## THE EFFECT OF
## READ, ENCODE, ANNOTATE AND PONDER (REAP) STRATEGY
## TO ANALYTICAL EXPOSITION TEXT COMPREHENSION
## OF STUDENTS SMA SWASTA NURUL ILMI PADANGSIDIMPUAN

**A THESIS**

*Submitted to the Of State Institute for Islamic Studies Padangsidimpuan
as partial Fulfillment of the requirement for the Degree
of Education Scholar (S.Pd) In English*

Written By :

**MIRANTI**
**Reg Number . 15 203 00054**

ENGLISH EDUCATION PROGRAM

**TARBIYAH AND TEACHER TRAINING FACULTY**

**STATE INSTITUTE FOR ISLAMIC STUDIES**

**PADANGSIDIMPUAN**

**2019**

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**Reg. Number: 15 203 00054**

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**ENGLISH EDUCATION PROGRAM**

**TARBIYAH AND TEACHER TRAINING FACULTY**
**STATE INSTITUTE FOR ISLAMIC STUDIES**
**PADANGSIDIMPUAN**
**2019**

# LETTER OF AGREEMENT

Term   : Munaqosyah
         a.n. Miranti
Item   : 7 (seven) exemplars

Padangsidimpuan,   August 2019
To:
Dean Tarbiyah and
Teacher Training Faculty
In-
Padangsidimpuan

Assalamu'alaikum Wr.Wb.

After reading, studying and giving advice for necessary revision on thesis belongs to **Miranti**, entitled **"The Effect of Read, Encode, Annotate and Ponder (REAP) Strategy to Analytical Exposition Text Comprehension of Students SMA Swasta Nurul Ilmi Padangsidimpuan"**, 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.

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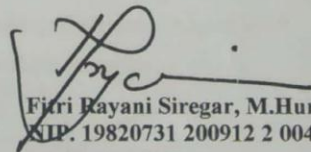
Wassalamu'alaikum Wr.Wb.

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## DECLARATION OF SELF THESIS COMPLETION

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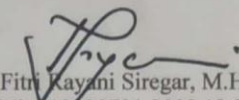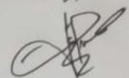Padangsidimpuan, August 2019
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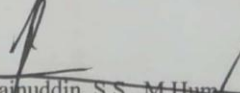| | | |
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| **Thesis** | : | THE EFFECT OF READ, ENCODE, ANNOTATE AND PONDER (REAP) STRATEGY TO ANALYTICAL EXPOSITION TEXT COMPREHENSION OF STUDENTS SMA SWASTA NURUL ILMI PADANGSIDIMPUAN |
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The Thesis had been accepted as a partial fulfillment of the requirement for the degree of graduate of Education (S.Pd.) in English

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بِسْمِ اللهِ الرَّحْمَنِ الرَّحِيْمِ

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I realize this thesis can't be considered perfect without critiques and seggestions. Therefore, it is such a pleasure for me to get critiques and suggestions to make this thesis better.

Padangsidimpuan,  July 2019
Researcher



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**Department** : **English Education Department (TBI-1)**
**Title of Thesis** : **The Effect of Read, Encode, Annotate and Ponder (REAP) Strategy to Analytical Exposition Comprehension of Students SMA Swasta nurul Ilmi Padangsidimpuan.**

## ABSTRACT

This research was intended to investigate the effect of Read, Encode, Annotate and Ponder (REAP) strategy to analytical exposition text comprehension of Students SMA Swasta Nurul Ilmi Padangsidimpuan. The problems of students in this research were: (1) The students are not able to comprehend the text well when they read because they have lack of vocabulary (2) The students still have difficulties in interpreting words and some important aspects such as, main idea, structure and specific language features (3) The conventional strategy applied by the teacher is less appropriate in comprehending analytical exposition text.

The research was experimental research with pre-test and post-test design. The population were all of the grade XI students of SMA Swasta Nurul Ilmi Padangsidimpuan in academic year 2018/2019. The sample were XI PI 2 as experimental class that consisted of 26 students and XI PI 1 as control class that consisted of 26 students. The data were collected through pre-test and post-test in *multiple choice* form and analyzed by using t-test formula.

The finding showed that there was difference mean-score before and after using REAP Strategy. Mean-score of experimental class before using REAP strategy was 37.68 and mean-score after using REAP was 74.68. Based on calculation of T-test, the researcher found that $t_{count} = 4.34$ and $t_{table} = 1.67591$. It means $t_{count} > t_{table}$ (4.34>1.67591) alternative hyphotesis ($h_a$) was accepted. So, there was significant effect of using REAP Strategy to annalytical exposition text comprehension at grade XI of SMA Swasta Nurul Ilmi Padangsidimpuan.

*Key Words*: REAP Strategy, Reading Comprehension, Analytical Exposition Text.

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Title of Thesis   : **Pengaruh Penggunaan Strategy** *Read, Encode, Annotate and Ponder* **(REAP) terhadap Pemahaman teks eksposisi analitis siswa SMA Swasta Nurul Ilmi Padangsidimpuan.**

## ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh dari *Read*, *Encode*, *Annotate and Ponder* (REAP) strategi terhadap pemahaman teks eksposisi analitis siswa SMA Swasta Nurul Ilmi Padangsidimpuan. Masalah siswa dalam penelitian ini adalah: (1)  Siswa tidak dapat memahami teks dengan baik ketika mereka membaca karena mereka kekurangan kosa kata (2)  Siswa masih mengalami kesulitan dalam menafsirkan kata-kata dan beberapa aspek penting seperti, ide utama, struktur dan fitur bahasa tertentu (3) Strategi konvensional yang diterapkan oleh guru kurang tepat dalam memahami teks eksposisi analitis.

Penelitian ini adalah penelitian eksperimen dengan desain pre-tes dan post-tes. Populasinya adalah keseluruhan murid kelas 11 SMA Swasta Nurul Ilmi Padangsidimpuan tahun akademik 2018/2019. Sampelnya adalah kelas XI PI 2 sebagai kelas eksperimen dan kelas XI PI 1 sebagai kelas kontrol yang terdiri dari 26 siswi. Data dikumpulkan melalui pre-test dan post-test dalam bentuk soal pilihan berganda dan dianalisis menggunakan T-test.

Hasil menunjukkan bahwa adanya perbedaan hasil rata-rata skor sebelum dan sesudah menggunakan REAP strategi. Rata- rata skor dari kelas eksperimen sebelum menggunakan REAP strategi adalah 37.68 dan rata- rata skor setelahnya adalah 74.68. Berdasarkan hasil perhitungan T-tes, peneliti menemukan bahwa $t_{hitung} = 4.34$ and $t_{table} = 1.67591$. Berarti   $t_{hitung} > t_{table}$ (4.34>1.67591) hipotesis alternatif ($h_a$) diterima. Maka ini berarti bahwa adanya Pengaruh Penggunaan Strategy *Read, Encode, annotate and Ponder* (REAP) terhadap Pemahaman Membaca Teks Eksposisi Analitis  Kelas 11 SMA Swasta Nurul Ilmi Padangsidimpuan.

***Kata Kunci****: REAP Strategy, Reading Comprehension, Analytical Exposition Text.*

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**CHAPTER I**

**INTRODUCTION**

**A. Background of the Problem**

Reading is one of the most important language skills to be learned since reading is a window of knowledge. By reading, readers can get much information and become knowledgeable. Reading also helps the readers to enrich their vocabulary by knowing some new words from the book they read, improving writing skill and also speaking by remembering every new words and information they have got. Reading is exactly very beneficial not only for increasing reader's knowledge but also entertain them such as when they read a comic, novel or short funny story.

Reading should be mastered by students because it is one of factors that help the learning process. In learning activity, reading is a capability that is an essential and is required by all students because the success of their study depends on their capability to read. It means that the students should have a good ability in reading. Without having the ability to read it will make the students difficult to get information or master the lesson given by the teacher.

In reading skill, students of SMA Swasta Nurul Ilmi Padangsidimpuan face some difficulties to comprehend the text because of

some factors.[1] There are some factors that influence the students in mastering reading skill to be low. They are internal and external factors.

The internal factors come from the students themselves. Based on information from one of the English teachers in SMA Swasta Nurul Ilmi Padangsidimpuan,[2] the factual condition shows that most of the students have lack of vocabulary. The students are also not able to comprehend the text when they read. They still have difficulties in interpreting words; rarely try to predict the meaning of unfamiliar words, some important aspects such as, main idea, structure and specific language features. They sometimes get frustrated on comprehending the text because most of them think that they have to know all the meaning of the words in the text to get the idea of the text. Hence, when they read a text, they just read it, because they are difficult to translate such a long text. Finally, they do not know the meaning of what they read about. It means they can not understand and comprehend the text well.

While the external factors come from teacher. The teacher used discussion strategy in teaching reading. In discussion strategy the teacher usually explains about the reading topic with students then asks the students to comprehend the text with their partner and answer the question.[3] This strategy is less appropriate in teaching analytical exposition text. In this

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[1] Suyono, *Private Interview* on December 10th, 2018 in SMA Swasta Nurul Ilmi Padangsidimpuan

[2] Suyono, *Private Interview* on December 10th, 2018 in SMA Swasta Nurul Ilmi Padangsidimpuan

[3] Suyono, *Private Interview* on December 10th, 2018 in SMA Swasta Nurul Ilmi Padangsidimpuan

case, the teacher should have an effective technique. The technique should make reading becomes an interesting lesson for the students.

Based on the 2013 curriculum, teachers' creativity is very necessary in order to make students to be more active in classroom activities. It means that in learning process of reading, the teacher should be more creative. In order to make the students interest in studying English especially reading, the teachers should have various strategies. One of the strategy that can be used is REAP strategy.

Read, Encode, Annotate and Ponder (REAP) strategy is an effective strategy that encourages students to share the ideas encountered in their reading[4] because REAP is primarily a cognitive-enrichment approach that teaches students to think more precisely and deeply about they read. REAP strategy was first developed in the early 1976 by Eanet & Manzo to stress the use of writing as means of improving thinking and reading.[5] REAP strategy develops independent reading skills by encouraging the readers to put the main idea of the passage into their own words, with assisting long term memory. In conclusion, this strategy guides the students to understand the texts and make the connections about what they have read.

The result of many researches shown that REAP strategy can help students overcome reading problems on comprehending the text.

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[4] Muhammad Holandyah, "Teaching Reading Comprehension Using REAP Strategy to the Third Semester Students of English Program in Tarbiyah Faculty of IAIN Raden Fatah Palembang" 4 (2013): p.19, http://eprints.polsri.ac.id/17/1/gabungan jurnal holistik V4 No 8 des 2012.pdf.

[5] Ula Casale Manzo Anthony V. Manzo, *Content Area Reading, A Heuristic Approach* (Ohio: Columbus Merrill Publishing Company, 1990), p.221.

Muhammad Holandyah's research.[6] He found that there was a significant improvement after using REAP strategy. Another previous study by Dawit Tibebu Tiruneh[7] shown that REAP strategy give a significant effect to students' reading comprehension. Besides, according Eanet and Manzo, the purposes of REAP strategy is to develop students to a greater understanding of writer's roles in writing and improve their reading comprehension.[8] So REAP strategy has any effect on students' reading comprehension.

Based on the above explanation, the researcher is interested to introduce REAP strategy to teach reading at grade XI Students of SMA swasta Nurul Ilmi Padangsidimpuan. The researcher wants to know whether REAP Strategy will give significant effect to students' reading comprehension or not.

## B. Identification of the Problem

Based on the above background, there are some problems on students' reading comprehension at grade XI Students of SMA Swasta Nurul Ilmi Padangsidimpuan, there are :

1. The students are not able to comprehend the text well when they read because they have lack of vocabulary

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[6] Holandyah, "Teaching Reading Comprehension Using REAP Strategy to the Third Semester Students of English Program in Tarbiyah Faculty of IAIN Raden Fatah Palembang."

[7] Dawit Tibebu Tiruneh, "The Effect of Explicit Reading Strategy Instruction on Reading Comprehension of Upper Primary Grade Students," *International Jurnal of Education* 6, no. 3 (2014), https://doi.org/10.5296/ije.v6i3.5989.

[8] Rutela Renette, "Using REAP ( Read , Encode , Annotate , Ponder ) In Teaching Reading" 4 (2016): p.278, http://ejournal.unp.ac.id/index.php/selt/article/download/6986/5520.

2. The students still have difficulties in interpreting words and some important aspects such as, main idea, structure and specific language features

3. The discussion strategy applied by the teacher is less appropriate in comprehending analytical exposition text.

## C. The Limitation of the Problem

Based on the above identifications of the problems, there were some problems involving in this research. In this research, the researcher only focused on students' problem in reading comprehension and solved by using Read, Encode, Annotate, and Ponder (REAP) Strategy. The research focused on exposition text because it is appropriate material for senior high school students to improve their thinking and analysis.

## D. The Formulation of the Problem

Based on the above identification, finally the problem is formulated as follows:

1. How is the analytical exposition text comprehension before using Read Encode Annotate and Ponder (REAP) strategy at grade XI SMA Swasta Nurul Ilmi Padangsidimpuan?

2. How is the analytical exposition text comprehension after using Read Encode Annotate and Ponder (REAP) strategy at grade XI SMA Swasta Nurul Ilmi Padangsidimpuan?

3.  Is there any significant effect of using Read, Encode, Annotate And Ponder (REAP) Strategy to analytical exposition text comprehension at grade XI SMA Swasta Nurul Ilmi Padangsidimpuan?

## E. The Objectives of the Research

The objectives of this research are:

1.  To describe the students' reading comprehension before using Read Encode Annotate and Ponder (REAP) strategy at grade XI SMA Swasta Nurul Ilmi Padangsidimpuan.

2.  To describe the students' reading comprehension after using Read Encode Annotate and Ponder (REAP) strategy at grade XI SMA Swasta Nurul Ilmi Padangsidimpuan.

3.  To examine whether the effect of Read, Encode, Annotate and Ponder REAP strategy to students' reading comprehension is significant or not.

## F. The Significances of the Research

The significances of the research are:

1.  For teacher, this study is expected to give contribution on helping them when they use REAP (Read, Encode, Annotate and Ponder) can enhance the quality of students' reading comprehension.

2.  For other researcher, the result of this research is expected to develop all information for other researcher as reference, and they can use this study as a comparison to other similar studies.

**G. The Definition of Operational Variables**

To avoid ambiguity, this research is consisted of two variables, so the definition of these variables can be described as follows:

1. Reading Comprehension

Reading comprehension is the act of understanding or getting information from the outside, processing in mind and try to interpreted it.

2. REAP (Reading, Encode, Annotate and Ponder)

REAP (*Read, Encode, Annotate, and Ponder*) is a technique that develops independent reading skills by encouraging the reader to put the main idea of the passage into his/her own words, both orally and in written form. It is one of the strategies that emphasizes on critical thinking and comprehending in reading.

**H. The Outline of the Thesis**

This research is organized into five chapters. Every chapter is subdivided into subtopics to elaborate the given issues. Chapter one consisted of introduction, they are: the background of the problem, the identification of problem, the limitation of the problem, the formulation of the problem, the objectives of the research, the significances of the research, the definitions of operational variables, and the outline of the thesis.

Chapter two consists of the theoretical description. It is divided into subchapters which consist of description of reading comprehension, REAP technique, the related findings, the conceptual framework and the hypothesis.

Chapter three consists of methodology of the research which is divided into sub chapter; the place and time of the research, the research methodology, the population and sample, the research instrument, procedure of data collection, technique of analyzing data.

Chapter four consists of data description, hypothesis testing, discussion and the threats of the research.

Chapter five consists of the conclusion about the result of this research and suggestion that are given by the research.

# CHAPTER II

# THEORITICAL DESCRIPTION

## A. Theoretical Description

### 1. Analytical Exposition Text Comprehension

#### a. The Nature of Reading

Reading is an active skill which consists of recognizing and comprehending. Reading is an important activity in life with which people can upgrade their knowledge. Reading skill is as well as an essensial tool for academic success. Reading is the most useful and essensial skill for people. Beatrice S and Linda said that an important way to improve general language skills in English is with reading[1] If we have a good skill in reading, it means that we constantly improve our writing and speaking skill by getting many informations from the text we read

According to Haris and Sipay in Manzo's book, reading is the meaningful interpretation of written language.[2] Others have tended to define reading in ways that reflect the perspective of their research or school of thought. For example:

a) Anderson, a cognitive psychologist, has popularized the view that reading is a process of constructing meaning from written text
b) Perfetti, a linguist, sees reading in more instrumental terms, referring to it as thinking guided by print.

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[1] L. Mikulecky, B. S., & Jeffries, "More Reading Power: Reading Faster, Thinking Skills, Reading for Pleasure, Comprehension Skills" (washington: Longman, 1996), p.1.
[2] Anthony V. Manzo and Ula Casale Manzo, Teaching Children to Be Literate: A Reflective Approach (kansas: Harcourt Brace College, 1995), p.10.

c) Goodman, a linguist and educational humanist, tends to see reading more as a natural extension of language process, but with some special benefits. Language, he says, enable us to share experience, learn from others, and to plan and work together. Written language expands this process to those who are not present, those who have died, and those yet to be born.[3]

In addition, Grabe and Stoller said that reading is the ability to draw meaning from the printed page and interpret this information appropriately.[4] Its interpretation will give an understanding to the readers about the text they read.

As stated on the above explanations, the researcher concludes that reading is a process of getting information from the text that the writers share their mind to readers.

## b. Definition of Reading Comprehension

Reading is an activity with a specific purpose, meaning that readers have something that would be reached by doing reading activity itself, such as gaining the necessary information or even getting pleasure, but the main point is the reader should understand what the text or author talks about. In other words, the reader should comprehend the text in order to reach his purpose to do reading activity. As Nunan states that comprehension is the goal of reading[5] Reading without comprehending is nothing more than tracking symbols on a page with your eyes and sounding them out. So, reading

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[3] Anthony V. Manzo and Ula Casale Manzo, p.10.
[4] William Grabe and Fredrica L. Stoler, *Teaching and Researching Reading* (England: Longman, 2002), p.9.
[5] David Nunan, *Practical English Language Teaching*, 1stEdition ed. (New York: McGraw Hill, 2003), p.68.

comprehension is important because without it reading doesn't provide the reader with any information.

Furthermore, Eka[6] said that reading comprehension is a mental process in which the readers try to understand the meaning in text by interpreting what have been read in order to find the idea given by the writers. Therefore, in order to get the idea from the text we read we have to interpret the text appropriately, despite the fact that it is not as easy as we think.

Based on statements above, it is clear that reading comprehension cannot be separated with the knowledge of the students' possession, or prior knowledge. A person who has more prior knowledge is able to interpret and comprehend the text better than a person with less, because all readers use their prior knowledge to bring meaning to texts. Thus, the reader should understand the reading passage. The main ideas, details, and an inference are common questions that can be drawn from the passages. In brief, reading is an activity to get main purpose. It is a comprehension.

There are two levels of thinking and how each can shape comprehension:

> 1) Surface level. The surface level of comprehension is a literal level of understanding represented by the ability to recall factual information from the text. This retrieval process involves short-term memory; thus, this level of understanding directly relates to the regency of reading.

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[6] Eka Sustri Harida, "Students ' Ability and Difficulties in Understanding English Text ( A Study at English Program IAIN Padangsidimpuan )" 21, no. 3 (2014): p.184, http://journal.tarbiyahiainib.ac.id/index.php/attalim/article/download/102/104.

2) Deep level. The deep level of comprehension is a conceptual level of understanding that results from the reader's ability to think beyond the text, thus integrating the author's intentions with the reader's point of view. At this level, the author's message serves as a pivotal point in regulating the readers deeper thinking.[7]

The levels above can be used by the students to know how deeper their comprehension about the content of text. In the surface level, the readers just comprehend the meaning of text, but in the deep level, the readers not only comprehend the text, but also criticize the text.

c. **Types of Reading Comprehension**

There are some type of reading that can make the reader easier to understand the text. According to M. F. Patel, Praveen M. Jain there are two types of reading:

1) Intensive Reading, this reading can be called text reading or passage reading. In this type of reading the learner needs the text to get knowledge. Reading is done to carry out to get specific information. Teacher plays main role in this Reading. This reading helps learner to develop active vocabulary. In intensive reading speech habit are emphasized and accent, stress, intonation and rhythm can be corrected

2) Extensive reading is the reading for pleasure. Extensive reading happens when the reader wants to know about something. The purpose of extensive reading will be to train the student to read directly and fluently in the target language for enjoyment, without the aid of the teacher. The reader does not care about specific or important information after reading. Usually people read for keep them update. Extensive reading is actually silent reading. The aim of extensive reading is to enrich learners'

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[7] Linda J.Dorn and Carla Soffos, *Teaching for Deep Comprehension* (Portland: Stenhouse Publishers, 2005), p.14, http://lib1.org/_ads/543002A9D7B3C7D3FA09337E176EFB42.

knowledge. Through extensive reading the good reading habit can be developed.[8]

Students mostly used intensive reading at school, because with the intensive reading the students can get more knowledge and it helps the students to get the specific information.

**d. Basics for Teaching Comprehension**

When reading is effortless, it is hard to expect and imagine what it might be like to read yet not be able to understand or even say much about we have read afterward. We might occasionally face the situation where we are unfamiliar or in which we are uninterested and therefore have reduced comprehension, it is difficult for us to imagine what it would be like to experience these same challenges with all material that we read. Yet, the students who lack understanding of whatever they read have taught by the teacher and they still struggle with ways to increase their reading and comprehension skills.

In teaching reading as well as teaching other skill such as listening, speaking and writing, the teacher should evaluate students' reading comprehension and development of skills. Consider some of the following overt responses that indicate comprehension:

1) Doing : the reader responds physically to a command
2) Choosing: the reader selects from alternatives posed orally or in writing.
3) Transferring: the reader summarizes orally what is read.
4) Answering: the reader answers question about the message.

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[8] M.F.Patel & Praveen M.Jain, *English Language Teaching (Methods, Tools, & Techniques)* (Jaipur: Sunrise Publisher, 2008), p.115, http://lib1.org/_ads/D117FC94CDE5A873DE703C64D8A2D438.

5) Condensing: the reader outlines or takes notes on a passage.
6) Extending: the reader provides an ending to a story.
7) Duplicating: the reader translates the message into the native language or copies it (beginning level, for very short passages only).
8) Modelling: the reader puts together a toy, for example, after reading directions for assembly.
9) Conversing: the reader engages in a conversation that indicates appropriate processing of information.[9]

One of the purposes of teaching reading is to know the ability on comprehending the text. The use of REAP strategy will assist the students to comprehend the text. In REAP strategy, the students will emphasize on the responses that indicate comprehension that explained above.

e. **Assesing Reading**

Language learners should be able to perceive how they learn the language in order to improve their language ability effectively. So the evaluation is needed to see how far and how effective their learning process. So, assessment is a kind of technique of evaluating the learning process.

According to brown assessment is an ongoing process that encompasses a much wider domain.[10] Assessment is different with test. A Test is an instrument that have identifiable scoring rubrics whereas assessment is student's responses to a question, it offers a comment and it tries out a new word of structure. Assessment is

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[9] H. Douglas Brown, Teaching by Principles : An Interactive Approach to Language Pedagogy (new jersey: Prentice Hall, 2000), p.300.
[10] H. Douglas brown, *Language Asessment : Principles and Classroom Practices* (San Fransisco: Pearson Education Inc, 2004), P.4.

usually found to assess students' performances that ultimately get assessed by themselves, teacher, as well as other students.

Routman states that in order for reading assessment teachers should consider the following:

1) Be thoroughly familiar with developmental learning processes and curriculum.
2) Articulate a philosophy of assessment and evaluation.
3) Know about and have experience collecting, recording, interpreting and analyzing multiple sources of data.
4) Be flexible and willing to try out multiple assessment procedures.
5) Be committed to understanding and implementing an approach to evaluation that informs students and directs instruction.[11]

Based on explanation above teachers should consider it to make students' evaluation more useful.

There are some indicators in assessing students' reading, as follow:

**Table 1**
Indicators of Reading Assessment

| NO | Indicators of Reading Assessment |
|----|----------------------------------|
| 1 | Able to identify the main idea of the text |
| 2 | Able to identify specific information of the text |
| 3 | Able to identify lexicogrammatical of the text |
| 4 | Able to identify the meaning of the text (word and sentence)[12] |

Based on indicators of reading assessment above, the students should be able to identify the main idea of the text, the specific information of the text, lexicogrammatical of the text and

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[11] J.Michael O'Malley & Lorraine Paldez Pierce, *Authentic Assessment for English Language Learners* (USA: Addison-Wesley Publishing Company, Inc, 1996), P.97-98.

[12] Silabus, "Bahasa Inggris-Wajib SMA Kelas XI", Kurikulum 2013, retrieved from *www.jagoanbahasainggris.com*on Saturday, December 3rd, 2018.

able to get the meaning of the text in reading (word or sentence). These indicators will be an escort for a teacher in assessing students' reading comprehension. So do researcher who want to research in a reading class.

**f. Definition of the Analytical Exposition Text**

Analytical exposition text is about the truth of a fact of a certain object. It is written to persuade them to believe it.[13] Analytical exposition is a kind of text that belongs to the type of argumentation text where the text contains a detailed author's thinking about a phenomenon that is around.

Coffin states that analytical exposition text is a spoken or written text that is intended to persuade the listeners or readers that something is the case.[14] In addition, Anderson and Anderson state that analytical exposition text is a type of text that is intended to persuade readers that something should be in case.[15] Scientific books, journals, magazines, newspaper, articles, academic speech or lectures, research report are kind of Analytical Exposition text.

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[13] Kisno Shinoda Sanggam Siahaan, *Generic Text Structure* (Yogyakarta: Graha Ilmu, 2008), p.51.

[14] Nurnajati, "Improving Analytical Exposition Reading by Using Feature Walks Strategy to The Eleventh Grade Students of SMA KARYA IBU PALEMBANG Nurnajati UIN Raden Fatah Palembang," n.d., p.102, http://jurnal.radenfatah.ac.id/index.php/edukasi/article/download/1533/pdf/.

[15] Nurul Aini, "The Effect of Using Tps (Think-Pair-Share) towards Students' Achievement in Writing Analytical Exposition Text.," 2017, http://jurnal.radenfatah.ac.id/index.php/edukasi/article/download/1533/pdf/.

