	1296
4.	40	1600
5.	44	1936
6.	48	2304
7.	52	2704
8.	52	2704
9.	52	2704
10.	52	2704
11.	56	3136
12.	56	3136
13.	56	3136
14.	56	3136
15.	60	3600

16.	60	3600
17.	64	4096
18.	64	4096
19.	64	4096
20.	68	4624
21.	72	5184
22.	72	5184
Total	1196	67568

$$n = 22$$

$$\sum xi = 1196$$

$$\sum xi^2 = 67568$$

So:

$$\begin{aligned}
 S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
 &= \frac{22(67568) - (1196)^2}{22(22-1)} \\
 &= \frac{1486496 - 1430416}{22(21)} \\
 &= \frac{56.080}{462} \\
 &= 121.38
 \end{aligned}$$

B. Variant of the VIII-2class is:

NO	Xi	Xi²
1.	32	1024
2.	36	1296
3.	36	1296
4.	40	1600
5.	40	1600
6.	48	2304
7.	48	2304
8.	52	2704
9.	52	2704
10.	56	3136

11.	56	3136
12.	56	3136
13.	60	3600
14.	60	3600
15.	60	3600
16.	60	3600
17.	64	4096
18.	64	4096
19.	68	4624
20.	72	5184
21.	72	5184
22.	76	5776
Total	1208	69600

$$n = 22$$

$$\sum xi = 1208$$

$$\sum xi^2 = 69600$$

So:

$$\begin{aligned}
 S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
 &= \frac{22(69600) - (1208)^2}{22(22-1)} \\
 &= \frac{1531200 - 1459264}{22(21)} \\
 &= \frac{71936}{462} \\
 &= 155.70
 \end{aligned}$$

The Formula was used to test hypothesis was:

1. VIII-1 and VIII-2 :

$$F = \frac{\text{TheBiggestVariant}}{\text{TheSmallestVariant}}$$

So:

$$F = \frac{155.70}{121.38}$$
$$= 1.282$$

After doing the calculation, researcher found that $F_{\text{count}} = 1.28$ with $\alpha 5\%$ and $dk = 21$ the distribution list F, researcher found that $F_{\text{table}} = 2.08$ cause $F_{\text{count}} < F_{\text{table}}$ ($1.28 < 2.08$). So, there is no difference the variant between the VIII-1 class and VIII-2 class. It means that the variant is homogenous.

Appendix 20

HOMOGENEITY TEST (POST-TEST)

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

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

Hypothesis:

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

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

A. Variant of the VIII-1 class is

NO	Xi	Xi ²
23.	72	5184
24.	72	5184
25.	76	5776
26.	76	5776
27.	76	5776
28.	76	5776

29.	76	5776
30.	76	5776
31.	76	5776
32.	80	6400
33.	80	6400
34.	80	6400
35.	80	6400
36.	80	6400
37.	80	6400
38.	80	6400
39.	84	7056
40.	84	7056
41.	84	7056
42.	88	7744
43.	88	7744
44.	92	8464
Total	1756	140720

$$n = 22$$

$$\sum xi = 1756$$

$$\sum xi^2 = 140720$$

So:

$$\begin{aligned}
 S^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
 &= \frac{22(140720) - (1756)^2}{22(22-1)} \\
 &= \frac{3095840 - 3083536}{22(21)} \\
 &= \frac{12304}{462} \\
 &= 26.63
 \end{aligned}$$

B. Variant of the VIII-2 class is:

NO	Xi	Xi ²
23.	60	3600
24.	64	4096
25.	64	4096
26.	68	4624
27.	68	4624
28.	68	4624
29.	68	4624
S^2 30.	$\frac{68 \sum xi^2 - (\sum xi)^2}{n(n-1)}$	$\frac{68(116288) - (1592)^2}{22(22-1)}$
31.	68	4624
32.	68	4624
33.	72	5184
34.	72	5184
35.	72	5184
36.	72	5184
37.	72	5184
38.	76	5776
39.	76	5776
40.	80	6400
41.	80	6400
42.	84	7056
43.	84	7056
44.	88	7744
Total	1592	116288

n

= 22

$\sum xi = 1592$

$\sum xi^2 = 116288$

So:

The

Formula was used to test hypothesis was:

2. VIII-1 and VIII-2 :

$F = \frac{\text{TheBiggestVariant}}{\text{TheSmallestVariant}}$

So:

$F = \frac{51.67}{26.63}$
 $= 1.94$

After doing the calculation, researcher found that $F_{count} = 1.94$ with α 5% and $dk = 21$ from the distribution list F, researcher found that $F_{table} = 2.08$, cause $F_{count} < F_{table}$ ($1.94 < 2.08$). So, there is no difference the variant between the VIII-1 class and VIII-2 class. It means that the variant is homogenous.