The social function of this text is to persuade the reader that something is the case.[16] So this text convinces the reader that the presented topic is an important topic for discussion or attention that support the idea by way of arguments or the opinions. The analytical exposition is one of the argument text that contains an author's thinking that contains negative or positive effect from the case and the analytical exposition text is to reveal the readers that something is the important case.

**g. Generic Structure of Analytical Exposition Text**

Every text has its own generic structure. There are three generic structures in analytical exposition text. The generic structure as follow:

1) Thesis: the thesis is a sentence. It is the beginning of the text. Its function is to introduce the topic and indicate the writers' position about the topic discussed.

2) Arguments: the argument functions as the body of the text. Each of them functions to restate the main argument outline of the preview. Then it develops and supports each point (Elaboration).

3) Reiteration: the last part of analysis. It functions to provide re-statement of the writers' position.[17] This also to strengthen the reader or to persuade them.

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[16] Sanggam Siahaan, *Generic Text Structure*, p.51.
[17] Sanggam Siahaan, p.50-51.

From the generic structure, what make big different is that analytical exposition ends with paragraph to strengthen the thesis while hortatory makes a recommendation for readers.

### h. Language Features on Analytical Exposition Text

There are some language features on an analytical exposition text. The language features on analytical exposition text are:

1. Use simple present tense
2. Use relational process such as first,second, etc.
3. Use descriptive persuasive words with emotive connotations to emphasize your viewpoint. These words Can either be positive or negative. For example:
   -Instead of using *"bad"*, USE *appalling, unfavorable, ghastly, terrible.*
   -Instead of using *"good"*, USE *fantastic, incredible, momentous, remarkable.*
   -Instead of using *"persuading"*, USE *convincing, urging, enticing, realistic.*
4. Use mental verb such as such as *I believe; I prefer; I agree; I doubt; I disagree*
5. Use causal conjunction to indicate cause or reason of what is being stated. For example: because, consequently, despite, due to, for that reason, in case, otherwise, yet, etc.[18]

The above language features are commonly used in exposition text. By knowing the language features the readers can catch the information easily.

### i. The Example of Exposition Text

Title

Banning of motorbikes is necesssary in housing areas

Introduction (Thesis Statement)

Motorbikes are a nuisance and a cause for great distress. Even motorbikes or considered as the most convenient from of transportation, I think they are a hazard to humans, animals, as well as the environment. I think motorbikes should be banned in

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[18] Kementrian Pendidikan dan Kebudayaan, *Bahasa Inggris* (Jakarta, 2017), p.55.

housing areas due to the following reasons: cause of unreasonable amount of noise, air pollution, diseases, and accidents.

Argument 1 + Elaboration

First of all, I would like to point out that motorbikes are major contributors to the pollution in the world. Research has shown that motorbikes emit a deadly gas that is dangerous for environment. Consequently, long-term emission of gas from motorbikes is a major contributor of global warming (science daily).

Argument 2 + Elaboration

Secondly, according to report from BBC News Channel, motorbikes are also responsible for causing diseases such as bronchitis, cancer, and are a major trigger of asthma and high blood pressure. Some of the diseases are so gastly that they can kill people (BBC News, 2009).

Argument 3 + Elaboration

Furthermore, motorbikes create so much noise. There is "Vroom Vroom" noise everywhere. It is extremely difficult to sleep parents with infants find it extremely challenging. The moment their babies fall asleep, one or other motorbike passes by and the baby wakes up. It is also arduous for children to concentrate on their homework. Expert are of opinion that if there is extreme noise, It can lead to deafness and lack of concentration in children and adults (field, 1993).

Argument 4 + Elaboration

Finally motorbikes are responsible for horrible accidents. In some cases there are deaths. Motorbikes riders go so fast that they are unable to stop on time thus they and up hitting other people or animals. Many a time lot of animals are trampled and found death and road. Motorbikes are known to be the biggest killers on road (field, 1993).

Conclusion (Reiteration of Thesis)

In conclusion, from the argumants above, I strongly believe that motorbikes should be banned from housing areas.[19]

## 2. Read, Encode, Annotate and Ponder (REAP)

### a. Definition of REAP Strategy

Read, Encode, Annotate and Ponder (REAP) is a strategy for helping readers to read and understand a text. REAP strategy was first

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[19] Kementrian Pendidikan dan Kebudayaan, p.50-51.

developed in the early 1976 by Eanet & Manzo to stress the use of writing as means of improving thinking and reading.[20] REAP does so by teaching students a number of ways to *annotate*, or write short critiques of, what they have read. This after reading strategy helps students check for understanding and clarify and synthesize their thinking; it is intended to improve their comprehension.

According to Filippo[21], REAP is a complex elaborative study-reading strategy, taking notes from textbook, or when possible, making text annotations, is a popular strategy, particularly when used in combination with underlining. Furthermore Eanet and Manzo[22] stated that REAP is the other comprehensive multiple strategy instruction that encompasses many of the important individual strategy instructions. This reading strategy can help students interact with the text actively as well as construct meaning. As Eanet and Manzo asserted that the use of REAP supports increased comprehension and also develop students' higher-order thinking.

In addition Allen said that the use of this strategy will cause the students to revisit the text during each stage of the REAP process.[23] The students also learn to represent main ideas and the author's

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[20] Ula Casale Manzo Anthony V. Manzo, *Content Area Reading, A Heuristic Approach* (Ohio: Columbus Merrill Publishing Company, 1990), p.221.

[21] Supriyantini, "Using Read Encode Annotate And Ponder (Reap) Technique to Increase Reading Comprehension: A Case of the Eleventh Grade Students of SMA Negeri 6 Semarang in Academic Year 2014/2015" 6, no. 2 (2015): p.27.

[22] Dawit Tibebu Tiruneh, "The Effect of Explicit Reading Strategy Instruction on Reading Comprehension of Upper Primary Grade Students," *International Jurnal of Education* 6, no. 3 (2014): p.83, https://doi.org/10.5296/ije.v6i3.5989.

[23] Rutela Renette, "Using REAP ( Read , Encode , Annotate , Ponder ) In Teaching Reading" 4 (2016): p.278, http://ejournal.unp.ac.id/index.php/selt/article/download/6986/5520.

message in their own words. In other words, by following each steps

in REAP technique; students learn to make a connection between a

text and their own words. It would enable them to comprehend a text

and communicate their understanding based on the text.

In applying REAP strategy the students need to do four steps.

The steps are:

> **R**ead: to get the writer's basic message.
> **E**ncode: to translate the message into your own words
> **A**nnotate: the message by writing a response in one of several possible forms
> **P**onder: What you have read and written, by yourself and then by sharing and discuss it with others.[24]

Those all steps are designed to guide the students to comprehend

a text and REAP develops independent reading skills by encouraging

the reader to put the main idea of the passage into his/her own words,

both orally and in written form.

**b. The Purpose of REAP strategy**

REAP is a strategy which help the readers to understand the text

easily. It gives students a fresh way to think while reading to get

message of the text. This strategy will increase student's reading

comprehension with modelling and guided practice.

According to Hoover, The REAP strategy aims to help the

students as readers to become more effective readers and to think

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[24] Anthony V. Manzo and Ula Casale Manzo, *Teaching Children to Be Literate: A Reflective Approach*, P.357.

critically about the material that they have read.[25]. Because in REAP students found out the ways to represent the main ideas and message in their own words as they internalize the content of the reading.

In addition, Tierney, Readence, and Dishmer argues "REAP is alternative to the Directed Reading Activity and Guided Reading Comprehension".[26] So, every stages in REAP are successive because it contributes to the highest comprehension of students as they carry out all the activities involved in each stage. In short, REAP technique helps students to understand the reading materials since they read it.

c. **Annotations**

REAP includes some varieties of annotations, each of them focus on different aspects of a text, that help student to improve writing skills, metacognitive awareness, and comprehension of main ideas.

There are seven different annotation styles, which students can use singly or in combination:

1) A heuristic annotation is a statement, usually in the author's words, that has two purposes: to suggest the ideas of the reading selection and to provoke a response. To write the statement, the annotator needs to find the essence in a stimulating manner. The quotation selected must represent the theme or main idea of the selection.

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[25] Renette, "Using REAP (Read, Encode, Annotate, Ponder) In Teaching Reading," p.280.

[26] Fitrah Mutia, Anshari Syafar, and Anjar Kusuma Dewi, "Applying Read, Encode, Annotate and Ponder (Reap) Technique to Develop Reading Comprehension of the Grade x Students" 4, no. 1 (n.d.): P.3.

2) A summary annotation condenses the selection into a concise form. It should be brief, clear, and to the point. It includes no more or less than is necessary to convey adequately the development and relationship of the author's main ideas. For a story, the summary annotation is a synopsis—the main events of the plot.

3) A thesis annotation is an incisive statement of the author's proposition. As the word *incisive* implies, it cuts directly to the heart of the matter. With fiction, it can substitute for a statement of theme. One approach is to ask, "What is the author saying? What one idea or point is being made?" The thesis annotation is best written in precise wording; unnecessary connectives are removed to produce a telegram-like but unambiguous statement.

4) A question annotation directs attention to the ideas the annotator consider most germane; the question may or may not be the same as the author's thesis. The annotator must first determine the most significant issue at hand and then express this notation in question form. This annotation answers the question "What questions are the authors answering with the narrative?"

5) A critical annotation is the annotator's response to the author's thesis. In general, a reader may have one of three responses: agreement, disagreement, or a combination of the two. The first sentence in the annotation should state the author's thesis. The next sentence should state the position taken with respect to the thesis. The remaining sentences are devoted to defending this position.

6) An intention annotation is a statement of the author's intention, plan, or purpose as the student perceives it—in writing the selection. This type of annotation is particularly useful with material of a persuasive, ironic, or satirical nature. Determining intention requires that the annotator bring to bear all available clues—both intrinsic, such as tone and use of language, and extrinsic, such as background knowledge about the author.

7) A motivation annotation is a statement that attempts to speculate about the probable motive behind the author's writing. It is an attempt to find the source of the author's belief system and perceptions. Motivation annotation is a high form of criticism, often requiring penetrating psychological insight.[27]

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[27] Raymond F.Morgan and Charlene e. Fleener Judy S.Richardson, *Reading to Learn in the Content Areas* (Belmont: Wadsworth Cengage Learning, 2009), p.366-367, http://lib1.org/_ads/784D0FEA10FF1E29547FA6DB65B9C68E.

From seven annotations above the researcher choose the summary annotation for the research, because this research because this annotation is clear, brief and to the point.

**d. Teaching Reading by Using REAP strategy**

There are some steps to guide teaching reading by using REAP Strategy. According to Eanet and Manzo[28] also add some more explanation about REAP strategy as follow: First activity that researcher held is the researcher scaffolds the student in order to build their background knowledge. Such as shows some pictures, the title of the text and asks some questions so that the students may have some references in their mind about text that they will read.

The next step is researcher tells students about four stages that they have to do with reading. Then, the first activity should teacher do is giving a exposition text to each member of the group.

Next, the teachers guide students to do the first phase of REAP strategy; *Read,* in this phase, the teachers can ask one of the students to read aloud in front of the class and the other students listening carefully. After that the teachers ask all of students to get the writer's basic message.

The second activity is *Encode*; in this phase the teacher leads the students to explore their idea about that text into their own words. The students may discuss to other friends. In Encode step the teacher

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[28] Anthony V. Manzo and Ula Casale Manzo, *Teaching Children to Be Literate: A Reflective Approach*, p.357.

also add an activity; discussing the new or difficult vocabulary. Teacher asks a student to write down the difficult vocabularies in the whiteboard. After that, the teacher leads the discussion about the meaning or the synonym of the difficult vocabularies.

The third step is *Annotate*, this activity takes time about 15 minutes. There are some varieties of annotations, each of them focus on different aspects of a text, that help to improve student writing skills, metacognitive awareness, and comprehension of main ideas.[29] In annotate step, the students write down the idea about the content of the exposition text that teacher gave them before. The students can make the generic structure of the exposition text they have read to make it easier.

The last stage of REAP strategy is *Ponder*, in this stage, they pondering the significance of text, by thinking, discussing, or talking with their member of the group, then make one perfect summarize about the text. The summary is using their own language.

## B. The Review of Related Findings

This research is not the first research that had been done. There was an international journal conducted by Dawit Tibebu Tiruneh[30]. He explicitly taught to use REAP reading strategy to his students and the result shown that there was significant effect with the mean score of pre-test in experimental class was 9.52, and the post-test was 12.77.

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[29] Anthony V. Manzo, *Content Area Reading, A Heuristic Approach*, p.222.
[30] Tiruneh, "The Effect of Explicit Reading Strategy Instruction on Reading Comprehension of Upper Primary Grade Students."

Second, Fanny Dwi Pratiwi found that the mean score of experimental class before applying REAP strategy was 70.24 and the mean score of experimental class after applying REAP strategy was 76.6 with $t_{count} = 2.68 > t_{table} = 2.01$.[31] Thus, there is an effect of using REAP strategy toward the reading comprehension of the first year student at State Islamic Senior High School Dumai.

Third, by Amaliatul Khoiriah. The result on her research shown that the mean score of pre-test of the experimental class was 75 and the mean of post-test was 90. The mean score of pre-test of the control class was 70 and the mean of post-test was 75 with $t_o$ is higher than $t_t$ 5.18 > 2.02.[32] It means there is significance effect of using REAP strategy toward reading comprehension.

Fourth, Iwan Supardi et al[33] concluded that the students' achievements in reading comprehension are different after using REAP strategy. It showed by the interval score between the pre-test and post-test in experimental group (11.59) was higher than the interval score between pre-test and post test in control group (6.37). This strategy was also proved

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[31] Fanny Dwi Pratiwi, "The Effect Of Using Read Encode Annotate And Ponder (Reap) Strategy Toward Reading Comprehension In News Item Text Of The First Year Student At State Islamic Senior High Schoo Dumai," 2012.

[32] Amaliatul Khoiriah, "The Effetiveness of Read, Encode, Annotate, Ponder (REAP) Strategy Toward Student's Reading Comprehension On Exposition Text (An Experimental Research At The Eleventh Grade Students Of Islamic Senior High School Mathla'ul Anwar Menes Center In The Academi," 2017, p.60-62, http://repository.uinbanten.ac.id/1503/1/AMALIATUL KHOIRIYAH 132301412.pdf.

[33] Iwan Supardi et al., "Using Read, Encode, Annotate and Ponder (Reap) Strategy in Teaching Reading Comprehension," 2015, 1–12, jurnal.untan.ac.id/index.php/jpdpb/article/view/10328.

effective, showed by the effect size value (Δ) 0.98, qualified as having *moderate effect*.

Next, Eka Sustri Harida[34] said that critical reading is applicable to use in reading comprehension. Based on the data analysis, the mean score of post-test was 86.96 and the mean score of pre-test was 70.00. This suggested that there was significant improvement achieved by critical reading. It is the same with REAP which needs a critical thinking that give significant positive effect to assess students' reading comprehension.

The last, Novilismanita et al[35] in their journal found that there was a significant difference of students' reading comprehension on narrative text after being taught through Read Encode Annotate Ponder strategy. Based on the data analysis, it was found that t-test (7.051) was bigger than t-table (2.023). The mean score of post-test was 73.73 and the mean score of pre-test was 66.63, the differences between post-test and pre-test 7.100 points. This suggested that there was significant improvement achieved in reading activity after the application of REAP strategy.

Due to the previous research, the researcher concluded that REAP strategy has an effect on students' learning. Therefore, the researcher wants to try it in another location with different problem and situation.

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[34] Eka Sustri Harida, "Using Critical Reading Strategies; One Way For Assesing Students ' Reading Comprehension," 2016, 199–206, http://ejournal.unp.ac.id/index.php/selt/article/download/6929/5463.

[35] Erni Novilismanita, Atni Prawati, "The Effect Of Using Reap (Read, Encode, Annotate, Ponder) Strategy On Reading Comprehension Of Narrative Text Of The First Year Students Of Sman 1 Tebing Tinggi Timur Meranti," 2017, 1–10.

## C.  The Conceptual Framework

Reading is one of the important skills which improve students'general language skill in English. Unfortunately most learners think that reading is an extremely difficult task that requires integrated body of skills, which also does not get easier with the passage of time and the accumulation of experience. Many people are difficult to comprehend the text, so do students of SMA Swasta Nurul Ilmi Padangsidimpuan especially in the second grade. They have some problems in reading comprehension, for instance difficult to comprehend a passage, difficulties in interpreting words and some important aspects such as, main idea, structure and specific language features and have not known the appropriate strategy for reading. Since reading is very important, it is necessary to determine the most suitable strategies for reading effectively. REAP is an effective strategy for students because it encompasses analysis and synthesis and particularly beneficial for students with learning problems.

The researcher illustrates the conceptual framework as follow:

**Figure 1**
**Conceptual Framework**

The discussion strategy applied by the teacher is less appropriate in teaching reading, the students were not able to comprehend the text well when they read and still have difficulties in interpreting words and some important aspects such as, main idea, structure and specific language features.

REAP (Read, Encode, Annotate and Ponder)

Pre-test

Experiment class with treatment

Control class with Discussion strategy

Post-test

Hypothesis

$H_a$=Accepted

$H_0$=Rejected

### D. Hypothesis

A hypothesis is a type of prediction found in many experimental studies; it is a statement about what we expect to happen in a study.[36] It is a formal question that intends to resolve. Kinds of hypothesis which are used here are: Zero hypothesis ($H_0$), is the hypothesis which state that there is not

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[36] Susan M Gass Alison Mackey, *Second Language Research Methodology and Design* (New Jersey: Lawrence Erlbaum Associates, Inc., 2005), p.100, http://library1.org/_ads/A0B4B4433B3900F59F1710D17DCEDEF6.

any significant effect of the object of the research. Alternative hypothesis ($H_a$) is the hypothesis which states that there is any significant effect of the object of the research. It is also called with positive hypothesis.

The criteria of the test of hypothesis as follow:

Ha: There is significant effect of REAP (Read, Encode, Annotate, and Ponder) Strategy to annalytical exposition text comprehension at grade XI students of SMA Swasta Nurul Ilmi Padangsidimpuan (Ha). $\mu_1 > \mu_2$

Ho: There is no significant effect of REAP (Read, Encode, Annotate, and Ponder) to annalytical exposition text comprehension at grade XI students of SMA Swasta Nurul Ilmi Padangsidimpuan (Ho). $\mu_1 = \mu_2$.

# CHAPTER III

## RESEARCH METHODOLOGY

### A. Place and Time of Research

This research had been conducted at SMA Swasta Nurul Ilmi Padangsidimpuan. It was located at H.T. Rizal Nurdin Street, number 5, Silandit, South Padangsidimpuan, North Sumatera. It was done from December 2018 up to July 2019.

### B. Research Design

This research was done through quantitative approach with experimental method. The researcher used 2 classes which consists of one control class and one experimental class. Generally, the researcher used two groups, experimental group as a group that got the treatment and the control group that didn't get treatment. It can be shown on the following table:

**Table 2**
Research Design

| Class | Pre-test | Treatment | Post-test |
|---|---|---|---|
| Experiment Class | T1 | REAP Strategy | T2 |
| Control Class | T1 | Discussion Strategy | T2 |

### C. Population And Sample

#### 1. Population

The populations as the data sources of this research were all of the second grade students of SMA Swasta Nurul Ilmi Padangsidimpuan

that consist of 3 PA classes and 5 PI classes. It can be seen in the following table:

**Table 3**
Population of the Research

| No | Class | Students |
|----|-------|----------|
| 1 | XI PA 1 | 23 |
| 2 | XI PA 2 | 31 |
| 3 | XI PA 3 | 28 |
| 3 | XI PI 1 | 26 |
| 4 | XI PI 2 | 26 |
| 5 | XI PI 3 | 32 |
| 6 | XI PI 4 | 31 |
| 7 | XI PI 5 | 30 |
| | TOTAL | 235 |

2. **Sample**

The sampling technique used by researcher is simple random sampling. The basic characteristic of simple random sampling is that all members of the population have an equal and independent chance of being included in the random sample.[1] Therefore, the researcher took two classes that that had similar competence in English based on their pre-test score result, and the information from the teacher. Those two classes research took as a sample was the control class and experiment class.

The researcher used normality and homogeneity test to know the similar ability both of the class. Normality test is used to know whether

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[1] Chris Sorensen Donald Ary, Lucy jacobs, *Introduction to Research in Education* (Belmont: Wadsworth, Cengage Learning, 2010), p.150, http://library1.org/_ads/2FF7E5BF91A102A19EAC69FE8267B275.

the data of research is normal or not. To know the normality, the researcher used *Chi-Square* formula. The formula is as follow:[2]

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

Where:

$x^2$    = value of chi-square

$f_o$    = observed frequency

$f_h$    = expected frequency

To calculate the result of *Chi-Square*, it is used significant level 5% (0.05) and degree of freedom is (dk= k-1). If result $x^2_{count} < x^2_{table}$ , the data is distributed normal. The hyphotesis are :

Ha : The distribution of class is normal

Ho : The distribution of class is not normal

Homogeneity test is used to know whether both experimental class have the same variant or not. If both classes are same, it can be called homogenous. To find the homogeneity, the researcher used *Harley test*.

The formula is as follow:[3]

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

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

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

Ha : The distribution of class is homogenous

Ho : The distribution of class is not homogenous

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[2] Donald Ary, Lucy jacobs, p.188.

[3] Agus Irianto, *Statistik Konsep Dasar Dan Aplikasinya* (Jakarta: Kencana, 2009), P.276.

While the hypothesis will be rejected if $F \leq F\frac{1}{2}a(n_1\text{-}1)\ (1= n_2\text{-}1)$, and if $F_{count} > F_{table}$ hypothesis is accepted. It determined with significant level 5% (0.05) and dk numerator is $(n_1\text{-}1)$, while a dk denominator is $(n_2\text{-}1)$.

According to explanations above, the researcher gave the pre-test to the class that similar ability in English to know the normality and homogeneity of the sample. As the result, the researcher found that the homogen class and got the same variant were XI PI 1 and XI PI 2 (see Appendix 17 and 19). So, the researcher chose the both classes as a sample. XI PI 1 as experimental class that consisted of 26 students and XI PI 2 as control class that consisted of 26 students.

## D. The Research Instrument

Instrument is the general term that researcher uses for a measurement device. It is a tool that can be used by the researcher to collect the data. Tests are valuable measuring instrument for educational research. A test is a set of stimuli presented to individual in order to elicit responses in the basis of which a numerical score can be assigned.[4] In this research, the researcher will use a test as instrument in collecting data.

The test that used in this research is multiple choice test that consist of five options a, b, c, d and e. The researcher has made 35 questions of pre test and 35 questions of post test to validate. As the result, there are 21

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[4] Donald Ary, Lucy jacobs, *Introduction to Research in Education*, p.210.

valid questions for pre test and there are 24 valid questions for post test. Then the researcher took 20 questions of each test. So there will be 20 questions for each pre-test and post-test. This test is given to experimental class and control class. Each question is given 5 score to get the students' score in answering the questions. So, the maximum score of test is 100. The researcher observes then control all the students involve this research during do the test.

**Table 4**
The Indicators of Reading Comprehension on pre-test

| NO | Indicators of Reading Assessment | Item | Number of Items | Score | Total Score |
|----|----------------------------------|------|-----------------|-------|-------------|
| 1 | Able to identify the main idea of the text | 4 | 2, 5, 9, 15 | 5 | 20 |
| 2 | Able to identify specific information of the text | 6 | 6, 7, 12, 13, 14, 18 | 5 | 30 |
| 3 | Able to identify lexicogrammatical of the text | 6 | 1, 3, 10, 16, 17, 19, | 5 | 30 |
| 4 | Able to identify the the meaning of the text (word and sentence) | 4 | 4, 8, 11, 20 | 5 | 20 |
| | Total | 20 | | 5 | 100 |

**Table 5**
The Indicator of Reading Comprehension Test of Post-Test

| NO | Indicators of Reading Assessment | Item | Number of Items | Score | Total Score |
|----|----------------------------------|------|-----------------|-------|-------------|
| 1 | Able to identify the main idea of the text | 4 | 1, 9, 14, 18 | 5 | 20 |
| 2 | Able to identify specific information of the text | 3 | 3, 8,12, | 5 | 15 |
| 3 | Able to identify lexicogrammatical of the text | 5 | 2, 5, 14, 15, 19 | 5 | 25 |

| 4 | Able to identify the the meaning of the text (word and sentence) | 8 | 4, 6, 7, 10, 13, 16, 17, 20 | 5 | 40 |
|---|---|---|---|---|---|
| | Total | 20 | | 5 | 100 |

## E. The Validity and Realibility Instrument

### 1. The Validity of The Test

Every test, whether it is a short, informal classroom test or a public examination should be as valid as the test constructor that can make it. The test must aim at providing a true measure of the particular skill intended to measure.

Gay and Airasian state that validity is the most important characteristic a test or measuring instrument can possess. It is concerned with the appropriateness of the interpretations made from test score.[5] In this research, the researcher used item validity to find out the validity of instrument.

To know the validity of the each question was refer to list *r* biserial with *r $_t$ in 5% significant*: 0.396 and 1% significant: 0.463. So, if $r_{count} > r_{table}$ the test is classified valid. The formula of *r point biserial* can be used as follow:

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

Where:

$r_{pbi}$      : coefficient item validity

$M_p$      : mean score

$M_t$      : mean score of the total score

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[5] L. R. Gay, *Educational Research: Competence for Analysis and Applications*, ed. Jeffery W. Johnston, 10th ed (Boston: Pearson Education, Inc, 2012), P.161.

$SD_t$        : 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.[6]

## 2. The Reliability of the Test

An instrument of the research must be reliable. A reliable test is consistent and dependable.[7] Reliability is the degree of accuracy or precision in the measurements made by a research instrument.[8] Reliable instrumentation shows that there is a trustworthy or reliable of the test to take the data. In this research, the researcher uses Kuder-Richardson formula to measure the reliability of test. The formula is as follow:

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

Where:

$R_{11}$     : Reliability of the Instrument

N       : Total of Question

$St^2$      : Variants Total

$p$        : <u>Proporsi Subject who is right Answer(1)</u>
                     n

$q$        : <u>Proporsi Subject who is Wrong Answer (0)</u>[9]
                      n

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[6] Anas Sudijono, *Pengantar Statistik Pendidikan* (Jakarta: Raja Grafindo Persada, 2008), p.258.

[7] H. Dougllas brown, *Language Asessment : Principles and Classroom Practices*, P.20.

[8] L. R. Gay, *Educational Research: Competence for Analysis and Applications*, p.181.

[9] Suharsimi Arikunto, *Prosedur Penelitian* (Jakarta, 1998), p.182, Rineka Cipta.

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

## F. The Procedure of the Research

The procedures of the research were pre-test, treatment and post-test. The description can be seen as follows:

### 1. Pre-Test

The researcher did the pre-test before the treatment, the pre-test intended to look for the difference between the student's reading comprehension before and after the students using Read Encode Annotate Ponder (REAP) strategy, this pre-test di by given an exposition text and asked to students to answer the question about the text. The question was 20 questions of multiple choice test.

### 2. Treatment

After the researcher did the pre test in the day before, the researcher did the treatment that was teaching reading comprehension using Read Encode Annotate Ponder (REAP) strategy in experiment class and teaching reading by discussion in control class. The following treatment as a collection of procedures of the implementation of Read, Encode, Annotate and Ponder (REAP) strategy can be seen as the following:

a) Read

a) The teacher asked the students to read an exposition text.

b) The teacher asked the students to comprehend the text by identifying the aspects involving in the text. The teacher asked the students to catch the main idea of analytical exposition text.

b) Encode

a) The teacher asked the students to translate the writer's word into the students' own words.

b) The teacher asked the students to put their comprehending about the information in their mind.

c) Annotate

a) The teacher introduced to the students several forms of annotations.

b) The teacher asked the students to response their comprehending by transferring in written form. Kinds of annotation can be chose based on the level of students. If desire, the students can work alone or in small group to make the annotation.

d) Ponder

a) The teacher asked the students to ponder or reflect on the significance of the passage and their writing.

b) The teacher asked the students to share what they have read and written to whole class.

c) The teacher asked the students to discuss their work.

d) The teacher evaluated what the students have done.

The indicators of discussion strategy that is used by the teacher in teaching reading in control class as following:

1) The teacher gave the text about Analytical Exposition text.

2) The teacher asked the students to read the text and asks the students to translate the difficulty words with their partner.

3) The teacher asked the students to comprehend the meaning of the text.

4) The teacher evaluated what the students do and corrected the answer that the students did.

The indicators of variable Y as a dependent variable (the students' reading comprehension) are:

1) The students were able to identify analytical exposition text about the reading for meaning.

2) The students were able to find out about the factual information of exposition text.

3) The students were able to find out the main idea of analytical exposition text.

4) The students were able to find out the meaning of word references or similar meaning.

5) The students were able to find out the communicative purpose of the reading text.

3. **Post-Test**

Post-test is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment. In our example, this would be assessing students' attitudes toward smoking at

the end of the semester after the experimental treatment.[10] The researcher did the post-test after the treatment and pre-test to measure the effectiveness of reading comprehension using Read Encode Annotate Ponder (REAP) Strategy. The researcher gave the multiple choice test for the post test.

## G. The Technique of Data Analysis

In order to find out whether there was a significant effect of using Read, Encode, Annotate, and Ponder (REAP) Strategy toward Reading Comprehension of the Second grade Student at SMA Swasta Nurul Ilmi Padangsidimpuan, the researcher used statistical parametric data technique.

The technique of the data analysis that was used in this research is Independent T-test formula.

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

Where:

t    : the value which the statistical significant

$\overline{X_1}$ : the average score of the experimental class

$\overline{X_2}$ : the average score of the control class

$s_1{}^2$ : deviation standard of the experimental class

$s_2{}^2$: deviation standard of the control class

$n_1$  : number of experimental class

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[10] John W. Creswell, *Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (Boston: Pearson Education. Inc, 2012), p.297, http://lib1.org/_ads/6D7DFDCAC4C61DC924CC98E43F694F33.

n$_2$: number of control class 2[11]

If t-$_{test}$ is higher than t$_{table}$, the researcher can conclude that ha is accepted and ho is rejected. It means that there is significant effect of using REAP strategy toward the students' reading comprehension. If t-$_{test}$ is lower than t$_{table}$, the writer can conclude that ha is rejected and ho is accepted. It means that there is no significant effect using REAP strategy to analytical exposition text comprehension at the second grade of SMA Swasta Nurul Ilmi Padangsidimpuan. Before the researcher analyses the data using statistical parametric, the data should be tested to know the homogeneity variance and the normal distribution data. The homogeny variance is analyzed by using F formula:

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

The normal distribution data is analyzed by using Chi Square formula:[12]

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

Where:

$x^2$ = value of chi-square

$f_o$ = observed frequency

$f_h$ = expected frequency[13]

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[11] Sugiyono, *Statistika Untuk Penelitian* (Bandung: ALFABETA, 2014), p.138.

[12] Donald Ary, Lucy jacobs, *Introduction to Research in Education*, p.188.

[13] Irianto, *Statistik Konsep Dasar Dan Aplikasinya*, p.276.

**CHAPTER IV**

**DATA ANALYSIS**

As mentioned in earlier chapter, in order to find out the effect of using Read, Encode, Annotate and Ponder (REAP) Strategy on students' reading comprehension, the researcher had 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. The Description of Data**

**1. The Description of Data before Using Strategy Read, Encode, Annotate and Ponder (REAP) 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 | 890 |
| Highest score | 70 |
| Lowest score | 15 |
| Mean | 37.68 |
| Median | 35.87 |
| Modus | 36.46 |
| Range | 55 |
| Interval | 9 |
| Standard deviation | 15.48 |
| Variants | 285.38 |

Based on the above table the total score of experimental class in pre-test was 890, mean was 37.68, standard deviation was 15.48, variants was 285.38, median was 35.87, range was 55, modus was 36.46, interval was 9. The researcher got the highest score was 70 and the lowest score was 15. It can be seen on appendix 21.

Then, the computed of the frequency distribution of the students' score of experiment class could be applied into table frequency distribution as follow:

**Table 7**
**Frequency Distribution of Students' Score**

| No | Interval | Frequency | Percentages |
|----|----------|-----------|-------------|
| 1 | 15 – 23 | 6 | 23.07% |
| 2 | 24 – 32 | 4 | 15.38% |
| 3 | 33 – 41 | 8 | 30.77% |
| 4 | 42 – 50 | 3 | 11.54% |
| 5 | 51 – 59 | 1 | 3.85% |
| 6 | 60 – 68 | 3 | 11.54% |
| 7 | 69 – 77 | 1 | 3.85% |
| $i = 9$ | | 26 | 100% |

From the table above, the students' score in class interval between 15 – 23 was 6 students (23.07%), class interval between 24 – 32 was 4 students (15.38%), class interval between 33 – 41 was 8 students (30.77%), class interval between 42 – 50 was 3 students (11.54%), class interval between 51 – 59 was 1 student (3.85%), class interval between 60 – 68  was 3 students (11.54%) and the last class interval between 69 – 77 was 1 student (3.85%).

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



**Figure 2: Description Data Pre-Test of Experimental Class**
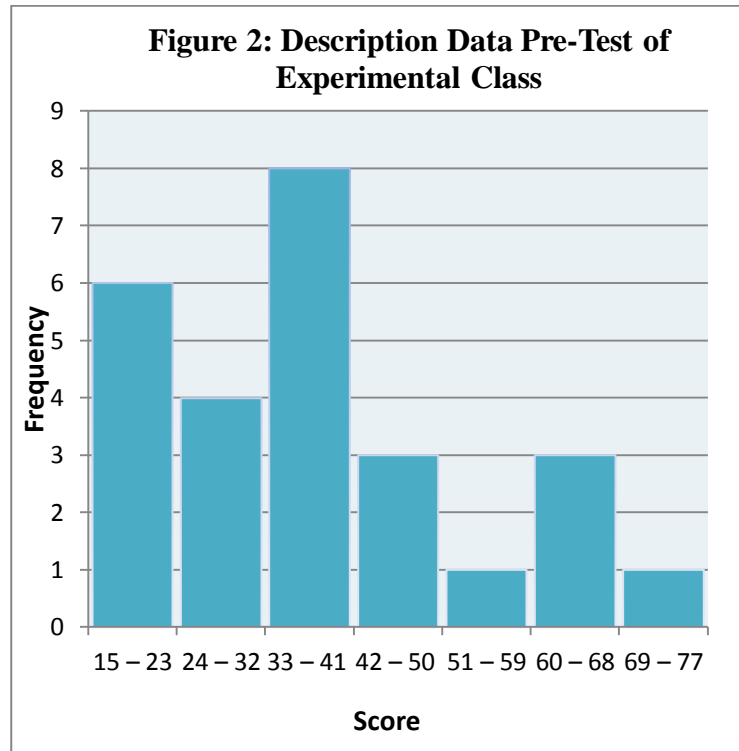
From the histogram of students' score of experimental class in pre test shown that the lowest interval 15 – 23 was 6 students and highest interval 69 – 77 was only 1 students. Histogram also shown that the highest frequency in interval 33 – 41 was 8 students.

**b. Score of Pre-Test Control Class**

In pre-test of control class, the researcher calculated the result that had been gotten by the students in answering 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 | 980 |
| Highest score | 70 |
| Lowest score | 15 |
| Mean | 36.01 |
| Median | 37 |
| Modus | 37.27 |
| Range | 55 |
| Interval | 9 |
| Standard deviation | 14.13 |
| Variants | 198.46 |

Based on the above table the total score of control class in pre-test was 980, mean was36.01, standard deviation was 14.13, variants was198.46, median was 37, range was 55, modus was 37.27, interval was 9. The researcher got the highest score was 70 and the lowest score was 15. It can be seen on appendix 21.

Then, the computed of the frequency distribution of the students' score of experiment class could be applied into table frequency distribution as follow:

**Table 9**
**Frequency Distribution of Students' Score**

| No | Interval | Frequency | Percentages |
|---|---|---|---|
| 1 | 15 – 23 | 5 | 19.23% |
| 2 | 24 – 32 | 3 | 11.54% |
| 3 | 33 – 41 | 10 | 38.46% |
| 4 | 42 – 50 | 4 | 15.38% |
| 5 | 51 – 59 | 1 | 3.85% |
| 6 | 60 – 68 | 2 | 7.69% |
| 7 | 69 – 77 | 1 | 3.85% |
| $i = 9$ | | 26 | 100% |

From the table above, the students' score in class interval between 15 – 23 was 5 students (19.23%), class interval between 24 – 32 was 3 students (11.54%), class interval between 33 – 41 was 10 students (38.46%), class interval between 42 – 50 was 4 students (15.38%), class interval between 51 – 59 was 1 student (3.85%), class interval between 60 – 68  was 2 students (7.69%) and the last class interval between 69 – 77 was 1 student (3.85%).

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



**Figure 3: Description Data Pre-Test of Control Class**
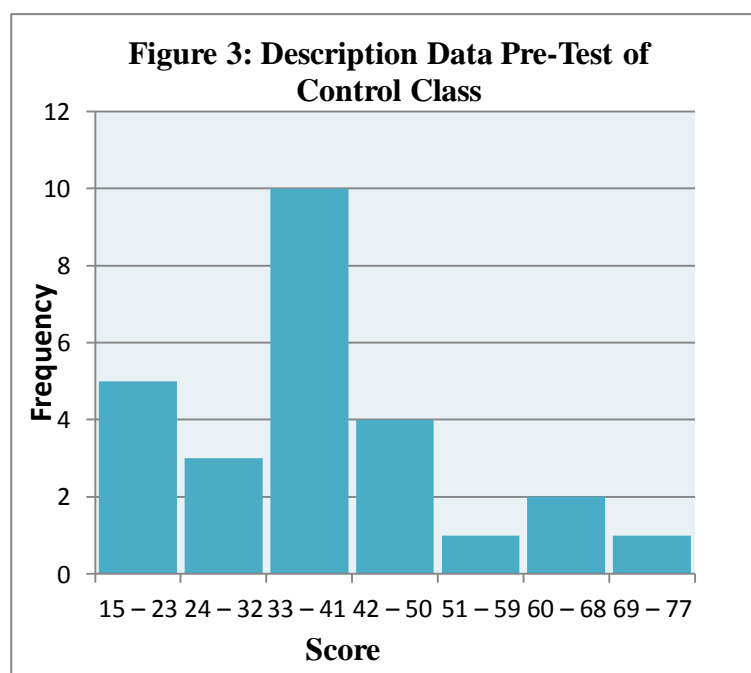
From the histogram of students' score of control class in pre test shown that the lowest interval 15 – 23 was 5 students and highest interval 69 – 77 was only 1 students. Histogram also shown that the highest frequency in interval 33 – 41  was 10 students.

2.  **The Description of Data After Using Read, Encode, Annotate and Ponder (REAP) 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 REAP 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 | 1940 |
| Highest score | 95 |
| Lowest score | 60 |
| Mean | 74.68 |
| Median | 73.18 |
| Modus | 72.7 |
| Range | 35 |
| Interval | 6 |
| Standard deviation | 9.48 |
| Variants | 55.84 |

Based on the above table the total score of experiment class  in post-test was 1940, mean was 74.68 standard deviation was 9.48, variants was 55.84, median was 73.18, range was 35, modus was 72.7, interval was 6. The researcher got the highest score was 95 and the lowest score was 60. It can be seen on appendix 22.

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 | Frequency | Percentages |
|----|----------|-----------|-------------|
| 1 | 60 – 65 | 5 | 19.23% |
| 2 | 66 – 71 | 6 | 23.07% |
| 3 | 72 – 77 | **7** | 26.92% |
| 4 | 78 – 83 | 3 | 11.53% |
| 5 | 84 – 89 | 4 | 15.38% |
| 6 | 90 – 95 | 2 | 7.69% |
| $i = 6$ | | 26 | 100% |

From the table above, the students' score in class interval between 60 – 65 was 5 students (19.23%), class interval between 66 – 71was 6 students (23.07%), class interval between 72 – 77was 7 students (26.92%), class interval between 78 – 83 was 3 students (11.53%), class interval between 84 – 89was 4 students (15.38 %), and the last class interval between 90 – 95was 2 students (7.69%).

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



**Figure 4: Description Data Post-Test of Experimental Class**
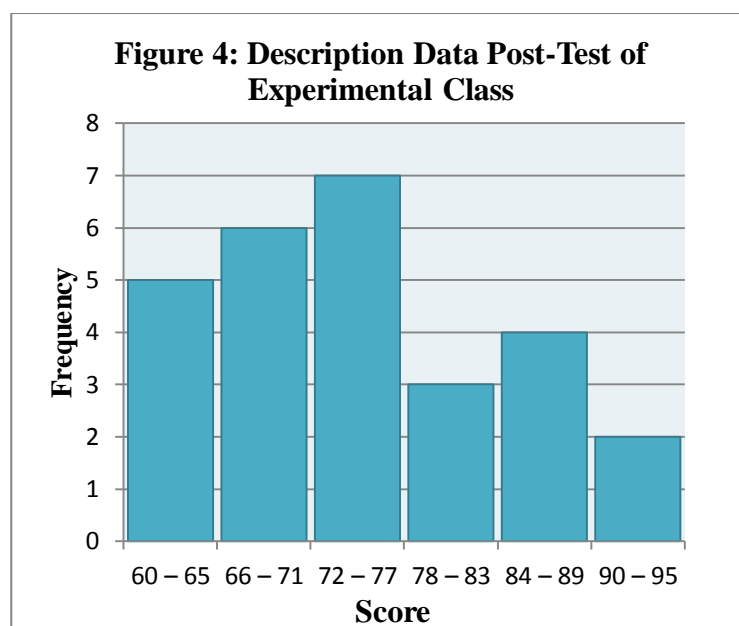
From the histogram of students' score of experimental class in post test shown that the lowest interval 60 – 65 was 5 students and highest interval 90 – 95 was only 2 students. Histogram also shown that the highest frequency in interval 72 – 77 was 7 students.

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 comprehension by using Discussion 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 | 1835 |
| Highest score | 85 |
| Lowest score | 55 |
| Mean | 71.45 |
| Median | 73.9 |
| Modus | 73.35 |
| Range | 30 |
| Interval | 5 |
| Standard deviation | 6.6 |
| Variants | 46.65 |

Based on the above table the total score of control class in post-test was 1835, mean was 71.45 standard deviation was 6.6, variants was 46.65, median was 73.9, range was 30, modus was 73.35, interval was 5. The researcher got the highest score was 85 and the lowest score was 55. It can be seen on appendix 22.

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 | Frequency | Percentages |
|---|---|---|---|
| 1 | 55 – 59 | 1 | 3.85% |
| 2 | 60 – 64 | 2 | 7.69% |
| 3 | 65 – 69 | 2 | 7.69% |
| 4 | 70 – 74 | 9 | 34.62% |
| 5 | 75 – 79 | 7 | 26.92% |
| 6 | 80 – 84 | 4 | 15.38% |
| 7 | 85 – 89 | 1 | 3.85% |
| $i = 6$ | | 26 | 100% |

From the table above, the students' score in class interval between 55 – 59 was 1 students (3.85%), class interval between 60 – 64 was 2 students (7.69%), class interval between 65 – 69 was 2 students (7.69%), class interval between 70 – 74 was 9 students (34.62%), class interval between 75 – 79 was 7 students (26.92 %), interval between 80 – 84 was 4 students (15.38 %), and the last class interval between 85 – 89 was 1 student (3.85%).

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

**Figure 5: Description Data Post-Test of Control Class**
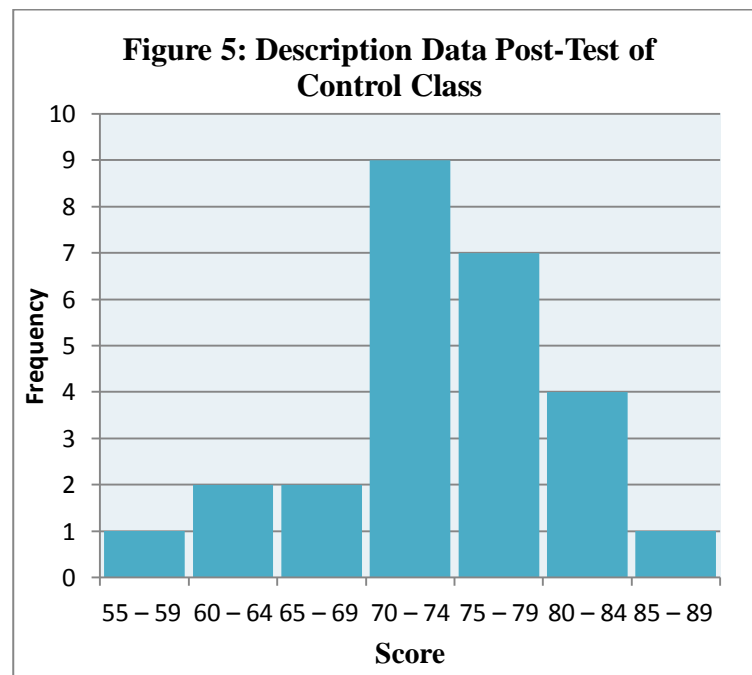


From the histogram of students' score of control class in post test shown that the lowest interval 55 – 59 was 1 student and highest interval 85 – 89 was 1 student. Histogram also shown that the highest frequency in interval 70 – 74 was 9 students.

3. **Description of Comparison Score of Pre-Test and Post-Test**

a. **Comparison Score of Pre-Test and Post-Test in Experimental Class**

The comparison score between pre-test and post-test of experimental class can bee seen in the following table:

**Table 14**
**The Comparison Data of Experimental Class**
**in Pre-test and Post-Test**

| Description | Pre-Test | Post-Test |
|---|---|---|
| Total | 890 | 1940 |
| Highest score | 70 | 95 |
| Lowest score | 15 | 60 |

| | | |
|---|---|---|
| Mean | 37.68 | 74.68 |
| Median | 35.87 | 73.18 |
| Modus | 36.46 | 72.7 |
| Range | 55 | 35 |
| Interval | 9 | 6 |
| Standard deviation | 15.48 | 9.48 |
| Variants | 285,38 | 55.84 |

Based on students' answers in experimental of pre-test and post-test, the researcher has calculated the students' score and most of students both of classes were low in reading. Experimental class consisted of 26 students (PI 2). The lowest score in pre-test was 15 whereas the highest score was 70 and the lowest score in post-test was 60 whereas the highest score was 95.

In order to get the pre-test and post-test data description of experimental class clearly and completely, the researcher presents the histogram on the following histogram :



Figure 6: Comparison between Pre-test and Post-test in Experimental Class
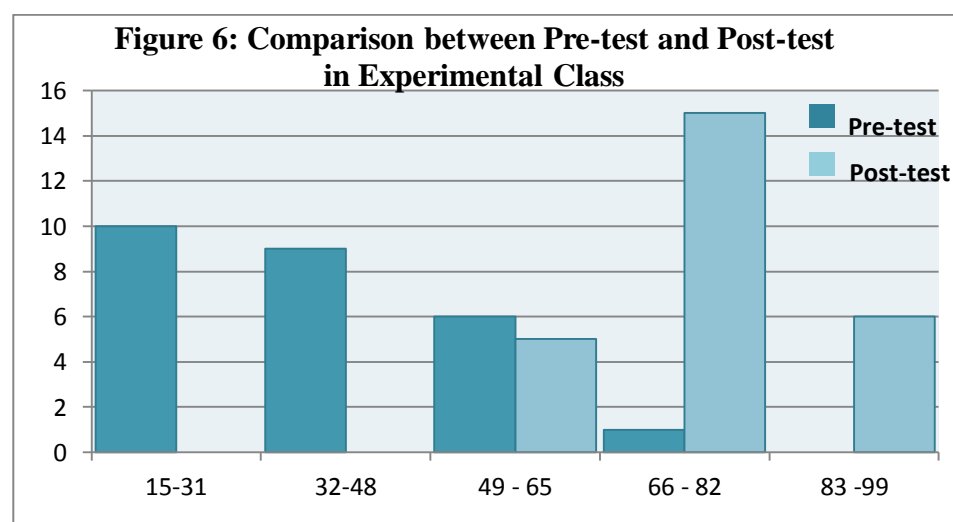
From the histogram above, Pre-test frequency of students' score from 15 up to 31 was 10; 32 up to 48 was 9; 49 up to 65 was 6; and 66 up to 82 was 1 student. In post-test, the frequency of students' score from 49 up to 65 was 5; 66 up to 82 was 15; and 83 up to 99 was 6 students. The histogram shows that the highest interval (83 – 99) was 6 students and the lowest interval (15 – 31) was 10 students. So the students' scores of experimental class in post-test was higher than pos test.

b. **Comparison Score of Pre-test and Post Test in Control Class**

The comparison score between pre-test and post-test of experimental class can bee seen in the following table:

**Table 15**
**The Comparison Data of Control Class**
**in Pre-test and Post-Test**

| Description | Pre-Test | Post-Test |
|---|---|---|
| Total | 980 | 1835 |
| Highest score | 70 | 85 |
| Lowest score | 15 | 55 |
| Mean | 36.01 | 71.45 |
| Median | 37 | 73.9 |
| Modus | 37.27 | 73.35 |
| Range | 55 | 30 |
| Interval | 9 | 5 |
| Standard deviation | 14.13 | 6.6 |
| Variants | 198,46 | 46.65 |

Based on students' answers in control class of pre-test and post-test has calculated the students' score and most of students both of classes were low in reading. Control class consisted of 20 students (XI

PI 1). The lowest score in pre-test was 15 whereas the highest score was 70 and the lowest score in post-test was 55 whereas the highest score was 85.

In order to get the pre-test and post-test data description of control class clearly and completely, the researcher presents the histogram on the following histogram :



**Figure 7: Comparison between Pre-test and Post-test in Control Class**
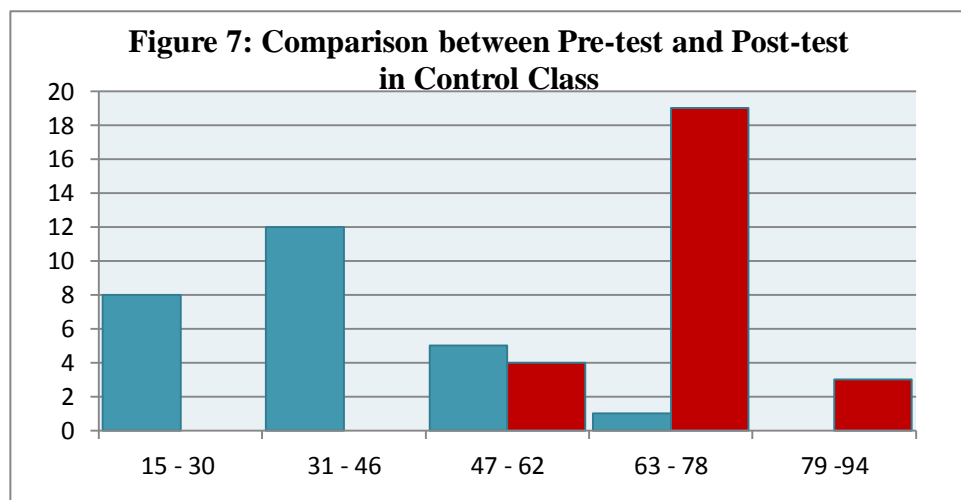
From the histogram above, Post-test frequency of students' score from 15 up to 30 was 8; 31 up to 46 was 12; 47 up to 62 was 5; and 63 up to 78 was 1 student. In post-test, the frequency of students' score from 47 up to 62 was 4; 63 up to 78 was 19; and 79 up to 94 was 3 students.

c. **Comparison between Experimental and Control Class in Post-Test**

Based on students' answers in post-test in experimental and control class, the researcher has calculated the students' score and most of students both of classes increased. Experimental class consisted of 20 students (XI PI 2), the lowest score was 60 whereas the highest

score was 95. Then, most of students got raising score and their score increased very significant. Control class consisted of 20 students (XI PI 1), the lowest score was 55 whereas the highest score was 85. Studens' score increased too but not significant.