Appendix 21

T-test of the Both Averages in Pre-Test

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

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

$$Tt = \frac{54.9 - 54.8}{\sqrt{\left(\frac{(22 - 1)121.38 + (22 - 1)155.70}{22 + 22 - 2}\right)\left(\frac{1}{22} + \frac{1}{22}\right)}}$$

$$Tt = \frac{0.1}{\sqrt{\left(\frac{21(121.38) + 21(155.70)}{42}\right)\left(\frac{2}{22}\right)}}$$

$$Tt = \frac{0.1}{\sqrt{\left(\frac{2548.98 + 3269.7}{42}\right)(0.09)}}$$

$$Tt = \frac{0.1}{\sqrt{\left(\frac{5818.68}{42}\right)(0.09)}}$$

$$Tt = \frac{0.1}{\sqrt{138.54(0.09)}}$$

$$Tt = \frac{0.1}{\sqrt{12.4686}}$$

$$Tt = \frac{0.1}{3.5310}$$

$$Tt = 0.0283$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that $t_{\text{count}} = 0.0283$ with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 22 + 22 - 2 = 42$, $t_{\text{table}} = 1.6819$. So, $t_{\text{count}} < t_{\text{table}}$ ($0.0283 < 1.6819$) and H_0 is accepted, it means no difference the average between the first class as experimental class and the second class as control class in this research.

Appendix 22

T-test of the Both Averages in Post-Test

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

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

$$Tt = \frac{81.3 - 73.1}{\sqrt{\left(\frac{(22 - 1)51.67 + (22 - 1)26.63}{22 + 22 - 2}\right)\left(\frac{1}{22} + \frac{1}{22}\right)}}$$

$$Tt = \frac{8.2}{\sqrt{\left(\frac{21(51.67) + 21(26.63)}{42}\right)\left(\frac{2}{22}\right)}}$$

$$Tt = \frac{8.2}{\sqrt{\left(\frac{1085.07 + 559.23}{42}\right)(0.09)}}$$

$$Tt = \frac{8.2}{\sqrt{\left(\frac{1664.3}{42}\right)(0.09)}}$$

$$Tt = \frac{8.2}{\sqrt{39.15 (0.09)}}$$

$$Tt = \frac{8.2}{\sqrt{3.5663}}$$

$$Tt = \frac{8.2}{1.888}$$

$$Tt = 4.343$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that $t_{\text{count}} = 4.343$ with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 22 + 22 - 2 = 42$, $t_{\text{table}} = 1.6819$. So, $t_{\text{count}} > t_{\text{table}}$ ($4.343 > 1.6819$) and H_0 is accepted, it means there was the difference average between the first class as experimental class and the second class as control class in this research.