In order to get easier description of data, the researcher presented them in histogram. It can be seen on following histogram:



**Figure 8: Comparison between Experimental and Control Class in Post-test**
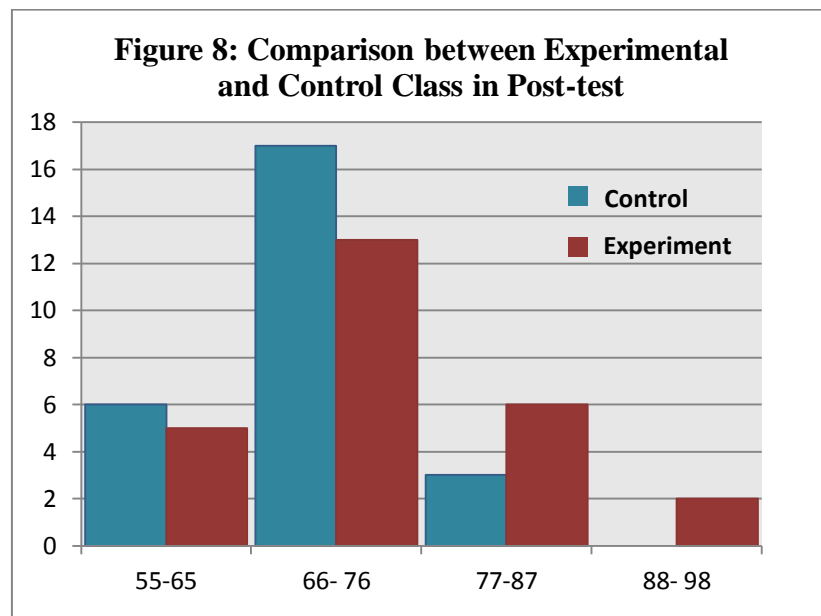
From histogram above, in experimental class, the frequency of students' score from 55 up to 65 was 5; 66 up to 76 was 13; 77 up to 87 was 6 and 88 up to 99 was 2 students. In control class, the frequency of students' score from 55 up to 65 was 6; 66 up to 76 was 17 and 77 up to 87 was 3.

B. **Technique of Data Analysis**

1. **Requirement Test**

   a. **Normality and Homogeneity Pre-Test**

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

Table 16
**Normality and Homogeneity in Pre-Test**

| Class | Normality Test | | Homogeneity Test | |
|---|---|---|---|---|
| | $x_{count}$ | $x_{table}$ | $f_{count}$ | $f_{table}$ |
| Experiment Class | -0.16 | 11.070 | | |
| Control Class | 1.21 | 11.070 | 1.43< 2.71 | |

Based on the above table researcher calculation, the score of experimental class Lo = -0.16 < Lt = 11.070 with n = 26 and control class Lo = 1.21 < Lt = 11.070 with n = 26, and real level $\alpha$ 0.05. Cause Lo< Lt in the both class. So, $H_a$ was accepted. It means that experimental class and control class were distributed normal. It can be seen in appendix 21.

2) **Homogeneity of Experimental Class and Controll class in Pre-Test**

The coefficient of $F_{count}$ = 1.43 was compared with $F_{table}$. Where $F_{table}$ was determined at real α 0.05, and the different numerator dk = n-1 = 26-1 = 25 and denominator dk n-1 = 26–1 = 25. So, by using the list of critical value at F distribution is got $F_{0.05}$ = 2.71. It showed that $F_{count}$ 1.43< $F_{table}$ 2.71. So, the researcher

concluded that the variant from the data of the Students' Reading comprehension at SMA Nurul Ilmi by experimental class and control class was homogenous. The calculation can be seen on the appendix 19.

b. **Normality and Homogeneity Post-Test**

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

**Table 17**
**Normality and Homogeneity in Post-Test**

| Class | Normality Test | | Homogeneity Test | |
|---|---|---|---|---|
| | $x_{count}$ | $x_{table}$ | $f_{count}$ | $f_{table}$ |
| ExperimentalClass | -0.29 | 11.070 | 1.19< 2.71 | |
| Control Class | -1.39 | 11.070 | | |

Based on the table above researcher calculation, the score of experiment class Lo = -0.29 < Lt = 11.070 with n = 26 and control class  Lo = -1.39< Lt = 11.070 with n = 26, and real level $\alpha$ 0.05. Cause Lo< Lt in the both class. So, $H_a$ was accepted. It means that experimental class and Control class were distributed normal. It can be seen in appendix 22.

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

The coefficient of $F_{count}$ = 1.19 was compared with $F_{table}$. Where $F_{table}$ was determined at real α 0.05, and the different numerator dk = n-1 = 26-1 = 25 and denominator dk n-1 = 26-1 =

25. So, by using the list of critical value at F distribution is got $F_{0.05}= 2.71$. It showed that $F_{count}$ 1.19< $F_{table}$ 2.71. So, the researcher concluded that the variant from the data of the Students' Reading comprehension at SMA Nurul Ilmi by experimental class and Control class  was homogenous. The calculation can be seen on the appendix 20.

2. **Hypothesis Test**

After calculating the data of post-test, researcher found that post-test result of experimental class 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 is significant effect of REAP Strategy to Students' Annalytical Exposition Text Comprehension at Grade XI SMA Swasta Nurul Ilmi Padangsidimpuan". Hyphotesis null (Ho) of the research was "There is no significant effect of REAP Strategy to Students' Annalytical Exposition Text Comprehension at Grade XI SMA Swasta Nurul Ilmi Padangsidimpuan". Ha is accepted if $t_{count}$ is higher than $t_{table}$. In this case, the researcher found that $t_{count} > t_{table}$ which means that there was significant effect of REAP Strategy to Students' Annalytical Exposition Text Comprehension at Grade XI SMA Swasta Nurul Ilmi Padangsidimpuan. The calculation can be seen on the appendix 24.

**Table 18**
**Result of T-test from the Both Averages**

| Pre-test | | Post-test | |
|---|---|---|---|
| $t_{count}$ | $t_{table}$ | $t_{count}$ | $t_{table}$ |
| 0.23 | 1.67591 | 4.34 | 1.67591 |

$H_a : \mu_1 > \mu_2$

Where:

$H_a : \mu_1 > \mu_2$ "There was significant effect of REAP Strategy to Annalytical Exposition Text Comprehension at Grade XI Students of SMA Swasta Nurul Ilmi Padangsidimpuan".

Based on researcher calculation, researcher found that $t_{count}$ 4.34 while $t_{table}$ 1.67591with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and dk = $n_1 + n_2 - 2 = 26 + 26 - 2 = 50$. Cause $t_{count} > t_{table}$ (4.34>1.67591), it means that hypothesis $H_a$ was accepted and $H_0$ was rejected. So, there was significant effect of REAP Strategy to Annalytical Exposition Text Comprehension at Grade XI Students of SMA Swasta Nurul Ilmi Padangsidimpuan.

## C. Discussion

Based on the result of this research, the researcher has proved what had been stated by Eanet & Manzo[1] and Hoover[2] that REAP strategy can develop students to a greater understanding of writer's roles and improve their reading comprehension. Both theories stated that REAP is an appropriate strategy for reading comprehension, and in this research, the researcher found that the mean score of students' reading comprehension

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[1] Anthony V Manzo and Ula Casale Manzo, *Content Area Reading, A Heuristic Approach* (Ohio: Columbus Merrill Publishing Company, 1990), p.221.
[2] Rutela Renette, "Using REAP ( Read , Encode , Annotate , Ponder ) In Teaching Reading" 4 (2016): p.280, http://ejournal.unp.ac.id/index.php/selt/article/download/6986/5520.

before using REAP was 37.68 and after using REAP was 74.68. It meant there was the effect of REAP on reading comprehension.

The result above supported the previous research by some researchers. First, Fanny Dwi Pratiwi[3] on her thesis she got mean score was 76.6 after applying REAP Strategy and the mean score for pre-test was 70.24. Next, Amaliatul Khoriah[4] on her thesis got the pre-test mean score was 75 and post-test mean score was 95. Then, Novilismanita et al[5] on their journal got the pre-test score was 66.63 and post-test mean score was 73.73.

Meanwhile, the researcher got the mean score of pre-test of the experimental class was 37.68. The mean score of pre-test result' was lower than Fanny, Amaliatul Khoiriah and Novilismanita et al's result. From the above description, it can be seen that the highest mean score of pre-test of the experimental group was gotten by the Amaliatul Khoriah where the mean score of pre-test was 75 and the lowest mean score of pre-test of the experimental group was gotten by the researcher on this thesis where the mean score of pre-test was 37.68.

Then, for the post-test result the researcher got the mean score of post-test of the experimental class was 74.68. The mean score of pre-test result'

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[3] Fanny Dwi Pratiwi, "The Effect Of Using Read Encode Annotate And Ponder (Reap) Strategy Toward Reading Comprehension In News Item Text Of The First Year Student At State Islamic Senior High Schoo Dumai," 2012.

[4] Amaliatul Khoiriah, "The Effetiveness of Read, Encode, Annotate, Ponder (REAP) Strategy Toward Student's Reading Comprehension On Exposition Text (An Experimental Research At The Eleventh Grade Students Of Islamic Senior High School Mathla'ul Anwar Menes Center In The Academi," 2017, http://repository.uinbanten.ac.id/1503/1/AMALIATUL KHOIRIYAH 132301412.pdf.

[5] Erni Novilismanita, Atni Prawati, "The Effect Of Using Reap (Read, Encode, Annotate, Ponder) Strategy On Reading Comprehension Of Narrative Text Of The First Year Students Of Sman 1 Tebing Tinggi Timur Meranti," 2017, 1–10.

was lower than Fanny and Amaliatul Khoiriah's result and was higher than Novilismanita et al's result. From the above description, it can be seen that the highest mean score of post-test of the experimental group was gotten by the Amaliatul Khoriah where the mean score of post-test was 95 and the lowest mean score of pre-test of the experimental group was gotten by Novilismanita where the mean score of post-test was 73.73

From the above explanation, there was the increasing from the pre-test score to post-test score after using the strategies among the related findings. Fanny Dwi Pratiwi got the increasing 6.36, Amaliatul Khoriah got the increasing 20, and Novilismanita et al got the increasing 7.1. Meanwhile the researcher got the increasing was 37.

Based on the result, the researcher has got the effect of REAP strategy strategy on students' reading comprehension. Fanny Dwi Pratiwi, found that $t_{count}= 2.68 > t_{table=} 2.01$. Amaliatul Khoriah found that that $t_0$ is higher than $t_t$ where $t_t 5.18 > 2.02 t_0$. Novilismanita et al found $t_{count}= 7.051 > t_{table=} 2.023$. The researcher also found that $t_0$ is higher than $t_t$ where $t_0$ was 1.67591 and $t_t$ was 4.34 (4.34 > 1.67591). It can be seen among the researches that the using of Read, Encode, Annotate and Ponder gave the effect to students' reading comprehension especially at grade XI Students of SMA Swasta Nurul Ilmi Padangsidimpuan. It means the theory has been proved where the students able to comprehend the reading material. Therefore, REAP has given the significant effect to the research that has been done by the researcher or the other researcher who mentioned in related finding and REAP strategy is

highly effective to help the English teacher in teaching learning process especially in reading comprehension.

## 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 were 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.

3. The students were mot enthusiastic in discussing the text. It made them didn't follow the rule of treatment when the teacher gives other text, the students feel confused to understand the whole text.

4. The learning implementation is not effective because of the limited time.

# CHAPTER V

# CONCLUSION AND SUGGESTION

## A. Conclusion

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

1. Students' reading comprehension at grade XI SMA Swasta Nurul Ilmi Padagsidimpuan before using Read, Encode, Annotate and Ponder (REAP) strategy were still low. It can be seen from the students' mean score of pre-test was 37.68 in experimental class and 36.01 in control class.

2. The students' ability of the grade XI students at SMA Swasta Nurul Ilmi Padangsdimpuan in comprehending Exposition text reading text by using Read, Encode, Annotate, and Ponder (REAP) strategy had higher score. It can be seen from the students' score of post-test, the higher score of post-test using REAP strategy (experiment class) is 95 and the lowest score is 60.

3. It is found that $t_{count}$ was higher than $t_{table}$ 4.34 > 1.67591 which means $H_a$ was accepted. Hence, there was significant effect of using Read, Encode, Annotate, and Ponder (REAP) strategy to comprehend analytical exposition text at the grade XI students of SMA Swasta Nurul Ilmi Padangsidimpuan.

**B. Suggestion**

The researcher got many informations in English teaching and learning after finishing this research. From this research, researcher saw some things need to be improved. It makes the researcher give some suggestions, as follow:

1. For the English teacher, it is hoped to use Read, Encode, Annotate and Ponder (REAP) strategy in teaching reading. This research and others proved that REAP strategy was effective to be applied in classroom.

2. For the students, it is hoped to use Read, Encode, Annotate and Ponder (REAP) strategy because it can make them to be able to comprehend the text.

3. For the next researcher, this research can help the other researcher who will conduct further research in the same topic. The other researcher can get the information from this experimental research, even do a comparison between this research and another with the similar variable.

4. For the English lecturer, it is hoped to teach this strategy so that the university students who will become teachers can apply this strategy while they are teaching reading.

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**CURRICULUM VITAE**

## A. Identity

1. Name : Miranti
2. NIM : 15 203 00054
3. Place and Birthday : Hutabalang, may 23$^{th}$, 1997
4. Gender : Female
5. Religion : Islam
6. Address : Ling. IX Hutabalang, Kecamatan Badiri, Tapanuli Tengah Sibolga.
7. Phone Number : 0823 6629 9102
8. Email : mirantioppo1234@gmail.com

## B. Parent

1. Father's name : Sujianto
2. Mother's name : Juariah

## C. Educational Background

1. Elementary School : SD N 157625 (2009)
2. Junior High School : SMPN 1 Badiri (2012)
3. Senior High School : SMA N 1 Sibolga (2015)
4. College : IAIN Padangsidimpuan (2019)

## D. Achievement

1. 2016 : 1st winner of English Speech Contest in IAIN Padangsidimpuan
2. 2017 : Debate Competition (PTKIN PIONIR) in Banda Aceh
3. 2017 : Founder of CEAS
4. 2018 : SEADC Debate Competition in UMY (Universitas Muhammadiyah Yogyakarta)
5. 2019 : Camp EPIC Pre-Service English Teacher by RELO US.Embassy in Nusa Dua, Bali.

### RENCANA PELAKSANAAN PEMBELAJARAN (RPP)

NamaSekolah          : SMA Swasta Nurul Ilmi Padangsidimpuan
Mata Pelajaran         : Bahasa Inggris
Kelas/Semester        : XI / 2
Materi Pokok           : Analytical Exposition Text
Alokasi Waktu         :  4 x 45 menit (2 kali pertemuan)

A. KompetensiInti    :
- ❖ KI 1    : Menghayati dan mengamalkan  ajaran agama yang dianutnya
- ❖ KI2    :  Menghayati dan mengamalkan perilaku jujur, disiplin, tanggungjawab, peduli (gotong royong, kerjasama, toleran, damai), santun, responsif dan pro-aktif  dan menunjukan sikap sebagai bagian dari solusi atas berbagai permasalahan dalam berinteraksi secara efektif dengan lingkungan sosial dan alam serta dalam menempatkan diri sebagai cerminan bangsa dalam pergaulan dunia
- ❖ KI 3 : Memahami, menerapkan, menganalisis pengetahuan faktual, konseptual, prosedural berdasarkan rasa ingin tahunya tentang ilmu pengetahuan,teknologi,seni,  budaya, dan humaniora dengan wawasan kemanusiaan,  kebangsaan, kenegaraan, dan peradaban terkait penyebab fenomena dan kejadian, sertamenerapkan pengetahuan prosedural pada bidang kajian yang spesifik sesuai
  dengan bakat dan minatnya untuk memecahkan masalah.
- ❖ KI 4 : Mengolah, menalar,  dan menyaji  dalam ranah konkret dan ranah abstrakterkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, dan mampu  menggunakan metoda sesuai kaidah keilmuan

B. KompetensiDasar:

1.1 Mensyukuri kesempatan dapat mempelajari bahasa Inggris sebagai bahasa pengantar komunikasi International yang diwujudkan dalam semangat belajar

2.3 Menunjukkan perilaku tanggung jawab, peduli, kerjasama, dan cinta damai, dalam melaksanakan komunikasi fungsional

3.10 Menganalisis fungsi sosial, struktur teks, dan unsur kebahasaan dari teks eksposisi analitis tentang topik yang hangat dibicarakan umum, sesuai dengan konteks penggunaannya.

4.14 Menangkap makna dalam teks eksposisi analitis tentang topik yang hangat dibicarakan umum

C. Indikator :

3.8.1. Mengidentifikasi fungsi sosial, struktur teks, dan unsur kebahasaan dari teks eksposisi analitis

3.8.2. Menemukan informasi rinci dari teks eksposisi analitis

3.8.3. menemukan makna kata dari teks teks eksposisi analitis

D. Strategi Pembelajaran : Discussion Strategy

E. Materi :
- Teks eksposisi analitis
- Fungsi sosial : Menyatakan pendapat tentang topik yang hangat dibicarakan secara bertanggung jawab
- Struktur Teks :

  a. Menyebutkan pokok permasalahan terhadap sesuatu yang hangat dibicarakan

  b. Menyebutkan pandangan / pendapat mengenai hal tersebut beserta ilustrasi sebagai pendukung

  c. Diakhiri dengan kesimpulan yang menyatakan kembali pendapat terhadap hal tersebut

- Unsur Kebahasaan :
  a. Kalimat Simple Present
  b. Conditional Clauses
  c. Modals

F. KegiatanPembelajaran :

1) KegiatanPendahuluan
   ➢ Greeting, praying and checking the students' readiness *(PPK)*
   ➢ warmer up untuk menstimulus semangat siswa sebelum memulai pelajaran
   ➢ Apersepsi : Memberi pertanyaan sebagai Brainstorming

2) KegiatanInti

   *Stimulation* (simullasi/Pemberian rangsangan)
   ➢ Guru menampilkan gambar yang berhubungan dengan analytical expsition text

   *Problem statement* (pertanyaan/identifikasi masalah)
   ➢ Guru meminta siswa mengamati gambar (*Creative)*
   ➢ Guru menjelaskan secara umum tentang gambar
   ➢ Guru menjelaskan eksposition text

   *Data collection* (pengumpulan data)
   ➢ Guru membagi siswa dalam beberapa kelompok

*Data processing* (pengolahan Data)

➢ Guru membimbing siswa untuk melakukan tahapan REAP strategy

➢ Siswa membaca teks esposisi analitis dan mencari ide pokok dari teks (Read)

➢ Guru mengarahkan siswa untuk mengeksplorasi ide atau pemahaman mereka tentang teks eksposisi kedalam kata-kata mereka sendiri dan mencatat kosa kata yang sulit (Encode)

➢ Siswa menuliskan pemahaman mereka tentang isi teks eksposisi per paragraph atau per struktur teks kedalam kata-kata sendiri (Annotate)

➢ Siswa bersama kelompok mendiskusikan hasil pemahaman mereka tentang teks eksposisi kemudian membuat ringkasan dan mempersentasikan hasil diskusi (Ponder)

*Verification* (pembuktian)

➢ Guru memberi konfirmasi tentang hasil penyajian siswa

*Generalization* (menarik kesimpulan)

➢ Guru menyimpulkan materi dan memberikan ulasan

3) Kegiatan Penutup

➢ Memberikan penilaian berupa latihan-latihan untuk mengetahui sejauhmana kemampuan siswa

➢ Memberikan motivasi kepada siswa yang kurang dan belum bisa mengikuti dalam materi

➢ Guru menutup pelajaran dengan doa dan salam

G. Media :

Laptop, Buku yang relevan, Dictionary, Gambar,white board,board marker.

H. Sumber :

▪ Buku Bahasa Inggris Departemen Pendidikan dan Kebudayaan

▪ internet

▪ Suara guru

I. Penilaian:

| Indicator PencapaianKompetensi | Teknik Penilaian | Bentuk Instru-ment | Instrument Soal |
|---|---|---|---|
| 1. Mengidentifikasi gagasan utama dalam teks eksposisi<br>2. Memahami informasi rinci | | | Read the text carefully |

| | | Pilihan | and then |
|---|---|---|---|
| 3. Memahami informasi tertentu dalam teks eksposisi | Tes Tulisan | Ganda | choose the correct answer based on the text by crossing a, b, c, or d! |
| 4. Memahami makna kalimat atau kata dalam teks eksposisi | | | |

a. Pedoman penilaian :Jumlah skor maksimal keseluruhan adalah 100. Setiap jawaban yang benar di beriskor 5. Jumlah skor keseluruhan 5×20=100.(Tes Tertulis).

*Learning Material*

## EXPOSITION TEXT

1. **Definition of Analytical Exposition Text**

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   **c)** Reiteration : the last part of analysis. It funvtions to provide re-statement of the writers' position.

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   The language features on analytical exposition text are :

   a. Use simple present tense

   b. Use relational process such as first,second, etc.

   c. Use descriptive persuasive words with emotive connotations to emphasize your viewpoint

   d. Use mental verb such as such as *I believe; I prefer; I agree; I doubt; I disagree*

   e. Use causal conjunction to indicate cause or reason of what is being stated.

## 4. Exposition Text

### Banning of Motorbikes is Necesssary In Housing Areas

Motorbikes are a nuisance and a cause for great distress. Even motorbikes or considered as the most convenient from of transportation, I think they are a hazard to humans, animals, as well as the environment. I think motorbikes should be banned in housing areas due to the following reasons: cause of unreasonable amount of noise, air pollution, diseases, and accidents.

First of all, I would like to point out that motorbikes are major contributors to the pollution in the world. Research has shown that motorbikes emit a deadly gas that is dangerous for environment. Consequently, long-term emission of gas from motorbikes is a major contributor of global warming (science daily).

Secondly, according to report from BBC News Channel, motorbikes are also responsible for causing diseases such as bronchitis, cancer, and are a major trigger of asthma and high blood pressure. Some of the diseases are so gastly that they can kill people (BBC News, 2009).

Furthermore, motorbikes create so much noise. There is "Vroom Vroom" noise everywhere. It is extremely difficult to sleep parents with infants find it extremely challenging. The moment their babies fall asleep, one or other motorbike passes by and the baby wakes up. It is also arduous for children to concentrate on their homework. Expert are of opinion that if there is extreme noise, It can lead to deafness and lack of concentration in children and adults (field, 1993).

Finally motorbikes are responsible for horrible accidents. In some cases there are deaths. Motorbikes riders go so fast that they are unable to stop on time thus they and up hitting other people or animals. Many a time lot of animals are trampled and found death and road. Motorbikes are known to be the biggest killers on road (field, 1993).

In conclusion, from the argumants above, I strongly believe that motorbikes should be banned from housing areas.

**Mengetahui,**

English Teacher                                                                    Researcher

**Nirwan Efendi Lubis, S.Pd**                                          **Miranti**
**NIP. 197203252006041007**                                    **NIM. 15 203 00054**

**RENCANA PELAKSANAAN PEMBELAJARAN (RPP)**

NamaSekolah          : SMA Swasta Nurul Ilmi Padangsidimpuan
Mata Pelajaran       : Bahasa Inggris
Kelas/Semester       : XI / 2
Materi Pokok         : Analytical Exposition Text
Alokasi Waktu        : 4 x 45 menit (2 pertemuan)

J.  KompetensiInti   :
    ❖ KI 1    : Menghayati dan mengamalkan  ajaran agama yang dianutnya
    ❖ KI2     : Menghayati dan mengamalkan perilaku jujur, disiplin, tanggungjawab, peduli (gotong royong, kerjasama, toleran, damai), santun, responsif dan pro-aktif  dan menunjukan sikap sebagai bagian dari solusi atas berbagai permasalahan dalam berinteraksi secara efektif dengan lingkungan sosial dan alam serta dalam menempatkan diri sebagai cerminan bangsa dalam pergaulan dunia
    ❖ KI 3 : Memahami, menerapkan, menganalisis pengetahuan faktual, konseptual, prosedural berdasarkan rasa ingin tahunya tentang ilmu pengetahuan,teknologi,seni, budaya, dan humaniora dengan wawasan kemanusiaan,  kebangsaan, kenegaraan, dan peradaban terkait penyebab fenomena dan kejadian, sertamenerapkan pengetahuan prosedural pada bidang kajian yang spesifik sesuai
    dengan bakat dan minatnya untuk memecahkan masalah.
    ❖ KI 4 : Mengolah, menalar,  dan menyaji  dalam ranah konkret dan ranah abstrakterkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, dan mampu  menggunakan metoda sesuai kaidah keilmuan
K.  KompetensiDasar:
    1.2 Mensyukuri kesempatan dapat mempelajari bahasa Inggris sebagai bahasa pengantar komunikasi International yang diwujudkan dalam semangat belajar

    2.3 Menunjukkan perilaku tanggung jawab, peduli, kerjasama, dan cinta damai, dalam melaksanakan komunikasi fungsional

    3.10 Menganalisis fungsi sosial, struktur teks, dan unsur kebahasaan dari teks eksposisi analitis tentang topik yang hangat dibicarakan umum, sesuai dengan konteks penggunaannya.

4.14 Menangkap makna dalam teks eksposisi analitis tentang topik yang hangat dibicarakan umum

L. Indikator :

3.8.1. Mengidentifikasi fungsi sosial, struktur teks, dan unsur kebahasaan dari teks eksposisi analitis

3.8.2. Menemukan informasi rinci dari teks eksposisi analitis

3.8.3. menemukan makna kata dari teks teks eksposisi analitis

M. Strategi Pembelajaran : Discussion Strategy

N. Materi :
- Teks eksposisi analitis
- Fungsi sosial : Menyatakan pendapat tentang topik yang hangat dibicarakan secara bertanggung jawab
- Struktur Teks :
  a. Menyebutkan pokok permasalahan terhadap sesuatu yang hangat dibicarakan
  b. Menyebutkan pandangan / pendapat mengenai hal tersebut beserta ilustrasi sebagai pendukung
  c. Diakhiri dengan kesimpulan yang menyatakan kembali pendapat terhadap hal tersebut
- Unsur Kebahasaan :
  d. Kalimat Simple Present
  e. Conditional Clauses
  f. Modals

O. KegiatanPembelajaran :

Pertemuan 1

4) Kegiatan Pendahuluan
  ➤ Greeting, praying and checking the students' readiness *(PPK)*
  ➤ Warmer up untuk menstimulus semangat siswa sebelum memulai pelajaran
  ➤ Apersepsi : Tanya jawab mengenai teks eksposition teks terkait dengan mata pelajaran di Kelas XI.

5) Kegiatan Inti
  ➤ Guru mendiskusikan mengenai topik pembelajaran bersama murid
  *Data collection* (pengumpulan data)
  ➤ Guru membagikan teks eksposisi
  Data processing (pengolahan Data)
  ➤ Siswa membaca teks esposisi analitis dan mencatat kosa kata sulit
  ➤ Siswa mencoba memahami teks eksposisi analitis bersama teman sebangkunya

*Verification* (pembuktian)
➢ Guru memberi konfirmasi tentang hasil penyajian siswa
*Generalization* (menarik kesimpulan)
➢ Guru menyimpulkan materi dan memberikan ulasan
6) Kegiatan Penutup
➢ Memberikan penilaian berupa latihan-latihan untuk mengetahui sejauh mana kemampuan siswa
➢ Memberikan motivasi kepada siswa yang kurang dan belum bisa mengikuti dalam materi
➢ Guru menutup pelajaran dengan doa dan salam

P. Media : Buku yang relevan, Dictionary, Papan tulis, Spidol dan Penghapus
Q. Sumber :
  ▪ Buku Bahasa Inggris Departemen Pendidikan dan Kebudayaan
  ▪ internet
  ▪ Suara guru
R. Penilaian:

| Indicator PencapaianKompetensi | Teknik Penilaian | Bentuk Instru-ment | Instrument Soal |
|---|---|---|---|
| 5. Mengidentifikasi gagasan utama dalam teks eksposisi<br>6. Memahami informasi rinci dalam teks eksposisi<br>7. Memahami informasi tertentu dalam teks eksposisi<br>8. Memahami makna kalimat atau kata dalam teks eksposisi | Tes Tulisan | Pilihan Ganda | Read the text carefully and then choose the correct answer based on the text by crossing a, b, c, or d! |

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**Instrument for Pre-Test after Validity**

**Nama :**

**Kelas :**

**Instruction: Choose the correct answer by crossing (X) a, b, c, or d!**
**Choose the correct answer by crossing A, B, C, D, or E. The following text is**
**for questions 1 to 4.**

> The use of formalin and other dangerous preservatives in food has been serious problem for three reasons. Firstly, formalin is not for human beings, but it is for biological specimens and experiments. Formalin in Biology is a 10% solution of formaldehyde in water which is usually used as a disinfectant or to preserve biological specimens. Thus, it is not for food preservatives. Of course when it is used for food preservative, it will be very dangerous to human's body.
>
> The second reason is that there is no tight control from the government. This condition makes the people's health is really in a threat. When the control is weak and the use formalin was spread wide all over the Indonesian regions, and these days it has really happened, the citizen's bodies will be badly contaminated with the poisons. Fish or food traders still sell their products which contain formalin and dangerous preservatives. Can you imagine that our digestive system absorbs the substance that should be for the human and animal corpses?
>
> Considering the reasons, we can make a conclusion that the use of formalin and other preservatives is really a serious problem if it is not resolved immediately.

1. Why is formalin dangerous for human`s body?
   a. It is not food preservatives
   b. It is a disinfectant for human beings
   c. It is used to preserve biological specimens
   d. It is 10% solution of formaldehyde in water
   e. It is controlled flighty from the government

2. The main idea of paragraph two is
   a. The human`s bodies will be harmful after consuming the formalin
   b. The government has not controlled the use of formalin firmly
   c. The weak control of using formalin is not threatening the human
   d. The human`s bodies will be harmful after consuming the formalin
   e. The use of formalin is known all over the regions

3. Based on the facts above, the writer suggest that

a. People have to avoid consuming formalin in their food
b. The use of formal dehyde is necessary to control the food
c. People should add 100% solution of formaldehyde in water
d. The food preservative is required to make the food delicious
e. Food seller is supposed to pour formalin for vegetables and food products

4. "This condition makes the people's health is really in a <u>threat</u>" the synonim of the underline word is...
    a. Certainty  b.Surety      c. Danger     d. Challenge  e. Safety

**Read the following text to answer questions number 5 to 8**

Even though many people think that national activities are usually concentrated in big cities, village people can still receive information, education and entertainment through television. Take the national and the world news for example. These programs generally give its viewers the latest information on national and international events. By watching news programs, village people can keep abreast of what's happening on the other side of the world. Other programs featuring the animal kingdom, farm life, cultural events, and health issues educate the villagers on various aspects of life. These programs can certainly broaden their horizons and hopefully give them fresh ideas on how to improve their standard of living.

Programs such as music, film series, quizzes, and dance shows with their entertaining nature provide visual enjoyment. Relaxing at home while enjoying free entertainment is something villagers usually look forward to after a day of hard work. So, television really offers a lot of benefits to villagers. It gives them access to information, education, and entertainment, thus widening their horizons.

5. What is the topic of the text?
    a. Progress of television programs for villagers
    b. Kinds of television programs for people in village
    c. Watching television is interesting for villagers
    d. Television's programs concentrated in big cities
    e. Benefit of television programs for villagers

6. Which ones are included to educational programs of television for villagers?
    a. animal kingdom, farm life and culture event
    b. national and world news of events
    c. film series, quizzes and dance shows
    d. national news of event and dance shows
    e. film series and world news of events

7. Television really provides many advantages to the villagers because.....
    a. it can broaden people's knowledge and horizons in big cities

b.  it gives visual enjoyment through its educational programs

c.  it can give them information, education and entertainment

d.  it gives fresh ideas of how to improve standard of life through its quizzes

e.  it gives only free entertainment for villagers after a day of hard work

8.  village people can still <u>receive</u> information, education and entertainment through television." The underlined word is closely in meaning with ….

a.  Acquire    c.  Produce    e.  deny

b.  change    d.  Publish

**Read the following text to answer questions number 9 to 11**

Conventionally, students need book, pen, eraser, drawing book, ruler and such other stuff. Additionally, in this multimedia era, students need more to reach their progressive development. Students need mobile keyboards to record every presented subject easily. Of course, it will need more cost but it will deserve for its function.

First, modern schools tend to apply fast transferring knowledge because the school needs to catch the target of the curriculum. Every subject will tend to be given in demonstrative method. Consequently, students need extra media cover the subject. Since there is a laptop on every student's desk, this method will help a student to get a better understanding.

Secondly, finding an appropriate laptop is not difficult as it was. Recently there is an online shop which provides comprehensive information. The best is that the shop has service of online shopping. The students just need to browse that online shop, decide which computer or laptop they need and then complete the transaction. After that, the laptop will be delivered to the students' houses. That is really easy and save time and money.

From all of that, having a mobile computer is absolutely useful for students who want to catch the best result for their study. Buying laptop online is advisable because it will cut the price.

This online way is recommended since online shop also provides several laptop types. Students just need to decide which type they really need.

9.  What is the main idea of the third paragraph?

a.  the laptop will be delivered to the students' houses

b.  finding an appropriate laptop is easy

c.  there is an online shop which provides comprehensive information

d.  the students just need to browse online shop

e.  buying laptop in online shop is difficult

10.  Which of the following is NOT TRUE based on the text above?

a.  students need laptop to reach their progressive development

b.  there is an online shop which provides comprehensive information

c.  finding an appropriate laptop is difficult

d. buying mobile computer online is recommended

e. students can buy laptop at online shop

11. The word advisable in the last paragraph has the same meaning with …..

a. recommended   B. important   C. cheap   D. unwise   E.Easy

**The following text is for questions 12 to 14.**

Nowadays, the police have been applying the new regulation concerning the use of seat belts. In European countries, this regulation has been applied for a long time. However, this new regulation has become controversial and is an interesting topic to discuss. Here are some of the arguments.

The use of seat belts has been proven to reduce the risk of injury or death in an accident. Seat belt has become a standard component in cars. The research shows that most car accident will cause an injury to the head. Frequently, drivers or the passengers driving without seat belts die because of this. By wearing the seat belts, the injury will not happen since belts restrain our body on the car seat when the accident happens.

Unfortunately, many cars, especially the old ones, don't have seat belts. This is because the traffic conditions in the past were unlike the recent traffic conditions. The designer of old cars didn't consider a seat belt as an important part. Besides, the drivers wearing the seat belt will think that they are completely safe, so they may drive carelessly. They are safe, indeed, but how about safety of others?

The seat belt is only one of the ways to reduce the risk of car accidents. It doesn't mean that we are completely safe. In short, our safety depends on ourselves.

12. Which one is true according to paragraph 3?

a. old cars do not use seat belts

b. the old cars have seat belts for their safety

c. the drivers wearing seat belts may drive carefully

d. the traffic conditions in the past were similar to the recent

e. the old cars' designer considered a seat belt as an important part

13. What is the function of seat belts?

a. reduce the traffic conditions

b. to become a standard component in cars

c. to reduce the risk of injury or death in an accident

d. to prevent the drivers driving cars carefully

e. to increase the risk of injury in car accidents

14. Who considered a seat belt as an unimportant part?

a. Police   b. People   c. Drivers   d. Passengers   e.old cars designers

**Read the following text to answer questions number 15 to 17**

The popularity of mobile devices has had some dangerous consequences. We know that mobile communications are linked to a significant increase in distracted driving which results in injury and loss of life.

The National Highway Traffic Safety Administration reported that in 2010 driver distraction was the cause of 18 percent of all fatal crashes with 3,092 people killed and crashes resulting in an injury 416,000 people wounded.

The Virginia Tech Transportation Institute found that text messaging creates a crash risk 23 times worse than driving while not distracted.

Eleven percent of drivers aged 18 to 20 who were involved in an automobile accident and survived admitted they were sending or receiving texts when they crashed. Distracted driving endangers life and property and the current levels of injury and loss are unacceptable.

15. What is the main idea of the passage?
   a. The warning of texting and driving.
   b. The debatable issue of texting and driving.
   c. The involvement of mobile devices while driving.
   d. The risks of texting while driving.
   e. The consequences of not paying attention traffic.

16. What does the passage tell us about the writer's opinion on the issue at hand?
   a. Text messaging creates more risk than undistracted driving.
   b. Mobile communication doesn't have relation with accident.
   c. Many people lost their live because of injury.
   d. Distracted driving is still safe for the drivers.
   e. Only adult drivers involved in the accident.

17. From the text, we know that ...
   a. The mobile phone should be banned in the street.
   b. Distracted driving makes accident more rarely to happen.
   c. Most of the accident caused by the condition of the road.
   d. 18 percent of fatal crashes were caused by unnoticed street signs.
   e. Drivers involved in car accidents admitted they were texting when they crashed.

**The following text is for questions 18 to 20.**

To improve comfort and cleanliness at our school, a number of dust bins should be increased.

When we look at classrooms, school corridors and school yard, there are paper mineral water cups, straws, and napkins here and there. The condition of uncleanliness and discomfort really hinders learning and teaching environment. Litters thrown carelessly cause disease, especially empty plastic cup or glasses. They can be filled out with water coming from the rain. This can be placed for dengue mosquitoes to spread out. Besides, these rubbish can deteriorate the scene. Well painted wall and green school yard do not mean anything litters are scattered everywhere.

Anyway I notice that most of the students in our school have responsibilities for the school environment. They put their litters on the proper places. But some are not diligent enough to find the dust bins. The numbers of dust binds in our schools are not enough. Ore dust bins should be put beside each of steps, outside of the classrooms, and some more also the corridors. Probably one dust bin should be in every ten meters. So when students want to throw away their litters, they can find the dust bins easily.

When school is equipped with sufficient dust bins, we do not have problems of freak and discomfort any more. Our school will be very clean and become a nice place to study.

18. What is the writer's argument on a sufficient number of dust bins?
    a. They can prevent litters
    b. They can save janitor's energy
    c. Students are asked to clean them
    d. They make school environment neat
    e. Students can throw garbage away easily

19. What is the writer's suggestion?
    a. To buy more dustbins
    b. To hire more gardeners
    c.  To use dustbins efficiently
    d. To ask parents to give more dustbins
    e. To ask students to clean the school yard

20. "Anyway I notice that most of the students in our school..." the word notice have similiar meaning with....
    a. See        b. Hear        c. Ignore        d. Respond      e. Attend

**Instrument for Post-Test after Validity**

**Nama** :

**Kelas** :

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

**Choose the correct answer by crossing A, B, C, D, or E. The following text is for questions 1 to 3.**

---

**Five Drinks to Help You Lose Wight**

There are many ways to lose wight. You can do sports regularly and eat nutritious food and drinks. One thing you should not forget is to make sure to consume healthy drinks. Soft drinks, fruit juices, and energy drinks that you often consume contain added sugars and carbohydrates that jeopardise your weight-loss strategy. Here are five drinks that won't add to your weight.

First, water is best weight loss drink. If you are bored with drinking pure water, you can try adding fresh lemon slices, lime, and cucumber, to add flavor but not calories.

second, vegetable juice provides you with the fibre and nutrients that your body needs to promote weight loss, as well as keep you full longer. Find vegetable that have low sodium levels.

Third, unsweetened tea. Green tea improves metabolism and accelerates weight loss. Black and oolong teas contain a lot of antioxidants, which can help clear your body of toxins.

Fourth, black coffee helps stimulate your weight loss as caffeine surpresses hunger when you drink it in the morning and afternoon. It also heats up the body and boosts metabolism.

Last, skimmed milk provides lean protein, vitamin D, and calcium that help you build muscles and keep your bones strong.

By choosing the right drinks, such as the five drinks mentioned, you can lose your weight and maintain your health.

---

1. What is the text about?
   A. Milk is not a good  drink for loosing weight.
   B. Black coffee helps to surpresses your hunger .
   C. Five drinks that can maintain your healthy life.
   D. You have to drink unsweetened tea for your diet program.
   E. Popular soft drinks, fruit juices, and energy drinks can be loaded with added sugars and carbohydrates.
2. Which of the following drinks is NOT mentioned in the text?
   A. Vegetable juice
   B. Skimmed milk

C. Mochachino

D. Oolong tea

E. Black tea

3. According to the text, what can you do if you are bored with drinking pure water?

A. You can replace it with soft drinks.

B. You can add sugar and green tea

C. You can add syrup to the water

D. You can add fresh lemon slices, lime, and cucumber to add flavor

E. You can add sugar and fresh lemon slices, lime, and cucumber, and a tomato.

4. "It also heats up the body and boosts metabolism." (paragraph 5)

What does the underlined word refer to?

A. Water             C. Carrot juice          E. Skimmed milk

B. Green tea          D. Black coffee

**The following text is for questions 4 to 6.**

**Tattoo and piercings**

Tattoo and body-piercings are very highly popular all over the worrld. Celebrities often get tattoos and piercings to look different and exceptional. However, tattoos and piercings should be banned, especially in younger generations, because they can affect health skin.

Although tattoos and body-piercing are highly popular, they still have negative connotations, as members of criminal groups like gangsters usually have special, group-related tattoos. Tattoos and body-piercing are also seen as sign of rebellion. This has led many countries to urge that underage youngsters should not be allowed to get piercings and tattoos. Tattoos can also cause skin complications such as allergy, infection, and keloids. They may even lead to MRI complications in the form of burning and swelling of the skin.

From the facts above, it can be concluded that young opeople should not get piercings and tattoos, at least not without parental consent.

5. According to the text above, which of the following sentences is NOT true?

A. Young people can't get tattoos and body- piercing without parental consent.

B. Gangsters and other criminal groups usually have tattoos and piercing

C. Governments advises young people to get piercing and tattoos

D. Celebrities like to have body piercing

E. Tattoos can affetc health and skin.

6. " ... they still have negative connotations, as members of criminal groups..." (paragraph 2) what is synonym of the underlined word?

A. Consequences           C. Impacts           E. Images

B. Meanings            D. Effects

7. "They may even lead to MRI complications..." (paragraph 2 )

What does the underlined word refer to?

A. Tattoos and body-piercing

B. Underage youngsters

C. Criminal groups

D. Celebrities

E. Tattoos

**The following text is for questions 8 to 10.**

For many youngsters, smooking might seem a cool thing to do. They might pick up the habit due to peer preasure and the need to fit in. As they become addicted, they might feel that it is their only way to unwind and overcome their problems.

However, smooking is a bad and even dangerous habit. It may cause a variety of diseases, not only respiratory but also pulmonary. It also increases the risk of other diseases such as cancers of the throat, mouth, nasal cavity, oesophagus, stomach, pancreas, kidney,bladder, and cervix, as well as acute myeloid leukaemia and erectile dysfunction.

Smooking not only affects physical health but also mental health. When a smoker feels anxious, he or she might smoke to get rid of the anxiety, which may increase the riskof anxiety symptomps in the long run. Alhtough people have claimed that nicotine in cigarettes can improve attention bad concentration, it is short-lived and cannot justify the habit.

From the reasons above, we can concludethat smooking is a bad habit that should be avoided.

8. According to the text above, why do young people decide to start smooking?

A. Because they think that it is only way to overcome their problems

B. Because they want to lose their concentration

C. Because they want to try it, even just once

D. Because they become addicted to smooking

E. Because they just want to do it

9. What is the main idea of the second paragraph?

A. Smooking may harm our physical health

B. Smooking may harm our mental health

C. Smooking causes many diseases

D. Smooking helps relieve anxiety

E. Smooking may relieve stress

10. "... smooking is a bad habit that should be avoided." (last paragraph)

What is the synonim of the underlined word?

A. Faced        C. Prevented        E. Encouraged

B. Admitted        D. Promoted

**The following text is for questions 10 to 12.**

Nowadays many programmes on TV contain violence, such as shooting, killing, and fighting that can influence many people, especially children, so it is so important for us to choose TV programs wisely.

Children usually want to immitate things that they see and they generally do not know the differences between good and bad things. For example, a little boy suddenly says violent things after he was watched TV. He doesn't know wether this word is doog or not.

There are few ways to avoid watching violence on TV. You need to spend more time doing other things. you can communicate with your family, go out with your friends, take exercise, enjoy your hobbies, think about or imagine something, and so on. For parents who have children, they should restrict and control their children's viewing of violent TV shows. Parents must control the TV programmes that their children watch.

From the explanation above, it can be concluded that TV is one aspect of our enjoyment life. But we must choose programmes carefully.

11. What is the text about?
    A. Children's interest in TV programmes containing violance
    B. Avoiding watching TV programmes containing violance
    C. TV programmes for children
    D. Watching TV for pleasure
    E. Bad impacts of TV
12. Why can children be affected by watching violence on TV?
    A. Because they do not know the difference between bad and good things
    B. Because they know that it is bad for them to watch
    C. Because they likento watch TV everyday
    D. Because TV is onew ay the enjoy life
13. "...they should <u>restrict</u> and control their children's viewing..." (paragraph 3)

    What is the synonym of the undrerlined word?
    A. Receive        C. Offer        E. Give
    B. Allow        D. Limit

**The following text is for questions 13 to 16.**

Cheating is bad habit that must be avoided by students. There are no benefits that students get by cheating. It only makes them lazy.

Cheating has a few consequences in both short and long terms. In the short term, it means that the learning processs, is useless. Maybe you will feel

safe because you do not get caught by your teacher. Then you will feel amazing when you get good grades without studying. But it is not such a good method. Acttually, you are wasting time and your money trying to "learn" by cheating. If you get caught, you will be in trouble because you can be expelled from school or university. In addition, you will get a zero on your test and a bad reputation with the teachers and the other students. In the long term, you may graduate from school or university by cheating, but when you are asked to use your knowledge at work, you cannot solve your problems, give ideas, or be useful in a meeting because you did not learn much at university.

From the consequences above, it is obvious that cheating is a bad habit that has many disadvantages for students.

14. What is the purpose of the text?
    A. To retell a cheating experience
    B. To persuade readers not to cheat
    C. To show the number of cheating class
    D. To show good and bad impacts of cheating
    E. To discuss the cheating phenomenon among students

15. What can we infer from the text?
    A. Cheating is bad habit tat has short and long term consequences
    B. You cannot work in any company because you are a cheat
    C. Cheating can get you expelled from school
    D. You cannot go to meetings at work
    E. Cheating makes students lazy

16. "It only makes them lazy." (paragraph 1)
    What does the underlined word refer to?
    A.   A bad habit          C. Studying          E. Student
    B.   Cheating             D. Reading

17. " .... it is obvious that cheating is a bad habit ..." (paragraph 3)
    What does the underlined wod mean?
    A. Ridiculous          C. Obscure          E. Clear
    B. Difficult           D. Vague

**The following text is for questions 17 to 20.**

Social media such as facebook, twitter, and path play an important role in our daily lives. They make real-time communication possible even over vast geographical distances. While the benefits are undeniable, there are drawbacks such as missunderstanding, disputes, harassment, and crime. Therefore, online ettiquette is needed to minimise those problems.

Firstly, add only people that you know in person. While having many online friends might seem like a niceidea, it may have dangerous consequences. For example, sex predators habve been known to pose as younger people to communicate with their targets and lure them intomeeting face-to-face.secondly, do not post yourself doing things might have negative repercussions in the future. Thirdly, you don't need to broadcast your entire life on a public site. However, you can take pictures and keep them privately. Fouthly, do not post inappropriate things or photos of people doing such things. They might look funny to you, but they might be disturbing to others.

Social media is a good place to start a disscussion. However, you should be aware of the negative sids and follow online ettiquette, just to be safe.

18. What is the text about?
    A. The pors and cons of social media
    B. A few rules of using social media
    C. The drawbacks of social mediaion on social media
    D. Discussion on social media
    E. How to use social media

19. According to the text above, which of the following sentences is NOT true?
    A. Online ettiquettes are needed to prevent something terrible happening when you use social media
    B. have to be careful when you want to post something on your friends' walls
    C. You cannot post photos of other people doing nonsencial activities
    D. You do not have to add someone that you know in real life
    E. You dont have to post inappropriate things in social media

20. "However, you can take pictures and keep them privately." (paragraph 2)
What does the underlined word mean?
    A. Carelessly      C. Secretly      E. Openly
    B. Vaquely       D. Publicy

**Appendix 7**

## Key Answer

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

**Calculation of Pre-Test**

1. Mean score from score total ($M_t$)

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

$$M_t = \frac{721}{25} = 28.84$$

2. Standard Deviation ($SD_t$)

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

$$SD_t = \sqrt{\frac{21621}{25} - \left(\frac{721}{25}\right)^2}$$

$$SD_t = \sqrt{864.84 - 28.84^2}$$

$$SD_t = \sqrt{864.84 - 831.74}$$

$$SD_t = \sqrt{33.1} = 5.75$$

3. Mean Score ($M_p$)

**Item 1**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n1}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+26+25+27+35+35+33+27+23+24+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{666}{22} = 30.27$$

**Item 2**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n2}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+26+25+27+35+35+33+27+23+24+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{666}{22} = 30.27$$

**Item 3**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n3}$$

$$M_{pl} = \frac{27+34+35+35+35+32+25+31+26+25+27+35+35+33+27+23+24+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{665}{22} = 30.23$$

**Item 4**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n4}$$

$$M_{pl} = \frac{27+34+35+35+35+32+25+26+25+27+35+35+33+23+24+34+34+27+28+33}{20}$$

$$M_{pl} = \frac{607}{20} = 30.35$$

**Item 5**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n5}$$

$$M_{pl} = \frac{27+34+17+35+35+35+32+25+26+35+13+35+33+23+34+34+27+33}{18}$$

$$M_{pl} = \frac{533}{18} = 29.61$$

**Item 6**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n6}$$

$$M_{pl} = \frac{27+34+17+35+35+35+32+25+26+35+13+35+33+23+34+34+27+33}{18}$$

$$M_{pl} = \frac{533}{18} = 29.61$$

**Item 7**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n7}$$

$$M_{pl} = \frac{27+34+17+35+35+35+32+25+26+26+35+13+35+33+23+34+34+27+33}{19}$$

$$M_{pl} = \frac{558}{19} = 29.36$$

**Item 8**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n8}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+27+35+13+35+33+27+23+24+34+34+28+33}{23}$$

$$M_{pl} = \frac{669}{23} = 29.08$$

**Item 9**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{34+35+35+35+32+25+31+26+35+35+33+27+23+24+34+34+28+33}{18}$$

$$M_{pl} = \frac{559}{18} = 31.05$$

**Item 10**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n10}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+24+34+34+27+28+33}{23}$$

$$M_{pl} = \frac{685}{23} = 29.78$$

**Item 11**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n11}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

**Item 12**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n12}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

**Item 13**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n13}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+25+27+35+13+35+33+27+23+24+34+34+27+33}{21}$$

$$M_{pl} = \frac{625}{21} = 29.76$$

**Item 14**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n14}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+25+27+35+13+35+33+27+23+24+34+34+27+33}{21}$$

$$M_{pl} = \frac{625}{21} = 29.76$$

**Item 15**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n15}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+25+27+35+13+35+33+27+23+24+34+34+27+33}{21}$$

$$M_{pl} = \frac{625}{21} = 29.76$$

**Item 16**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n16}$$

$$M_{pl} = \frac{27+34+17+35+35+35+32+26+31+25+27+35+35+27+24+27+28+33}{18}$$

$$M_{pl} = \frac{533}{18} = 29.61$$

**Item 17**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n17}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+26+25+27+35+35+33+27+23+24+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{666}{22} = 30.27$$

**Item 18**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n18}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

**Item 19**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n19}$$

$$M_{pl}\frac{34+35+35+35+32+25+31+26+35+35+33+27+23+24+34+34+28+33}{18}$$

$$M_{pl} = \frac{559}{18} = 31.05$$

### Item 20

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n20}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

### Item 21

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n21}$$

$$M_{pl} = \frac{15+20+21+20+23+22+22+22+22+23+23+23+22+20+22+22+22+21+21+21+22}{21}$$

$$M_{pl} = \frac{449}{21} = 21.38$$

### Item 22

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n22}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+24+34+34+27+28+33}{23}$$

$$M_{pl} = \frac{685}{23} = 29.78$$

### Item 23

$$PM_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n25}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+26+25+27+35+35+33+27+23+24+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{666}{22} = 30.27$$

### Item 24

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n24}$$

$$M_{pl} = \frac{34+35+35+35+25+26+31+25+27+35+13+35+33+23+24+34+34+27+28+33}{20}$$

$$M_{pl} = \frac{592}{20} = 29.6$$

### Item 25

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n25}$$

$$M_{pl} = \frac{34+35+35+35+25+26+31+25+27+35+13+35+33+23+24+34+34+27+28+33}{20}$$

$$M_{pl} = \frac{592}{20} = 29.6$$

**Item 26**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n23}$$

$$M_{pl} = \frac{34+35+35+35+25+26+31+25+27+35+13+35+33+23+24+34+34+27+28+33}{20}$$

$$M_{pl} = \frac{592}{20} = 29.6$$

**Item 27**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n11}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