APPENDIX 23

A. Calculation of WPM = $\frac{k}{wd} \times 60$

1. $\frac{624}{300} \times 60 = 124$

2. $\frac{732}{300} \times 60 = 146$

3. $\frac{700}{300} \times 60 = 140$

4. $\frac{718}{300} \times 60 = 143$

5. $\frac{671}{300} \times 60 = 134$

6. $\frac{822}{300} \times 60 = 164$

7. $\frac{776}{300} \times 60 = 155$

8. $\frac{682}{300} \times 60 = 136$

9. $\frac{705}{300} \times 60 = 141$

10. $\frac{1021}{300} \times 60 = 204$

11. $\frac{872}{300} \times 60 = 174$

12. $\frac{718}{300} \times 60 = 143$

B. Calculation of ERR = WPM x % comprehension

1. $124 \times 76\% = 94$

2. $146 \times 80\% = 116$

3. $140 \times 76\% = 106$

4. $143 \times 80\% = 114$

5. $134 \times 76\% = 102$

6. $164 \times 88\% = 144$

7. $155 \times 84\% = 130$

8. $136 \times 76\% = 103$

9. $141 \times 80\% = 112$

10. $204 \times 84\% = 171$

11. $174 \times 92\% = 160$

12. $143 \times 72\% = 103$

$$13. \frac{963}{300} \times 60 = 192$$

$$14. \frac{700}{300} \times 60 = 140$$

$$15. \frac{822}{300} \times 60 = 164$$

$$16. \frac{600}{300} \times 60 = 120$$

$$17. \frac{726}{300} \times 60 = 145$$

$$18. \frac{624}{300} \times 60 = 124$$

$$19. \frac{911}{300} \times 60 = 182$$

$$20. \frac{671}{300} \times 60 = 134$$

$$21. \frac{845}{300} \times 60 = 169$$

$$22. \frac{575}{300} \times 60 = 115$$

$$13. 192 \times 88\% = 169$$

$$14. 140 \times 80\% = 112$$

$$15. 164 \times 76\% = 124$$

$$16. 120 \times 76\% = 91$$

$$17. 145 \times 76\% = 110$$

$$18. 124 \times 80\% = 99$$

$$19. 182 \times 72\% = 131$$

$$20. 134 \times 80\% = 107$$

$$21. 169 \times 84\% = 141$$

$$22. 115 \times 80\% = 92$$

APPENDIX 24

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 25

Z-Table

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.9	0.00005	0.00005	0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	0.00003	0.00003
-3.8	0.00007	0.00007	0.00007	0.00006	0.00006	0.00006	0.00006	0.00005	0.00005	0.00005
-3.7	0.00011	0.00010	0.00010	0.00010	0.00009	0.00009	0.00008	0.00008	0.00008	0.00008
-3.6	0.00016	0.00015	0.00015	0.00014	0.00014	0.00013	0.00013	0.00012	0.00012	0.00011
-3.5	0.00023	0.00022	0.00022	0.00021	0.00020	0.00019	0.00019	0.00018	0.00017	0.00017
-3.4	0.00034	0.00032	0.00031	0.00030	0.00029	0.00028	0.00027	0.00026	0.00025	0.00024
-3.3	0.00048	0.00047	0.00045	0.00043	0.00042	0.00040	0.00039	0.00038	0.00036	0.00035
-3.2	0.00069	0.00066	0.00064	0.00062	0.00060	0.00058	0.00056	0.00054	0.00052	0.00050
-3.1	0.00097	0.00094	0.00090	0.00087	0.00084	0.00082	0.00079	0.00076	0.00074	0.00071
-3.0	0.00135	0.00131	0.00126	0.00122	0.00118	0.00114	0.00111	0.00107	0.00104	0.00100
-2.9	0.00187	0.00181	0.00175	0.00169	0.00164	0.00159	0.00154	0.00149	0.00144	0.00139
-2.8	0.00256	0.00248	0.00240	0.00233	0.00226	0.00219	0.00212	0.00205	0.00199	0.00193
-2.7	0.00347	0.00336	0.00326	0.00317	0.00307	0.00298	0.00289	0.00280	0.00272	0.00264
-2.6	0.00466	0.00453	0.00440	0.00427	0.00415	0.00402	0.00391	0.00379	0.03680	0.00357
-2.5	0.00621	0.00604	0.00587	0.00570	0.00554	0.00539	0.00523	0.00508	0.00494	0.00480
-2.4	0.00820	0.00798	0.00776	0.00755	0.00734	0.00714	0.00695	0.00676	0.00657	0.00639
-2.3	0.01072	0.01044	0.01017	0.00990	0.00964	0.00939	0.00914	0.00889	0.00866	0.00842
-2.2	0.01390	0.01355	0.01321	0.01287	0.01255	0.01222	0.01191	0.01160	0.01130	0.01101
-2.1	0.01786	0.01743	0.01700	0.01659	0.01618	0.01578	0.01539	0.01500	0.01463	0.01426
-2.0	0.02275	0.02222	0.02169	0.02118	0.02068	0.02018	0.01970	0.01923	0.01876	0.01831
-1.9	0.02872	0.02807	0.02743	0.02680	0.02619	0.02559	0.02500	0.02442	0.02385	0.02330
-1.8	0.03593	0.03515	0.03438	0.03362	0.03288	0.03216	0.03144	0.03074	0.03005	0.02938
-1.7	0.04457	0.04363	0.04272	0.04182	0.04093	0.04006	0.03920	0.03836	0.03754	0.03673

-1.6	0.05480	0.05370	0.05262	0.05155	0.05050	0.04947	0.04846	0.04746	0.04648	0.04551
-1.5	0.06681	0.06552	0.06426	0.06301	0.06178	0.06057	0.05938	0.05821	0.05705	0.05592
-1.4	0.08076	0.07927	0.07780	0.07636	0.07493	0.07353	0.07215	0.07078	0.06944	0.06811
-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
-0.7	0.24196	0.23885	0.23576	0.23270	0.22965	0.22663	0.22363	0.22065	0.21770	0.21476
-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