**Item 28**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{34+35+35+35+32+25+31+26+35+35+33+27+23+24+34+34+28+33}{18}$$

$$M_{pl} = \frac{559}{18} = 31.05$$

**Item 29**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n11}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+34+34+27+28+33}{22}$$

$$M_{pl} = \frac{661}{22} = 30.05$$

**Item 30**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n10}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+25+27+35+35+33+27+24+34+34+27+28+33}{23}$$

$$M_{pl} = \frac{685}{23} = 29.78$$

**Item 31**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{34+35+35+35+32+25+31+26+35+35+33+27+23+24+34+34+28+33}{18}$$

$$M_{pl} = \frac{559}{18} = 31.05$$

**Item 32**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{35+35+35+31+25+35+35+34+34+28+33}{11}$$

$$M_{pl} = \frac{360}{11} = 32.72$$

**Item 33**

$$M_{pl} = \frac{total score of students' score that true item answer}{n10}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+27+35+13+35+33+27+23+24+34+34+28+33}{23}$$

$$M_{pl} = \frac{669}{23} = 29.08$$

**Item 34**

$$M_{pl} = \frac{total score of students' score that true item answer}{n10}$$

$$M_{pl} = \frac{27+34+17++35+35+35+32+25+26+31+26+27+35+13+35+33+27+23+24+34+34+28}{22}$$

$$M_{pl} = \frac{636}{22} = 28.90$$

**Item 35**

$$M_{pl} = \frac{total score of students' score that true item answer}{n10}$$

$$M_{pl} = \frac{27+34+35+35+35+32+26+31+25+27+35+13+35+33+27+23+24+34+34+28}{20}$$

$$M_{pl} = \frac{592}{20} = 29.6$$

**Calculation of the formulation**

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

**Item 1**

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

$$r_{pbi} = \frac{30.27-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.43}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.248 x 3 = 0.74

**Item 2**

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

$$r_{pbi} = \frac{30.27-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.43}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.248 x 3 = 0.74

**Item 3**

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

$$r_{pbi} = \frac{30.23-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.39}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.24 x 3 = 0.72

**Item 4**

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

$$r_{pbi} = \frac{30.35-28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.51}{5.75} \sqrt{4}$$

$r_{pbi}$= 0.26 x 2 = 0.53

**Item 5**

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

$$r_{pbi} = \frac{29.61-28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{0.77}{5.75} \sqrt{2.3}$$

$r_{pbi}$= 0.133 x 1.52 = 0.20

**Item 6**

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

$$r_{pbi} = \frac{29.61-28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{0.77}{5.75} \sqrt{2.3}$$

$r_{pbi}$= 0.133 x 1.52 = 0.20

**Item 7**

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

$$r_{pbi} = \frac{29.36-28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.52}{5.75} \sqrt{4}$$

$r_{pbi}$= 0.09 x 2 = 0.18

**Item 8**

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

$$r_{pbi} = \frac{29.08-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.24}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.04 x 3 = 0.12

**Item 9**

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

$$r_{pbi} = \frac{31.05-28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{2.21}{5.75} \sqrt{2.3}$$

$r_{pbi}$= 0.384 x 1.52 = 0.58

**Item 10**

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

$$r_{pbi} = \frac{29.78-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.94}{5.75} \sqrt{9}$$

$r_{pbi} = 0.16 \times 3 = 0.49$

### Item 11

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

$$r_{pbi} = \frac{30.05-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.21}{5.75} \sqrt{9}$$

$r_{pbi} = 0.21 \times 3 = 0.63$

### Item 12

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

$$r_{pbi} = \frac{30.05-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.21}{5.75} \sqrt{9}$$

$r_{pbi} = 0.21 \times 3 = 0.63$

### Item 13

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

$$r_{pbi} = \frac{29.76-28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.92}{5.75} \sqrt{4}$$

$r_{pbi} = 0.16 \times 2 = 0.32$

### Item 14

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

$$r_{pbi} = \frac{29.76-28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.92}{5.75} \sqrt{4}$$

$r_{pbi} = 0.16 \times 2 = 0.32$

### Item 15

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

$$r_{pbi} = \frac{29.76-28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.92}{5.75} \sqrt{4}$$

$r_{pbi} = 0.16 \times 2 = 0.32$

### Item 16

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

$$r_{pbi} = \frac{29.61-28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{0.77}{5.75} \sqrt{2.3}$$

$r_{pbi} = 0.133 \times 1.52 = 0.20$

### Item 17

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

$$r_{pbi} = \frac{30.27-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.43}{5.75} \sqrt{9}$$

$r_{pbi} = 0.248 \times 3 = 0.74$

### Item 18

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

$$r_{pbi} = \frac{30.05-28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.21}{5.75} \sqrt{9}$$

$r_{pbi} = 0.21 \times 3 = 0.63$

### Item 19

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

$$r_{pbi} = \frac{31.05-28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{2.21}{5.75} \sqrt{2.3}$$

$r_{pbi} = 0.384 \times 1.52 = 0.58$

### Item 20

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

$$\mathrm{r_{pbi}} = \frac{30.05-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{1.21}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.21 \times 3 = 0.63$

**Item 21**

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

$$\mathrm{r_{pbi}} = \frac{30.05-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{1.21}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.21 \times 3 = 0.63$

**Item 22**

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

$$\mathrm{r_{pbi}} = \frac{29.78-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{0.94}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.16 \times 3 = 0.49$

**Item 23**

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

$$\mathrm{r_{pbi}} = \frac{30.27-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{1.43}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.248 \times 3 = 0.74$

**Item 24**

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

$$\mathrm{r_{pbi}} = \frac{29.6-28.84}{5{,}75}\sqrt{\frac{0.8}{0.2}}$$

$$\mathrm{r_{pbi}} = \frac{0.76}{5.75}\sqrt{4}$$

$\mathrm{r_{pbi}} = 0.132 \times 2 = 0.26$

**Item 25**

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

$$\mathrm{r_{pbi}} = \frac{29.6-28.84}{5{,}75}\sqrt{\frac{0.8}{0.2}}$$

$$\mathrm{r_{pbi}} = \frac{0.76}{5.75}\sqrt{4}$$

$\mathrm{r_{pbi}} = 0.132 \times 2 = 0.26$

**Item 26**

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

$$\mathrm{r_{pbi}} = \frac{29.6-28.84}{5{,}75}\sqrt{\frac{0.8}{0.2}}$$

$$\mathrm{r_{pbi}} = \frac{0.76}{5.75}\sqrt{4}$$

$\mathrm{r_{pbi}} = 0.132 \times 2 = 0.26$

**Item 27**

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

$$\mathrm{r_{pbi}} = \frac{30.05-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{1.21}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.21 \times 3 = 0.63$

**Item 28**

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

$$\mathrm{r_{pbi}} = \frac{31.05-28.84}{5{,}75}\sqrt{\frac{0.7}{0.3}}$$

$$\mathrm{r_{pbi}} = \frac{2.21}{5.75}\sqrt{2.3}$$

$\mathrm{r_{pbi}} = 0.384 \times 1.52 = 0.58$

**Item 29**

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

$$\mathrm{r_{pbi}} = \frac{30.05-28.84}{5{,}75}\sqrt{\frac{0.9}{0.1}}$$

$$\mathrm{r_{pbi}} = \frac{1.21}{5.75}\sqrt{9}$$

$\mathrm{r_{pbi}} = 0.21 \times 3 = 0.63$

**Item 30**

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

$$r_{pbi} = \frac{29.78 - 28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.94}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.16 x 3 = 0.49

**Item 31**

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

$$r_{pbi} = \frac{31.05 - 28.84}{5,75} \sqrt{\frac{0.7}{0.3}}$$

$$r_{pbi} = \frac{2.21}{5.75} \sqrt{2.3}$$

$r_{pbi}$= 0.384 x 1.52 = 0.58

**Item 32**

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

$$r_{pbi} = \frac{32.72 - 28.84}{5,75} \sqrt{\frac{0.4}{0.6}}$$

$$r_{pbi} = \frac{3.88}{5.75} \sqrt{0.66}$$

$r_{pbi}$= 0.67 x 0.81 = 0.52

**Item 33**

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

$$r_{pbi} = \frac{29.08 - 28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.24}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.0417 x 3 = 0.13

**Item 33**

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

$$r_{pbi} = \frac{28.90 - 28.84}{5,75} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.06}{5.75} \sqrt{9}$$

$r_{pbi}$= 0.010 x 3 = 0.03

**Item 35**

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

$$r_{pbi} = \frac{29.6 - 28.84}{5,75} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.76}{5.75} \sqrt{4}$$

$r_{pbi}$= 0.132 x 2 = 0.26

**Appendix 9**

**Table Validity of Pre-test**

| No | $M_p$ | $M_t$ | $SD_t$ | P | Q | $r_{pbi=\frac{M_p-M_t}{SD_t}\sqrt{\frac{p}{q}}}$ | $r_t$ on 5% significant | Interpretation |
|---|---|---|---|---|---|---|---|---|
| 1. | 30.27 | 28.84 | 5.75 | 0.9 | 0.1 | 0.74 | 0.396 | Valid |
| 2. | 30.27 | 28.84 | 5.75 | 0.9 | 0.1 | 0.74 | 0.396 | Valid |
| 3. | 30.23 | 28.84 | 5.75 | 0.9 | 0.1 | 0.72 | 0.396 | Valid |
| 4. | 30.35 | 28.84 | 5.75 | 0.8 | 0.2 | 0.53 | 0.396 | Valid |
| 5. | 29.61 | 28.84 | 5.75 | 0.7 | 0.3 | 0.20 | 0.396 | Invalid |
| 6. | 29.61 | 28.84 | 5.75 | 0.7 | 0.3 | 0.20 | 0.396 | Invalid |
| 7. | 29.36 | 28.84 | 5.75 | 0.8 | 0.2 | 0.18 | 0.396 | Invalid |
| 8. | 29.08 | 28.84 | 5.75 | 0.9 | 0.1 | 0.12 | 0.396 | Invalid |
| 9. | 31.05 | 28.84 | 5.75 | 0.7 | 0.3 | 0.58 | 0.396 | Valid |
| 10. | 29.78 | 28.84 | 5.75 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 11. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 12. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 13. | 29.76 | 28.84 | 5.75 | 0.8 | 0.2 | 0.32 | 0.396 | Invalid |
| 14. | 29.76 | 28.84 | 5.75 | 0.8 | 0.2 | 0.32 | 0.396 | Invalid |
| 15. | 29.76 | 28.84 | 5.75 | 0.8 | 0.2 | 0.32 | 0.396 | Invalid |
| 16. | 29.61 | 28.84 | 5.75 | 0.7 | 0.3 | 0.20 | 0.396 | Invalid |
| 17. | 30.27 | 28.84 | 5.75 | 0.9 | 0.1 | 0.74 | 0.396 | Valid |
| 18. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 19. | 31.05 | 28.84 | 5.75 | 0.7 | 0.3 | 0.58 | 0.396 | Valid |
| 20. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 21. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 22. | 29.78 | 28.84 | 5.75 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 23. | 30.27 | 28.84 | 5.75 | 0.9 | 0.1 | 0.74 | 0.396 | Valid |
| 24. | 29.6 | 28.84 | 5.75 | 0.8 | 0.2 | 0.26 | 0.396 | Invalid |
| 25. | 29.6 | 28.84 | 5.75 | 0.8 | 0.2 | 0.26 | 0.396 | Invalid |
| 26. | 29.6 | 28.84 | 5.75 | 0.8 | 0.2 | 0.26 | 0.396 | Invalid |
| 27. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 28. | 31.05 | 28.84 | 5.75 | 0.7 | 0.3 | 0.58 | 0.396 | Valid |
| 29. | 30.05 | 28.84 | 5.75 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 30. | 29.78 | 28.84 | 5.75 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 31. | 31.05 | 28.84 | 5.75 | 0.7 | 0.3 | 0.58 | 0.396 | Valid |
| 32. | 32.72 | 28.84 | 5.75 | 0.4 | 0.6 | 0.52 | 0.396 | Valid |
| 33. | 29.08 | 28.84 | 5.75 | 0.9 | 0.1 | 0.13 | 0.396 | Invalid |
| 34. | 28.90 | 28.84 | 5.75 | 0.9 | 0.1 | 0.03 | 0.396 | Invalid |
| 35. | 29.6 | 28.84 | 5.75 | 0.8 | 0.2 | 0.26 | 0.396 | Invalid |

**Appendix 11**

## Reliability of Pre Test

To get reliability of the test, the researcher uses formula KR-20:

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

N= 25

$\Sigma Xt = 721$

$\Sigma Xt^2 = 21621$

$\Sigma pq = 4.7$

$$S_t^2 \quad = \Sigma Xt^2 - \left(\frac{\Sigma xt}{N}\right)^2$$

$$= 21621 - \left(\frac{721}{25}\right)^2 = 21621 - 28.84^2 = 22621 - 831.7456 = 21789.25$$

$$S_t^2 \quad = \frac{\Sigma Xt2}{N} = \frac{21789.25}{25}$$

$$S_t^2 \quad = 871.57$$

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

$$R_{11} = \left(\frac{25}{25-1}\right)\left(\frac{871.57-4.7}{871.57}\right) = \left(\frac{25}{24}\right)\left(\frac{866.87}{871.57}\right)$$

$$= (1.04)\,(0.\,99)$$
$$= 1.03\ (r_{11} > 0.70 = \text{reliable})$$

**Calculation of Post-Test**

4. Mean score from score total ($M_t$)

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

$$M_t = \frac{759}{25} = 30.36$$

5. Standard Deviation ($SD_t$)

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

$$SD_t = \sqrt{\frac{23659}{25} - \left(\frac{759}{25}\right)^2}$$

$$SD_t = \sqrt{946.36 - 30.36^2}$$

$$SD_t = \sqrt{946.36 - 921.72}$$

$$SD_t = \sqrt{24.64} = 4.9$$

6. Mean Score ($M_p$)

**Item 1**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n1}$$

$$M_{pl} = \frac{34+33+33+34+34+19+34+35+34+35+33+27+25+35+33+33+34+33+31}{19}$$

$$M_{pl} = \frac{609}{19} = 32.05$$

**Item 2**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n2}$$

$$M_{pl} = \frac{20+34+33+33+34+34+25+34+35+24+34+35+33+27+25+35+33+33+34+32+33+31}{22}$$

$$M_{pl} = \frac{691}{22} = 31.40$$

**Item 3**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n3}$$

$$M_{pl=} \frac{34+33+33+34+34+19+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{717}{23} = 31.17$$

**Item 4**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n3}$$

$$M_{pl=} \frac{34+33+33+34+34+19+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{717}{23} = 31.17$$

**Item 5**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n5}$$

$$M_{pl} = \frac{20+34+33+33+34+34+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{718}{23} = 31.21$$

**Item 6**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n6}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 7**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n7}$$

$$M_{pl} = \frac{34+22+33+33+34+34+19+25+34+35+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.08$$

**Item 8**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n8}$$

$$M_{pl} = \frac{34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+27+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.04$$

**Item 9**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+27+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.04$$

**Item 10**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n10}$$

$$M_{pl} = \frac{20+34+33+33+34+34+25+34+35+24+34+35+33+27+25+35+33+33+34+32+33+31}{22}$$

$$M_{pl} = \frac{691}{22} = 31.40$$

**Item 11**

$$M_{pl} = \frac{total\,score\,of\,students'\,score\,that\,true\,item\,answer}{n17}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 12**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n9}$$

$$M_{pl} = \frac{34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+27+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.04$$

**Item 13**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n3}$$

$$M_{pl=} \frac{34+33+33+34+34+19+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{717}{23} = 31.17$$

**Item 14**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n14}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 15**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n15}$$

$$M_{pl} = \frac{20+34+33+33+34+34+25+34+35+24+34+35+33+27+25+35+33+33+34+32+33+31}{22}$$

$$M_{pl} = \frac{691}{22} = 31.40$$

**Item 16**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n16}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+25+35+33+33+34+32+33}{23}$$

$$M_{pl} = \frac{701}{23} = 30.47$$

**Item 17**

$$M_{pl} = \frac{total\,score\,of\,student's\,score\,that\,true\,item\,answer}{n17}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 18**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n18}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 19**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n19}$$

$$M_{pl} = \frac{34+22+33+33+34+34+34+35+34+35+27+33+27+35+33+33+34+32+33+31}{20}$$

$$M_{pl} = \frac{646}{20} = 32.3$$

**Item 20**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n20}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+25+35+33+33+34+32+31}{23}$$

$$M_{pl} = \frac{699}{23} = 30.39$$

**Item 21**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n21}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+27+25+35+33+32+33+31}{23}$$

$$M_{pl} = \frac{692}{23} = 30.08$$

**Item 22**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n22}$$

$$M_{pl} = \frac{20+34+22+33+34+34+19+25+34+35+24+34+35+27+33+25+35+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{699}{23} = 30.39$$

**Item 23**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n23}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+25+34+35+24+34+35+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.04$$

**Item 24**

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n24}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+25+34+35+24+34+35+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{714}{23} = 31.04$$

### Item 25

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = \frac{34+33+33+34+34+19+34+35+34+35+33+27+25+35+33+33+34+33+31}{19}$$

$$M_{pl} = \frac{609}{19} = 32.05$$

### Item 26

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = = \frac{20+34+33+33+34+34+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{718}{23} = 31.21$$

### Item 27

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = = \frac{20+34+33+33+34+34+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$

$$M_{pl} = \frac{718}{23} = 31.21$$

### Item 28

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+27+25+35+33+33+34+32+31}{23}$$

$$M_{pl} = \frac{693}{23} = 30.13$$

### Item 29

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+25+35+33+33+34+32+33}{23}$$

$$M_{pl} = \frac{701}{23} = 30.47$$

### Item 30

$$M_{pl} = \frac{total\ score\ of\ students'\ score\ that\ true\ item\ answer}{n25}$$

$$M_{pl} = = \frac{20+34+22+33+33+34+34+19+25+34+35+24+34+35+27+33+25+35+33+33+34+32+33}{23}$$

$$\text{M}_{\text{pl}} = \frac{701}{23} = 30.47$$

## Item 31

$$\text{M}_{\text{pl}} = \frac{total\,score\,of\,student\,s'score\,that\,true\,item\,answer}{n11}$$
$$\text{M}_{\text{pl}} = \frac{20+22+34+34+35+35+35+34+33}{9}$$
$$\text{M}_{\text{pl}} = \frac{282}{9} = 31.33$$

## Item 32

$$\text{M}_{\text{pl}} = \frac{total\,score\,of\,student\,s'score\,that\,true\,item\,answer}{n12}$$
$$\text{M}_{\text{pl}} = \frac{20+34+22+33+33+34+19+25+35+34+35+27+33+25+35+33+33+34+32+33+31}{21}$$
$$\text{M}_{\text{pl}} = \frac{640}{21} = 30.47$$

## Item 33

$$\text{M}_{\text{pl}} = \frac{total\,score\,of\,student\,s'score\,that\,true\,item\,answer}{n13}$$
$$\text{M}_{\text{pl}} = \frac{20+34+22+33+34+34+19+34+35+24+34+35+27+33+25+35+33+33+34+32+33+31}{23}$$
$$\text{M}_{\text{pl}} = \frac{674}{22} = 30.63$$

## Item 34

$$\text{M}_{\text{pl}} = \frac{total\,score\,of\,student\,s'score\,that\,true\,item\,answer}{n25}$$
$$\text{M}_{\text{pl}} = = \frac{20+34+33+33+34+34+25+34+35+24+34+35+27+33+27+25+35+33+33+34+32+33+31}{23}$$
$$\text{M}_{\text{pl}} = \frac{718}{23} = 31.21$$

## Item 35

$$\text{M}_{\text{pl}} = \frac{total\,score\,of\,student\,s'score\,that\,true\,item\,answer}{n4}$$
$$\text{M}_{\text{pl}=} \frac{20+34+33+33+34+34+19+25+34+35+27+24+34+35+33+27+25+35+33+34+32+33+31}{23}$$
$$\text{M}_{\text{pl}} = \frac{704}{23} = 30.60$$

**Calculation of the formulation** $r_{pbi} = \dfrac{M_{p}-M_{t}}{SD_{t}} \sqrt{\dfrac{p}{q}}$

### Item 1

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{32.05-30.36}{4.9} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.69}{4.9} \sqrt{4}$$

$r_{pbi} = 0.34 \times 2 = 0.68$

### Item 2

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.40-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.04}{2.9} \sqrt{9}$$

$r_{pbi} = 0.21 \times 3 = 0.63$

### Item 3

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.17-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.81}{4.9} \sqrt{9}$$

$r_{pbi} = 0.16 \times 3 = 0.49$

### Item 4

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.17-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.81}{4.9} \sqrt{9}$$

$r_{pbi} = 0.16 \times 3 = 0.49$

### Item 5

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.21-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.85}{4.9} \sqrt{9}$$

$r_{pbi} = 0.17 \times 3 = 0.52$

### Item 6

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{32.3-30.36}{4.9} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9} \sqrt{4}$$

$r_{pbi} = 0.39 \times 2 = 0.79$

### Item 7

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.08-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.72}{4.9} \sqrt{9}$$

$r_{pbi} = 0.14 \times 3 = 0.44$

### Item 8

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.04-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.68}{4.9} \sqrt{9}$$

$r_{pbi} = 0.13 \times 3 = 0.41$

### Item 9

$$r_{pbi} = \frac{M_{p}-M_{t}}{SD_{t}} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.04-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.68}{4.9} \sqrt{9}$$

$r_{pbi} = 0.13 \times 3 = 0.41$

**Item 10**

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

$$r_{pbi} = \frac{31.40-30.36}{4.9}\sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.04}{4.9}\sqrt{9}$$

$r_{pbi}= 0.21 \times 3 = 0.63$

**Item 11**

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

$$r_{pbi} = \frac{32.3-30.36}{4.9}\sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9}\sqrt{4}$$

$r_{pbi}= 0.39 \times 2 = 0.79$

**Item 12**

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

$$r_{pbi} = \frac{31.04-30.36}{4.9}\sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.68}{4.9}\sqrt{9}$$

$r_{pbi}= 0.13 \times 3 = 0.41$

**Item 13**

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

$$r_{pbi} = \frac{31.17-30.36}{4.9}\sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.81}{4.9}\sqrt{9}$$

$r_{pbi}= 0.16 \times 3 = 0.49$

**Item 14**

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

$$r_{pbi} = \frac{32.3-30.36}{4.9}\sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9}\sqrt{4}$$

$r_{pbi}= 0.39 \times 2 = 0.79$

**Item 15**

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

$$r_{pbi} = \frac{31.40-30.36}{4.9}\sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{1.04}{4.9}\sqrt{9}$$

$r_{pbi}= 0.21 \times 3 = 0.63$

**Item 16**

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

$$r_{pbi} = \frac{30.47-30.36}{4.9}\sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.11}{4.9}\sqrt{9}$$

$r_{pbi}= 0.022 \times 3 = 0.06$

**Item 17**

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

$$r_{pbi} = \frac{32.3-30.36}{4.9}\sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9}\sqrt{4}$$

$r_{pbi}= 0.39 \times 2 = 0.79$

**Item 18**

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

$$r_{pbi} = \frac{32.3-30.36}{4.9}\sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9}\sqrt{4}$$

$r_{pbi}= 0.39 \times 2 = 0.79$

**Item 19**

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

$$r_{pbi} = \frac{32.3-30.36}{4.9}\sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.94}{4.9}\sqrt{4}$$

$r_{pbi}= 0.39 \times 2 = 0.79$

**Item 20**

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

$$r_{pbi} = \frac{30.39-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.03}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.03 x 3 = 0.09

**Item 21**

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

$$r_{pbi} = \frac{30.08-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{-0.28}{4.9} \sqrt{9}$$

$r_{pbi}$= -0.05 x 3 =- 0.015

**Item 22**

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

$$r_{pbi} = \frac{30.39-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.03}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.006 x 3 = 0.018

**Item 23**

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

$$r_{pbi} = \frac{31.04-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.68}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.139 x 3 = 0.41

**Item 24**

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

$$r_{pbi} = \frac{31.04-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.68}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.139 x 3 = 0.41

**Item 25**

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

$$r_{pbi} = \frac{32.05-30.36}{4.9} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{1.69}{4.9} \sqrt{4}$$

$r_{pbi}$= 0.34 x 2 = 0.68

**Item 26**

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

$$r_{pbi} = \frac{31.21-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.85}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.17 x 3 = 0.52

**Item 27**

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

$$r_{pbi} = \frac{31.21-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.85}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.17 x 3 = 0.52

**Item 28**

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

$$r_{pbi} = \frac{30.13-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{-0.23}{4.9} \sqrt{9}$$

$r_{pbi}$= -0.04 x 3 = -0.12

**Item 29**

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

$$r_{pbi} = \frac{30.47-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{-0.16}{4.9} \sqrt{9}$$

$r_{pbi}$= -0.03 x 3 = -0.09

$r_{pbi} = 0.17 \times 3 = 0.52$

## Item 30

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

$$r_{pbi} = \frac{30.47-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{-0.16}{4.9} \sqrt{9}$$

$r_{pbi}$= -0.03 x 3 = -0.09

## Item 31

$$_{pbi} = \frac{M_{p-M_t}}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{31.33-30.36}{4.9} \sqrt{\frac{0.4}{0.6}}$$

$$r_{pbi} = \frac{0.97}{4.9} \sqrt{0.66}$$

$r_{pbi}$= 0.19 x 0.81 = 0.15

## Item 32

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

$$r_{pbi} = \frac{30.47-30.36}{4.9} \sqrt{\frac{0.8}{0.2}}$$

$$r_{pbi} = \frac{0.11}{4.9} \sqrt{4}$$

$r_{pbi}$= 0.02 x 2 = 0.04

## Item 33

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

$$r_{pbi} = \frac{30.63-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.27}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.05x 3 = 0.15

## Item 34

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

$$r_{pbi} = \frac{31.21-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.85}{4.9} \sqrt{9}$$

## Item 35

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

$$r_{pbi} = \frac{30.60-30.36}{4.9} \sqrt{\frac{0.9}{0.1}}$$

$$r_{pbi} = \frac{0.24}{4.9} \sqrt{9}$$

$r_{pbi}$= 0.04 x 3 = 0.14

**Appendix 13**

**Table Validity of Post-test**

| No | $M_p$ | $M_t$ | $SD_t$ | p | q | $r_{pbi=\frac{M_p-M_t}{SD_t}\sqrt{\frac{p}{q}}}$ | $r_t$ on 5% significant | Interpretation |
|---|---|---|---|---|---|---|---|---|
| 1. | 32.05 | 30.36 | 4.9 | 0.8 | 0.2 | 0.68 | 0.396 | Valid |
| 2. | 31.40 | 30.36 | 4.9 | 0.9 | 0.1 | 0.63 | 0.396 | Valid |
| 3. | 31.17 | 30.36 | 4.9 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 4. | 31.17 | 30.36 | 4.9 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 5. | 31.21 | 30.36 | 4.9 | 0.9 | 0.1 | 0.52 | 0.396 | Valid |
| 6. | 32.3 | 30.36 | 4.9 | 0.8 | 0.2 | 0.79 | 0.396 | Valid |
| 7. | 31.08 | 30.36 | 4.9 | 0.9 | 0.1 | 0.44 | 0.396 | Valid |
| 8. | 31.04 | 30.36 | 4.9 | 0.9 | 0.1 | 0.41 | 0.396 | Valid |
| 9. | 31.04 | 30.36 | 4.9 | 0.9 | 0.1 | 0.41 | 0.396 | valid |
| 10. | 31.40 | 30.36 | 4.9 | 0.8 | 0.2 | 0.63 | 0.396 | Valid |
| 11. | 32.3 | 30.36 | 4.9 | 0.8 | 0.2 | 0.79 | 0.396 | Valid |
| 12. | 31.04 | 30.36 | 4.9 | 0.9 | 0.1 | 0.41 | 0.396 | Valid |
| 13. | 31.17 | 30.36 | 4.9 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 14. | 32.3 | 30.36 | 4.9 | 0.9 | 0.1 | 0.79 | 0.396 | Valid |
| 15. | 31.40 | 30.36 | 4.9 | 0.8 | 0.2 | 0.63 | 0.396 | Valid |
| 16. | 30.47 | 30.36 | 4.9 | 0.9 | 0.1 | 0.06 | 0.396 | Invalid |
| 17. | 32.3 | 30.36 | 4.9 | 0.8 | 0.2 | 0.79 | 0.396 | Valid |
| 18. | 32.3 | 30.36 | 4.9 | 0.9 | 0.1 | 0.79 | 0.396 | Valid |
| 19. | 32.3 | 30.36 | 4.9 | 0.9 | 0.1 | 0.79 | 0.396 | Valid |
| 20. | 30.39 | 30.36 | 4.9 | 0.6 | 0.4 | 0.09 | 0.396 | Invalid |
| 21. | 30.08 | 30.36 | 4.9 | 0.8 | 0.2 | - 0.015 | 0.396 | Invalid |
| 22. | 30.39 | 30.36 | 4.9 | 0.9 | 0.1 | 0.018 | 0.396 | Invalid |
| 23. | 31.04 | 30.36 | 4.9 | 0.8 | 0.2 | 0.41 | 0.396 | Valid |
| 24. | 31.04 | 30.36 | 4.9 | 0.9 | 0.1 | 0.41 | 0.396 | Valid |
| 25. | 32.05 | 30.36 | 4.9 | 0.7 | 0.3 | 0.68 | 0.396 | Valid |
| 26. | 31.21 | 30.36 | 4.9 | 0.9 | 0.1 | 0.52 | 0.396 | Valid |
| 27. | 31.21 | 30.36 | 4.9 | 0.9 | 0.1 | 0.52 | 0.396 | Valid |
| 28. | 30.13 | 30.36 | 4.9 | 0.9 | 0.1 | -0.12 | 0.396 | Invalid |
| 29. | 30.47 | 30.36 | 4.9 | 0.9 | 0.1 | -0.09 | 0.396 | Invalid |
| 30. | 30.47 | 30.36 | 4.9 | 0.9 | 0.1 | -0.09 | 0.396 | Invalid |
| 31. | 31.33 | 30.36 | 4.9 | 0.4 | 0.6 | 0.15 | 0.396 | Invalid |
| 32. | 30.47 | 30.36 | 4.9 | 0.9 | 0.1 | 0.04 | 0.396 | Invalid |
| 33. | 30.63 | 30.36 | 4.9 | 0.9 | 0.1 | 0.15 | 0.396 | Invalid |
| 34. | 31.17 | 30.36 | 4.9 | 0.9 | 0.1 | 0.49 | 0.396 | Valid |
| 35. | 30.60 | 30.36 | 4.9 | 0.9 | 0.1 | 0.14 | 0.396 | Invalid |

**Appendix 15**

## Reliability of Post Test

To get reliability of the test, the researcher uses formula KR-20:

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

N= 25

$\sum Xt = 759$

$\sum Xt^2 = 23259$

$\sum pq = 3.65$

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

$$= 23259 - \left(\frac{759}{25}\right)^2 = 23259 - 30.36^2 = 23259 - 921.72 = 22337.28$$

$$S_t^2 = \frac{\sum Xt2}{N} = \frac{22337.28}{25}$$

$$S_t^2 = 893.49$$

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

$$R_{11} = \left(\frac{25}{25-1}\right)\left(\frac{893.49 - 3.65}{893.49}\right) = \left(\frac{25}{24}\right)\left(\frac{889.84}{893.49}\right)$$

$$= (1.04)\,(0.\,99)$$
$$= 1.03\ (r_{11} > 0.70 = reliable)$$

**Appendix 16**

## Score of Control Class and Experimental Class
## Pre Test

a. **Pre Test Score of Control Class**

| No | The Name of Students (n) | Pre Test |
|----|--------------------------|----------|
| 1 | Aspiati zakiyah | 50 |
| 2 | Desi fitriani | 15 |
| 3 | Dhea aisyah putri | 35 |
| 4 | Eka putri | 45 |
| 5 | Fitri handayani | 35 |
| 6 | Ghevani miftah hulzannah | 70 |
| 7 | Ismi khairunnisa | 25 |
| 8 | Khusnul khatimah | 35 |
| 9 | Luthfia hannum | 45 |
| 10 | Maharani | 30 |
| 11 | Mia amalia | 60 |
| 12 | Maimunah | 35 |
| 13 | Nursaadah | 20 |
| 14 | Padhilah salsabila | 40 |
| 15 | Putri ranggani | 20 |
| 16 | Rahmawati | 20 |
| 17 | Rafikah rezkri | 60 |
| 18 | Renny romaito | 25 |
| 19 | Riski maqfiroh | 40 |
| 20 | Rizki lestari | 50 |
| 21 | Safiah nazifah | 35 |
| 22 | Sandra surya | 55 |
| 23 | Sarmila fitri | 40 |
| 24 | Syafitri hayati | 20 |
| 25 | Sri mulyani | 35 |
| 26 | Wilda ulfa | 40 |
| | **Total** | **980** |

**b. Pre Test Score of Experiment Class**

| No | The Name of Students (n) | Pre-Test |
|----|--------------------------|----------|
| 1 | Ade putri rahayu | 50 |
| 2 | Asri annur siregar | 50 |
| 3 | Asro ito harahap | 25 |
| 4 | Azmi indah hati | 20 |
| 5 | Gusliani pohan | 65 |
| 6 | Helma melia putri | 25 |
| 7 | Kofifah indar prawansyah | 20 |
| 8 | Khopipah indah siregar | 15 |
| 9 | Fahma yusmita | 35 |
| 10 | Fhadillah rosida irawa | 20 |
| 11 | Linda anita sari siregar | 15 |
| 12 | Nahdiyatun nasriyah | 30 |
| 13 | Nadya annisa lubis | 25 |
| 14 | Nita maharani harahap | 70 |
| 15 | Nurul helda rangkuti | 15 |
| 16 | Nurul hidayah siagian | 35 |
| 17 | Putri ana simamora | 50 |
| 18 | Putri nidia sapina | 15 |
| 19 | Rika amelia daulay | 40 |
| 20 | Rima azizah simanjuntak | 40 |
| 21 | Riska dwi yanti | 50 |
| 22 | Riski nur saadah | 20 |
| 23 | Rozia sakila siregar | 20 |
| 24 | Salwah putri salsabila | 30 |
| 25 | Ummul pratiwi sitompul | 45 |
| 26 | Vita sari isnaidar | 65 |
| | **Total** | **890** |

**Appendix 17**

## Score of Control Class and Experiment Class
## Post Test

**a. Score of control Class**

| No | The Name of Students (n) | Post Test |
|----|--------------------------|-----------|
| 1 | Aspiati zakiyah | 85 |
| 2 | Desi fitriani | 65 |
| 3 | Dhea aisyah putri | 80 |
| 4 | Eka putri | 75 |
| 5 | Fitri handayani | 75 |
| 6 | Ghevani miftah hulzannah | 75 |
| 7 | Ismi khairunnisa | 80 |
| 8 | Khusnul khatimah | 70 |
| 9 | Luthfia hannum | 70 |
| 10 | Maharani | 75 |
| 11 | Mia amalia | 65 |
| 12 | Maimunah | 70 |
| 13 | Nursaadah | 70 |
| 14 | Padhilah salsabila | 60 |
| 15 | Putri ranggani | 55 |
| 16 | Rahmawati | 60 |
| 17 | Rafikah rezkri | 75 |
| 18 | Renny romaito | 70 |
| 19 | Riski maqfiroh | 70 |
| 20 | Rizki lestari | 70 |
| 21 | Safiah nazifah | 70 |
| 22 | Sandra surya | 70 |
| 23 | Sarmila fitri | 75 |
| 24 | Syafitri hayati | 60 |
| 25 | Sri mulyani | 70 |
| 26 | Wilda ulfa | 75 |
| **Total** | | **1835** |

**b. Post Test Score of Experimental Class**

| No | The Name of Students (n) | Post-Test |
|----|---------------------------|-----------|
| 1  | Ade putri rahayu          | 80        |
| 2  | Asri annur siregar        | 85        |
| 3  | Asro ito harahap          | 75        |
| 4  | Azmi indah hati           | 70        |
| 5  | Gusliani pohan            | 75        |
| 6  | Helma melia putri         | 70        |
| 7  | Kofifah indar prawansyah  | 60        |
| 8  | Khopipah indah siregar    | 60        |
| 9  | Fahma yusmita             | 60        |
| 10 | Fhadillah rosida irawa    | 70        |
| 11 | Linda anita sari siregar  | 75        |
| 12 | Nahdiyatun nasriyah       | 85        |
| 13 | Nadya annisa lubis        | 75        |
| 14 | Nita maharani harahap     | 85        |
| 15 | Nurul helda rangkuti      | 70        |
| 16 | Nurul hidayah siagian     | 75        |
| 17 | Putri ana simamora        | 85        |
| 18 | Putri nidia sapina        | 70        |
| 19 | Rika amelia daulay        | 65        |
| 20 | Rima azizah simanjuntak   | 80        |
| 21 | Riska dwi yanti           | 75        |
| 22 | Riski nur saadah          | 90        |
| 23 | Rozia sakila siregar      | 65        |
| 24 | Salwah putri salsabila    | 70        |
| 25 | Ummul pratiwi sitompul    | 75        |
| 26 | Vita sari isnaidar        | 95        |
| **Total** |                      | **1940**  |

**Appendix 18**

## The Comparison of Pre Test and Post Test

a. **Control Class**

| No | The Name of Students (n) | Pre Test | Post Test |
|----|--------------------------|----------|-----------|
| 1 | Aspiati zakiyah | 50 | 85 |
| 2 | Desi fitriani | 15 | 65 |
| 3 | Dhea aisyah putri | 35 | 80 |
| 4 | Eka putri | 45 | 75 |
| 5 | Fitri handayani | 35 | 75 |
| 6 | Ghevani miftah hulzannah | 70 | 75 |
| 7 | Ismi khairunnisa | 25 | 80 |
| 8 | Khusnul khatimah | 35 | 70 |
| 9 | Luthfia hannum | 45 | 70 |
| 10 | Maharani | 30 | 75 |
| 11 | Mia amalia | 60 | 65 |
| 12 | Maimunah | 35 | 70 |
| 13 | Nursaadah | 20 | 70 |
| 14 | Padhilah salsabila | 40 | 60 |
| 15 | Putri ranggani | 20 | 55 |
| 16 | Rahmawati | 20 | 60 |
| 17 | Rafikah rezkri | 60 | 75 |
| 18 | Renny romaito | 25 | 70 |
| 19 | Riski maqfiroh | 40 | 70 |
| 20 | Rizki lestari | 50 | 70 |
| 21 | Safiah nazifah | 35 | 70 |
| 22 | Sandra surya | 55 | 70 |
| 23 | Sarmila fitri | 40 | 75 |
| 24 | Syafitri hayati | 20 | 60 |
| 25 | Sri mulyani | 35 | 70 |
| 26 | Wilda ulfa | 40 | 75 |
| | **Total** | **980** | **1835** |

b. **Experimental Class**

| No | The Name of Students (n) | Pre-Test | Post-Test |
|----|--------------------------|----------|-----------|
| 1 | Ade putri rahayu | 50 | 80 |
| 2 | Asri annur siregar | 50 | 85 |
| 3 | Asro ito harahap | 25 | 75 |

| 4 | Azmi indah hati | 20 | 70 |
|---|---|---|---|
| 5 | Gusliani pohan | 65 | 75 |
| 6 | Helma melia putri | 25 | 70 |
| 7 | Kofifah indar prawansyah | 20 | 60 |
| 8 | Khopipah indah siregar | 15 | 60 |
| 9 | Fahma yusmita | 35 | 60 |
| 10 | Fhadillah rosida irawa | 20 | 70 |
| 11 | Linda anita sari siregar | 15 | 75 |
| 12 | Nahdiyatun nasriyah | 30 | 85 |
| 13 | Nadya annisa lubis | 25 | 75 |
| 14 | Nita maharani harahap | 70 | 85 |
| 15 | Nurul helda rangkuti | 15 | 70 |
| 16 | Nurul hidayah siagian | 35 | 75 |
| 17 | Putri ana simamora | 50 | 85 |
| 18 | Putri nidia sapina | 15 | 70 |
| 19 | Rika amelia daulay | 40 | 65 |
| 20 | Rima azizah simanjuntak | 40 | 80 |
| 21 | Riska dwi yanti | 50 | 75 |
| 22 | Riski nur saadah | 20 | 90 |
| 23 | Rozia sakila siregar | 20 | 65 |
| 24 | Salwah putri salsabila | 30 | 70 |
| 25 | Ummul pratiwi sitompul | 45 | 75 |
| 26 | Vita sari isnaidar | 65 | 95 |
| **Total** | | **890** | **1940** |

**Appendix 19**

## HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as control class sample 1 and variant of the second class as experimental class sample 2 are used homogeneity test by using formula:

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

Hypotheses:

H$_0$ : $\delta_1^2 = \delta_2^2$

H$_1$ : $\delta_1^2 \neq \delta_2^2$

A. Variant of the XI PI 1 class is:

| NO | Xi | Xi$^2$ |
|----|----|----|
| 1. | 50 | 2500 |
| 2. | 15 | 225 |
| 3. | 35 | 1225 |
| 4. | 45 | 2025 |
| 5. | 35 | 1225 |
| 6. | 70 | 4900 |
| 7. | 25 | 625 |
| 8. | 35 | 1225 |
| 9. | 45 | 2025 |
| 10. | 30 | 900 |
| 11. | 60 | 3600 |
| 12. | 35 | 1225 |
| 13. | 20 | 400 |
| 14. | 40 | 1600 |
| 15. | 20 | 400 |
| 16. | 20 | 400 |
| 17. | 60 | 3600 |
| 18. | 25 | 625 |

| | 40 | 1600 |
|---|---|---|
| 19. | 40 | 1600 |
| 20. | 50 | 2500 |
| 21. | 35 | 1225 |
| 22. | 55 | 3025 |
| 23. | 40 | 1600 |
| 24. | 20 | 400 |
| 25. | 35 | 1225 |
| 26. | 40 | 1600 |
| **Total** | 980 | 41900 |

n $\quad$ = 26

$\sum xi = 980$

$\sum_{Xi} 2 = 41900$

So:

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

$$= \frac{26(41900) - (980)^2}{26(26-1)}$$

$$= \frac{1089400 - 960400}{26(25)}$$

$$= \frac{129000}{650}$$

$$= 198,46$$

B. Variant of the XI PI 2 class is:

| NO | Xi | Xi² |
|---|---|---|
| 1. | 50 | 2500 |
| 2. | 50 | 2500 |
| 3. | 25 | 625 |
| 4. | 20 | 400 |
| 5. | 65 | 4225 |
| 6. | 25 | 625 |
| 7. | 20 | 400 |
| 8. | 15 | 225 |
| 9. | 35 | 1225 |
| 10. | 20 | 400 |
| 11. | 15 | 225 |

| | | |
|---|---|---|
| 12. | 30 | 900 |
| 13. | 25 | 625 |
| 14. | 70 | 4900 |
| 15. | 15 | 225 |
| 16. | 35 | 1225 |
| 17. | 50 | 2500 |
| 18. | 15 | 225 |
| 19. | 40 | 1600 |
| 20. | 40 | 1600 |
| 21. | 50 | 2500 |
| 22. | 20 | 400 |
| 23. | 20 | 400 |
| 24. | 30 | 900 |
| 25. | 45 | 2025 |
| 26. | 65 | 4225 |
| **Total** | 890 | 37600 |

$N = 26$

$\Sigma xi = 890$

$\Sigma_{xi} 2 = 37600$

So:

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

$$= \frac{26\,(37600) - (890)^2}{26(26-1)}$$

$$= \frac{977600 - 792100}{26(25)}$$

$$= \frac{185500}{650}$$

$$= 285,384$$

The Formula was used to test the hypothesis was:

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

1. XI PI 1 and XI PI 2 :

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

So:

$$F = \frac{285,384}{198.46}$$

$$= 1.43$$

After doing the calculation, researcher found that $F_{count} = 1.43$. It had been compared to $F_{table}$ with $\alpha$ 5% and dk numerator and deminator were same ($n_1$ and $n_2 = 26$; dk = 26-1 = 25). From the distribution list F, researcher found that $F_{table} = 2,71$ so $F_{count} < F_{table}$ (1.43< 2.71). It could be concluded that there is no difference variant between the XI PI 1 class and XI PI 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 control class sample 1 and variant of the second class as experimental class sample 2 are used homogeneity test by using formula:

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

Hypotheses:

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

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

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

C. Variant of the XI PI 1 class is:

| NO | Xi | Xi$^2$ |
|-----|-----|--------|
| 1. | 85 | 7225 |
| 2. | 65 | 4225 |
| 3. | 80 | 6400 |
| 4. | 75 | 5625 |
| 5. | 75 | 5625 |
| 6. | 75 | 5625 |
| 7. | 80 | 6400 |
| 8. | 70 | 4900 |
| 9. | 70 | 4900 |
| 10. | 75 | 5625 |
| 11. | 65 | 4225 |
| 12. | 70 | 4900 |
| 13. | 70 | 4900 |
| 14. | 60 | 3600 |
| 15. | 55 | 3025 |
| 16. | 60 | 3600 |
| 17. | 75 | 5625 |

| | 70 | 4900 |
|---|---|---|
| 18. | 70 | 4900 |
| 19. | 70 | 4900 |
| 20. | 70 | 4900 |
| 21. | 70 | 4900 |
| 22. | 70 | 4900 |
| 23. | 75 | 5625 |
| 24. | 60 | 3600 |
| 25. | 70 | 4900 |
| 26. | 75 | 5625 |
| **Total** | **1835** | **130675** |

n = 26

$\sum xi = 1835$

$\sum_{Xi} 2 = 130675$

So:

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

$$= \frac{26(130675) - (1835)^2}{26(26-1)}$$

$$= \frac{3397550 - 3367225}{26(25)}$$

$$= \frac{30325}{650}$$

$$= 46.65$$

D. Variant of the XI PI 2 class is:

| NO | Xi | Xi² |
|---|---|---|
| 1. | 80 | 6400 |
| 2. | 85 | 7225 |
| 3. | 75 | 5625 |
| 4. | 70 | 4900 |
| 5. | 75 | 5625 |
| 6. | 70 | 4900 |
| 7. | 60 | 3600 |
| 8. | 60 | 3600 |
| 9. | 60 | 3600 |
| 10. | 70 | 4900 |

| | | |
|---|---|---|
| 11. | 75 | 5625 |
| 12. | 85 | 7225 |
| 13. | 75 | 5625 |
| 14. | 85 | 7225 |
| 15. | 70 | 4900 |
| 16. | 75 | 5625 |
| 17. | 85 | 7225 |
| 18. | 70 | 4900 |
| 19. | 65 | 4225 |
| 20. | 80 | 6400 |
| 21. | 75 | 5625 |
| 22. | 90 | 8100 |
| 23. | 65 | 4225 |
| 24. | 70 | 4900 |
| 25. | 75 | 5625 |
| 26. | 95 | 9025 |
| **Total** | **1940** | 146150 |

N = 26
$\sum xi = 1940$
$\sum_{xi} 2 = 146150$

So:

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

$$= \frac{26\,(146150) - (1940)^2}{26(26-1)}$$

$$= \frac{3799900 - 3763600}{26(25)}$$

$$= \frac{36300}{650}$$

$$= 55.84$$

The Formula was used to test the hypothesis was:

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

2. XI PI 1 and XI PI 2 :

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

So:

$$F = \frac{55.84}{46.65}$$

$$= 1.19$$

After doing the calculation, researcher found that $F_{count} = 1.19$. It had been compared to $F_{table}$ with $\alpha$ 5% and dk numerator and deminator were same ($n_1$ and $n_2 = 26$; dk = 26-1 = 25). From the distribution list F, researcher found that $F_{table} = 2.71$, so $F_{count} < F_{table}$ (1.19< 2.71). It could be concluded that there is no difference variant between the XI PI 1 class and XI PI 2 class. It means that the variant is homogenous.

**Appendix 21**

## RESULT OF NORMALITY TEST IN PRE TEST

### RESULT OF THE NORMALITY TEST OF XI PI 1 IN PRE-TEST

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

| 15 | 20 | 20 | 20 | 20 | 25 | 25 | 30 | 35 | 35 |
|----|----|----|----|----|----|----|----|----|----|
| 35 | 35 | 35 | 35 | 40 | 40 | 40 | 40 | 45 | 45 |
| 50 | 50 | 55 | 60 | 60 | 70 |    |    |    |    |

2. High      $= 70$

   Low       $= 15$

   Range     $= \text{High} - \text{Low}$

   $= 70 - 15$
   $= 55$

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

   $= 1 + 3{,}3 \log (26)$

   $= 1 + 3{,}3 (1.419)$

   $= 1 + 4.68$

   $= 5.68$

   $= 6$

4. Length of Classes $= \dfrac{range}{total\,of\,class}$ $= \dfrac{55}{6} = 9.17 = 9$

5. Mean

| Interval Class | F | X | $x'$ | $fx'$ | $x'^2$ | $fx'^2$ |
|----------------|----|----|----|----|----|----|
| 15 – 23 | 5 | 19 | 2 | 10 | 4 | 20 |
| 24 – 32 | 3 | 28 | 1 | 3 | 1 | 3 |
| 33 – 41 | 10 | **37** | 0 | 0 | 0 | 0 |
| 42 – 50 | 4 | 46 | -1 | -4 | 1 | 4 |
| 51 – 59 | 1 | 55 | -2 | -2 | 4 | 4 |
| 60 – 68 | 2 | 64 | -3 | -6 | 9 | 18 |
| 69 – 77 | 1 | 73 | -4 | -4 | 16 | 16 |
| $i = 9$ | 26 | - | - | -3 | | 65 |

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

$$= 37 + 9 \left(\frac{-3}{26}\right)$$

$$= 37 + 9 \ (-0.11)$$

$$= 37 + (-0.99)$$

$$= 36.01$$

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

$$= 9\sqrt{\frac{65}{26} - \left(\frac{-3}{26}\right)^2}$$

$$= 9\sqrt{2.5 - (-0.11)^2}$$

$$= 9\sqrt{2.5 - 0.012}$$

$$= 9\sqrt{2.48}$$

$$= 9 \times 1.57 = 14.13$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval of Score | Real Upper Limit | Z – Score | Limit of Large of the Area | Large of area | $f_h$ | $f_0$ | $\frac{(f_0-f_h)}{f_h}$ |
|---|---|---|---|---|---|---|---|
| | 77.5 | 2.93 | 0.4983 | | | | |
| 69 – 77 | | | | 0.009 | 0.23 | 1 | 3.34 |
| | 68.5 | 2.29 | 0.4890 | | | | |
| 60 – 68 | | | | 0.037 | 0.96 | 2 | 1.08 |
| | 59.5 | 1.66 | 0.4515 | | | | |
| 51 – 59 | | | | 0.105 | 2.37 | 1 | -0.57 |
| | 50.5 | 1.02 | 0.3461 | | | | |
| 42 – 50 | | | | 0.198 | 5.14 | 4 | -0.22 |
| | 41.5 | 0.38 | 0.1480 | | | | |
| 33 – 41 | | | | -0.257 | -6.68 | 10 | -2.49 |
| | 32.5 | -0.24 | 0.4051 | | | | |
| 24 – 32 | | | | 0.215 | 5.59 | 3 | -0.46 |
| | 23.5 | -0.88 | 0.1894 | | | | |
| 15 – 23 | | | | 0.125 | 3.25 | 5 | 0.53 |
| | 14.5 | -1.52 | 0.0642 | | | | |
| | | | | | | $X^2$ | 1.21 |

Based on the table above, the reseracher found that $x^2{}_{count} = 1.21$ while $x^2{}_{table} = 11.070$, cause $x^2{}_{count} < x^2{}_{table}$ (1.21< 11.070) with degree of freedom (dk) = 6–1 = 5 and significant level $\alpha = 5\%$. So distribution of XI PI 1 class (pre-test) is normal.

6. Median

| No | Interval | F | Fk |
|----|----------|-----|----|
| 1 | 15 – 23 | 5 | 5 |
| 2 | 24 – 32 | 3 | 8 |
| 3 | **33 – 41** | **10** | 18 |
| 4 | 42 – 50 | 4 | 22 |
| 5 | 51 – 59 | 1 | 23 |
| 6 | 60 – 68 | 2 | 25 |
| 7 | 69 – 77 | 1 | 26 |

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

Bb $= 32.5$

F $= 8$

fm $= 10$

i $= 9$

n $= 26$

1/2n= 13

So :

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

$$= 32.5 + 9\left(\frac{13-8}{10}\right)$$

$$= 32.5 + 9\,(0.5)$$

$$= 32.5 + 4.5$$

$$= 37$$

7. Modus

| No | Interval | F | Fk |
|----|----------|-----|-----|
| 1 | 15 – 23 | 5 | 5 |
| 2 | 24 – 32 | 3 | 8 |
| 3 | **33 – 41** | **10** | 18 |
| 4 | 42 – 50 | 4 | 22 |
| 5 | 51 – 59 | 1 | 23 |
| 6 | 60 – 68 | 2 | 25 |
| 7 | 69 – 77 | 1 | 26 |

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

$L \quad = 32.5$

$d_1 \quad = 7$

$d_2 \quad = 6$

$i \quad = 9$

So,

$M_o = 32.5 + \dfrac{7}{7+6} \, 9$

$\quad = 32.5 + 0.53 \,(9)$

$\quad = 32.5 + 4.77$

$\quad = 37.27$

## RESULT OF NORMALITY TEST IN PRE TEST

## RESULT OF THE NORMALITY TEST OF XI PI 2 IN PRE-TEST

1. The score of XI PI 2 class in pre test from low score to high score:

| 15 | 15 | 20 | 20 | 20 | 20 | 25 | 25 | 25 | 30 |
|----|----|----|----|----|----|----|----|----|----|
| 35 | 35 | 35 | 35 | 35 | 40 | 40 | 40 | 45 | 50 |
| 50 | 55 | 60 | 60 | 65 | 70 | | | | |

2. High $\quad = 75$

   Low $\quad = 15$

   Range $\quad$ = High – Low

   $\quad = 70 - 15$

   $\quad = 55$

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

$$= 1 + 3,3 \log (26)$$

$$= 1 + 3,3 \ (1.419)$$

$$= 1 + 4.68$$

$$= 5.68$$

$$= 6$$

4. Length of Classes $= \dfrac{range}{totalofclass}$ $= \dfrac{55}{6} = 9.16 = 9$

5. Mean

| Interval Class | F | X | x$'$ | fx$'$ | x$'^2$ | fx$'^2$ |
|---|---|---|---|---|---|---|
| 15 – 23 | 6 | 19 | 2 | 12 | 4 | 24 |
| 24 – 32 | 4 | 28 | 1 | 4 | 1 | 4 |
| 33 – 41 | **8** | **37** | 0 | 0 | 0 | 0 |
| 42 – 50 | 3 | 46 | -1 | -3 | 1 | 3 |
| 51 – 59 | 1 | 55 | -2 | -2 | 4 | 4 |
| 60 – 68 | 3 | 64 | -3 | -9 | 9 | 27 |
| 69 – 77 | 1 | 73 | -4 | -4 | 16 | 16 |
| $i = 9$ | 26 | - | - | -2 | - | 78 |

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

$$= 37 + 9 \ (\tfrac{-2}{26})$$

$$= 37 + 9 \ (-0.076)$$

$$= 37 + (-0.68)$$

$$= 37.68$$

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

$$= 9\sqrt{\frac{78}{26} - \left(\frac{-2}{26}\right)^2}$$

$$= 9\sqrt{3 - (-0.076)^2}$$

$$= 9\sqrt{3 - 0.005}$$

$$= 9\sqrt{2.99}$$

$$= 9 \times 1.72 = 15.48$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval of Score | Real Upper Limit | Z – Score | Limit of Large of the Area | Large of area | $f_h$ | $f_0$ | $\dfrac{(f_0 - f_h)}{f_h}$ |
|---|---|---|---|---|---|---|---|
| | 77.5 | 2.57 | 0.4949 | | | | |
| 69 – 77 | | | | 0.018 | 0.46 | 1 | 1.17 |
| | 68.5 | 1.99 | 0.4767 | | | | |
| 60 – 68 | | | | 0.057 | 1.48 | 3 | 1.02 |
| | 59.5 | 1.40 | 0.4192 | | | | |
| 51 – 59 | | | | 0.125 | 3.25 | 1 | -0.69 |
| | 50.5 | 0.82 | 0.2939 | | | | |
| 42 – 50 | | | | 0.199 | 5.17 | 3 | -0.41 |
| | 41.5 | 0.24 | 0.0948 | | | | |
| 33 – 41 | | | | -0.275 | -7.15 | 8 | -2.11 |
| | 32.5 | -0.33 | 0.3707 | | | | |
| 24 – 32 | | | | 0.189 | 4.91 | 4 | -0.18 |
| | 23.5 | -0.91 | 0.1814 | | | | |
| 15 – 23 | | | | 0.113 | 2.93 | 6 | 1.04 |
| | 14.5 | -1.49 | 0.0681 | | | | |
| | | | | | | $X^2$ | -0.16 |

Based on the table above, the reseracher found that $x^2{}_{count} = -0.16$ while $x^2{}_{table} = 11.070$, cause $x^2{}_{count} < x^2{}_{table}$ (-0.16 < 11.070) with degree of freedom (dk) = 6–1 = 5 and significant level $\alpha = 5\%$. So distribution of XI PI 1 class (pre-test) is normal.

6. Median

| No | Interval | F | Fk |
|---|---|---|---|
| 1 | 15 – 23 | 6 | 6 |
| 2 | 24 – 32 | 4 | 10 |
| 3 | **33 – 41** | **8** | 18 |
| 4 | 42 – 50 | 3 | 21 |
| 5 | 51 – 59 | 1 | 22 |
| 6 | 60 – 68 | 3 | 25 |
| 7 | 69 – 77 | 1 | 26 |

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

Bb  = 32.5

F   = 10

fm  = 8

i   = 9

n   = 26

1/2n= 13

So :

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

$$= 32.5 + 9\left( \frac{13 - 10}{8} \right)$$

$$= 32.5 + 9 \ (0.37)$$

$$= 32.5 + 3.37$$

$$= 35.87$$

7. Modus

| No | Interval | F | Fk |
|----|----------|---|----|
| 1 | 15 – 23 | 6 | 6 |
| 2 | 24 – 32 | 4 | 10 |
| 3 | **33 – 41** | **8** | 18 |
| 4 | 42 – 50 | 3 | 21 |
| 5 | 51 – 59 | 1 | 22 |
| 6 | 60 – 68 | 3 | 25 |
| 7 | 69 – 77 | 1 | 26 |

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

L   = 32.5

$d_1$  = 4

$d_2$  = 5

i   = 9

So,

$$M_o = 32.5 + \frac{4}{4+5} \ 9$$

$$= 32.5 + 0.44 \ (9)$$

$$= 32.5 + 3.96$$

$$= 36.46$$

**Appendix 22**

## RESULT OF NORMALITY TEST IN POST TEST

## RESULT OF THE NORMALITY TEST OF XI PI 1 IN POST-TEST

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

| 55 | 60 | 60 | 60 | 65 | 65 | 70 | 70 | 70 | 70 |
|----|----|----|----|----|----|----|----|----|----|
| 70 | 70 | 70 | 70 | 70 | 70 | 75 | 75 | 75 | 75 |
| 75 | 75 | 75 | 80 | 80 | 85 | | | | |

2. High = 85
   Low = 55
   Range = High – Low
   = 85 - 55
   = 30

3. Total of Classes = 1 + 3,3 log (n)
   = 1 + 3,3 log (26)
   = 1 + 3,3 (1.419)
   = 1 + 4.68
   = 5.68
   = 6

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

5. Mean

| Interval Class | F | X | $x'$ | $fx'$ | $x'^2$ | $fx'^2$ |
|----------------|----|----|----|----|----|----|
| 55 – 59 | 1 | 57 | 3 | 3 | 9 | 9 |
| 60 – 64 | 3 | 62 | 2 | 6 | 4 | 12 |
| 65 – 69 | 2 | 67 | 1 | 2 | 1 | 2 |
| 70 – 74 | **10** | **72** | 0 | 0 | 0 | 0 |
| 75 – 79 | 7 | 77 | -1 | -7 | 1 | 7 |
| 80 – 84 | 2 | 82 | -2 | -4 | 4 | 8 |
| 85 – 89 | 1 | 87 | -3 | -3 | 9 | 9 |
| $i = 5$ | 26 | | | -3 | | 47 |

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

$= 72 + 5 \left(\frac{-3}{26}\right)$

$= 72 + 5 \ (-0.11)$

$= 72 + (-0.55)$

$$= 71.45$$

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

$$= 5\sqrt{\frac{47}{26} - \left(\frac{-3}{26}\right)^2}$$
$$= 5\sqrt{1.80 - (-0.11)^2}$$
$$= 5\sqrt{1.80 - 0,01}$$
$$= 5\sqrt{1.79}$$
$$= 5 \text{ x } 1.33 = 6.6$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval of Score | Real Upper Limit | Z – Score | Limit of Large of the Area | Large of area | $f_h$ | $f_0$ | $\frac{(f_0 - f_h)}{f_h}$ |
|---|---|---|---|---|---|---|---|
| | 89.5 | 2.73 | 0.4968 | | | | |
| 85 – 89 | | | | 0.02 | 0.52 | 1 | 0.92 |
| | 84.5 | 1.97 | 0.4756 | | | | |
| 80 – 84 | | | | 0.08 | 2.08 | 2 | -0.03 |
| | 79.5 | 1.21 | 0.3869 | | | | |
| 75 – 79 | | | | 0.20 | 5.2 | 7 | 0.34 |
| | 74.5 | 0.46 | 0.1772 | | | | |
| 70 – 74 | | | | -0.20 | -5.2 | 10 | -2.92 |
| | 69.5 | -0.29 | 0.3859 | | | | |
| 65 – 69 | | | | 0.23 | 5.98 | 2 | -0.66 |
| | 64.5 | -1.05 | 0.1468 | | | | |
| 60 – 64 | | | | 0.11 | 2.86 | 3 | 0.04 |
| | 59.5 | -1.81 | 0.0351 | | | | |
| 55 – 59 | | | | 0.02 | 0.52 | 1 | 0.92 |
| | 54.5 | -2.56 | 0.0052 | | | | |
| | | | | | | $X^2$ | -1.39 |

Based on the table above, the reseracher found that $x^2_{count}$ = -1.39 while $x^2_{table}$ = 11.070, cause $x^2_{count} < x^2_{table}$ (-1.39 < 11.070) with degree of freedom (dk) = 6–1 = 5 and significant level $\alpha$ = 5%. So distribution of XI PI 1 class (post-test) is normal.

6. Median

| No | Interval | F | Fk |
|---|---|---|---|

| 1 | 55 – 59 | 1 | 1 |
|---|---------|---|---|
| 2 | 60 – 64 | 2 | 3 |
| 3 | 65 – 69 | 2 | 5 |
| 4 | **70 – 74** | **9** | 14 |
| 5 | 75 – 79 | 7 | 21 |
| 6 | 80 – 84 | 4 | 25 |
| 7 | 85 – 89 | 1 | 26 |

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

Bb  = 69.5
F    = 5
fm  = 9
i     = 5
n     = 26
1/2n=  13

So :

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

$$= 69.5 + 5 \left( \frac{13 - 5}{9} \right)$$
$$= 69.5 + 5 \ (0.88)$$
$$= 69.5 + 4.4$$
$$= 73.9$$

7. Modus

| No | Interval | F | Fk |
|----|----------|---|----|
| 1 | 55 – 59 | 1 | 1 |
| 2 | 60 – 64 | 2 | 3 |
| 3 | 65 – 69 | 2 | 5 |
| 4 | **70 – 74** | **9** | 14 |
| 5 | 75 – 79 | 7 | 21 |
| 6 | 80 – 84 | 4 | 25 |
| 7 | 85 – 89 | 1 | 26 |

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

L = 69.5

$d_1$ = 7

$d_2$ = 2

i = 5

So,

$$M_o = 69.5 + \frac{7}{7+2} 5$$

$$= 69.5 + 0.77 (5)$$

$$= 69.5 + 3.85$$

$$= 73.35$$

**RESULT OF NORMALITY TEST IN POST TEST**

**RESULT OF THE NORMALITY TEST OF XI PI 2 IN POST-TEST**

1. The score of XI PI 2 class in post test from low score to high score:

| 60 | 60 | 60 | 65 | 65 | 70 | 70 | 70 | 70 | 70 |
|----|----|----|----|----|----|----|----|----|----|
| 70 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 80 | 80 |
| 85 | 85 | 85 | 85 | 90 | 95 | | | | |

2. High = 95

   Low = 60

   Range = High – Low

   = 95 - 60

   = 35

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

   = 1 + 3,3 log (26)

   = 1 + 3,3 (1.419)

   = 1 + 4.68

   = 5.68

   = 6

4. Length of Classes $= \frac{range}{total of class} = \frac{35}{6} = 6$

5. Mean

| Interval Class | F | X | x$'$ | fx$'$ | x$'^2$ | fx$'^2$ |
|----------------|---|------|---|----|---|----|
| 60 – 65 | 5 | 62.5 | 2 | 10 | 4 | 20 |
| 66 – 71 | 6 | 68.5 | 1 | 6 | 1 | 6 |
| 72 – 77 | **7** | **74.5** | 0 | 0 | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 78 – 83 | 3 | 80.5 | -1 | -3 | 1 | 3 |
| 84 – 89 | 4 | 86.5 | -2 | -8 | 4 | 16 |
| 90 – 95 | 2 | 92.5 | -3 | -6 | 9 | 21 |
| $i = 6$ | 26 | - | | -1 | | 66 |

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

$$= 74.5 + 6\left(\frac{-1}{26}\right)$$

$$= 74.5 + 6\ (0.03)$$

$$= 74.5 + (0.18)$$

$$= 74.68$$

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

$$= 6\sqrt{\frac{66}{26} - \left(\frac{-1}{26}\right)^2}$$

$$= 6\sqrt{2.53 - (-0.03)^2}2.$$

$$= 6\sqrt{2.53 - 0.0009}$$

$$= 6\sqrt{2.52}$$

$$= 6 \times 1.58 = 9.48$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval of Score | Real Upper Limit | Z – Score | Limit of Large of the Area | Large of area | $f_h$ | $f_0$ | $\frac{(f_0 - f_h)}{f_h}$ |
|---|---|---|---|---|---|---|---|
| | 95.5 | 2.19 | 0.4857 | | | | |
| 90 – 95 | | | | 0.04 | 1.04 | 2 | 0.92 |
| | 89.5 | 1.56 | 0.4406 | | | | |
| 84 – 89 | | | | 0.11 | 2.86 | 4 | 0.39 |
| | 83.5 | 0.93 | 0.3238 | | | | |
| 78 – 83 | | | | 0.20 | 5.2 | 3 | -0.42 |
| | 77.5 | 0.29 | 0.1141 | | | | |
| 72 – 77 | | | | -0.25 | -6.5 | 7 | -2.07 |
| | 71.5 | -0.33 | 0.3707 | | | | |
| 66 – 71 | | | | 0.20 | 5.2 | 6 | 0.15 |
| | 65.5 | -0.96 | 0.1685 | | | | |
| 60 – 65 | | | | 0.11 | 2.86 | 5 | 0.74 |

| | 59.5 | -1.60 | 0.0548 | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | $X^2$ | -0.29 |

Based on the table above, the reseracher found that $x^2_{count}$ = -0.29 while $x^2_{table}$ = 11.070, cause $x^2_{count} < x^2_{table}$ (-0.29 < 11.070) with degree of freedom (dk) = 6–1 = 5 and significant level $\alpha$ = 5%. So distribution of XI PI 1 class (post-test) is normal.

6. Median

| No | Interval | F | Fk |
|---|---|---|---|
| 1 | 60 – 65 | 5 | 5 |
| 2 | 66 – 71 | 6 | 11 |
| 3 | **72 – 77** | **7** | **18** |
| 4 | 78 – 83 | 3 | 21 |
| 5 | 84 – 89 | 4 | 25 |
| 6 | 90 – 95 | 2 | 27 |

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

Bb = 71.5

F = 11

fm = 7

i = 6

n = 26

1/2n = 13

So :

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

$$= 71.5 + 6 \left( \frac{13-11}{7} \right)$$

$$= 71.5 + 6 \ (0.28)$$

$$= 71.5 + 1.68$$
$$= 73.18$$

7. Modus

| No | Interval | F | Fk |
|----|----------|---|-----|
| 1 | 60 – 65 | 5 | 5 |
| 2 | 66 – 71 | 6 | 11 |
| 3 | **72 – 77** | **7** | **18** |
| 4 | 78 – 83 | 3 | 21 |
| 5 | 84 – 89 | 4 | 25 |
| 6 | 90 – 95 | 2 | 27 |

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

L $= 71.5$

$d_1$ $= 1$

$d_2$ $= 4$

i $= 6$

So,

$M_o$ $= 71.5 + \dfrac{1}{1+4} \, 6$

$= 71.5 + 0.2 \, (6)$

$= 71.5 + 1.2$

$= 72.7$

**Appendix 23**

**T-test ofthe Both Averages in Pre-Test**

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

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

$$Tt = \frac{37.68 - 36.01}{\sqrt{\left(\dfrac{(26 - 1)15.48 + (26 - 1)14.13}{26 + 26 - 2}\right)\left(\dfrac{1}{26} + \dfrac{1}{26}\right)}}$$

$$Tt = \frac{1.67}{\sqrt{\left(\frac{25(15.48) + 25(14.13)}{50}\right)\left(\frac{2}{26}\right)}}$$

$$Tt = \frac{1.67}{\sqrt{\left(\frac{387 + 353.25}{50}\right)(0.07)}}$$

$$Tt = \frac{1.67}{\sqrt{(740.25)(0.07)}}$$

$$Tt = \frac{1.67}{\sqrt{51.8}}$$

$$Tt = \frac{1.67}{7.19}$$

$$Tt = 0.23$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that $t_{count}= 0.23$ with opportunity $(1-\alpha) = 1 - 5\% = 95\%$ and dk $= n_1 + n_2 - 2 = 26 + 26 - 2 = 50$, $t_{table} = 1.67591$. So, $t_{count} < t_{table} (0.23 < 1.67591)$ 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 24**
### T-test ofthe Both Averages in Post-Test

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

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

$$Tt = \frac{74.68 - 71.45}{\sqrt{\left(\frac{(26 - 1)9.48 + (26 - 1)6.6}{26 + 26 - 2}\right)\left(\frac{1}{26} + \frac{1}{26}\right)}}$$

$$Tt = \frac{3.23}{\sqrt{\left(\frac{25(9.48) + 25(6.6)}{50}\right)\left(\frac{2}{26}\right)}}$$

$$Tt = \frac{3.23}{\sqrt{\left(\frac{237 + 165}{50}\right)(0.07)}}$$

$$Tt = \frac{3.23}{\sqrt{(8.04)(0.07)}}$$

$$Tt = \frac{3.23}{\sqrt{0.56}}$$

$$Tt = \frac{3.23}{0.74}$$

$$Tt = 4.34$$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that $t_{count}= 4.34$ with opportunity $(1-\alpha) = 1 - 5\% = 95\%$ and dk $= n_1 + n_2 - 2 = 26 + 26 - 2 = 50$, $t_{table} =1.67591$. So, $t_{count}>t_{table}(4.34 >1.67591)$ and $H_a$ is accepted, it means there was difference the average between the first class as experimental class and the second class as control class in this research.

**Appendix 25**

**Chi-Square Table**

| dk | Significant level | | | | | |
|---|---|---|---|---|---|---|
| | **50%** | **30%** | **20%** | **10%** | **5%** | **1%** |
| **1** | 0,455 | 1,074 | 1,642 | 2,706 | 3,841 | 6,635 |
| **2** | 1,386 | 2,408 | 3,219 | 4,605 | 5,991 | 9,210 |
| **3** | 2,366 | 3,665 | 4,642 | 6,251 | 7,815 | 11,341 |
| **4** | 3,357 | 4,878 | 5,989 | 7,779 | 9,488 | 13,277 |
| **5** | 4,351 | 6,064 | 7,289 | 9,236 | 11,070 | 15,086 |
| **6** | 5,348 | 7,231 | 8,558 | 10,645 | 12,592 | 16,812 |
| **7** | 6,346 | 8,383 | 9,803 | 12,017 | 14,067 | 18,475 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | 7,344 | 9,524 | 11,030 | 13,362 | 15,507 | 20,090 |
| 9 | 8,343 | 10,656 | 12,242 | 14,684 | 16,919 | 21,666 |
| 10 | 9,342 | 11,781 | 13,442 | 15,987 | 18,307 | 23,209 |
| 11 | 10,341 | 12,899 | 14,631 | 17,275 | 19,675 | 24,725 |
| 12 | 11,340 | 14,011 | 15,812 | 18,549 | 21,026 | 26,217 |
| 13 | 12,340 | 15,119 | 16,985 | 19,812 | 22,362 | 27,688 |
| 14 | 13,339 | 16,222 | 18,151 | 21,064 | 23,685 | 29,141 |
| 15 | 14,339 | 17,222 | 19,311 | 22,307 | 24,996 | 30,578 |
| 16 | 15,338 | 18,418 | 20,465 | 23,542 | 26,296 | 32,000 |
| 17 | 16,338 | 19,511 | 21,615 | 24,769 | 27,587 | 33,409 |
| 18 | 17,338 | 20,601 | 22,760 | 25,989 | 28,869 | 34,805 |
| 19 | 18,338 | 21,689 | 23,900 | 27,204 | 30,144 | 36,191 |
| 20 | 19,337 | 22,775 | 25,038 | 28,412 | 31,410 | 37,566 |
| 21 | 20,337 | 23,858 | 26,171 | 29,615 | 32,671 | 38,932 |
| 22 | 21,337 | 24,939 | 27,301 | 30,813 | 33,924 | 40,289 |
| 23 | 22,337 | 26.018 | 28,429 | 32,007 | 35,172 | 41,638 |
| 24 | 23,337 | 27,096 | 29,553 | 33,196 | 35,415 | 42,980 |
| 25 | 24,337 | 28,172 | 30,675 | 34,382 | 37,652 | 44,314 |
| 26 | 25,336 | 29,246 | 31,795 | 35,563 | 38,885 | 45,642 |
| 27 | 26,336 | 30,319 | 32,912 | 36,741 | 40,113 | 46,963 |
| 28 | 27,336 | 31,391 | 34,027 | 37,916 | 41,337 | 48,278 |
| 29 | 28,336 | 32,461 | 35,139 | 39,087 | 42,557 | 49,588 |
| 30 | 29,336 | 33,530 | 36,250 | 40,256 | 43,773 | 50,892 |

**Appendix 26**

## Z-Table

| Z | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |
|---|---|---|---|---|---|---|---|---|---|---|
| -3.9 | 0.00005 | 0.00005 | 0.00004 | 0.00004 | 0.00004 | 0.00004 | 0.00004 | 0.00004 | 0.00003 | 0.00003 |
| -3.8 | 0.00007 | 0.00007 | 0.00007 | 0.00006 | 0.00006 | 0.00006 | 0.00006 | 0.00005 | 0.00005 | 0.00005 |
| -3.7 | 0.00011 | 0.00010 | 0.00010 | 0.00010 | 0.00009 | 0.00009 | 0.00008 | 0.00008 | 0.00008 | 0.00008 |
| -3.6 | 0.00016 | 0.00015 | 0.00015 | 0.00014 | 0.00014 | 0.00013 | 0.00013 | 0.00012 | 0.00012 | 0.00011 |
| -3.5 | 0.00023 | 0.00022 | 0.00022 | 0.00021 | 0.00020 | 0.00019 | 0.00019 | 0.00018 | 0.00017 | 0.00017 |
| -3.4 | 0.00034 | 0.00032 | 0.00031 | 0.00030 | 0.00029 | 0.00028 | 0.00027 | 0.00026 | 0.00025 | 0.00024 |
| -3.3 | 0.00048 | 0.00047 | 0.00045 | 0.00043 | 0.00042 | 0.00040 | 0.00039 | 0.00038 | 0.00036 | 0.00035 |
| -3.2 | 0.00069 | 0.00066 | 0.00064 | 0.00062 | 0.00060 | 0.00058 | 0.00056 | 0.00054 | 0.00052 | 0.00050 |

| | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |
|---|---|---|---|---|---|---|---|---|---|---|
| **-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** | **0.00** | **0.01** | **0.02** | **0.03** | **0.04** | **0.05** | **0.06** | **0.07** | **0.08** | **0.09** |
|---|---|---|---|---|---|---|---|---|---|---|
| **0.0** | 0.0000 | 0.0040 | 0.0080 | 0.0120 | 0.0160 | 0.0199 | 0.0239 | 0.0279 | 0.0319 | 0.0359 |
| **0.1** | 0.0398 | 0.0438 | 0.0478 | 0.0517 | 0.0557 | 0.0596 | 0.0636 | 0.0675 | 0.0714 | 0.0753 |
| **0.2** | 0.0793 | 0.0832 | 0.0871 | 0.0910 | 0.0948 | 0.0987 | 0.1026 | 0.1064 | 0.1103 | 0.1141 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **0.3** | 0.1179 | 0.1217 | 0.1255 | 0.1293 | 0.1331 | 0.1368 | 0.1406 | 0.1443 | 0.1480 | 0.1517 |
| **0.4** | 0.1554 | 0.1591 | 0.1628 | 0.1664 | 0.1700 | 0.1736 | 0.1772 | 0.1808 | 0.1844 | 0.1879 |
| **0.5** | 0.1915 | 0.1950 | 0.1985 | 0.2019 | 0.2054 | 0.2088 | 0.2123 | 0.2157 | 0.2190 | 0.2224 |
| **0.6** | 0.2257 | 0.2291 | 0.2324 | 0.2357 | 0.2389 | 0.2422 | 0.2454 | 0.2486 | 0.2517 | 0.2549 |
| **0.7** | 0.2580 | 0.2611 | 0.2642 | 0.2673 | 0.2704 | 0.2734 | 0.2764 | 0.2794 | 0.2823 | 0.2852 |
| **0.8** | 0.2881 | 0.2910 | 0.2939 | 0.2967 | 0.2995 | 0.3023 | 0.3051 | 0.3078 | 0.3106 | 0.3133 |
| **0.9** | 0.3159 | 0.3186 | 0.3212 | 0.3238 | 0.3264 | 0.3289 | 0.3315 | 0.3340 | 0.3365 | 0.3389 |
| **1.0** | 0.3413 | 0.3438 | 0.3461 | 0.3485 | 0.3508 | 0.3531 | 0.3554 | 0.3577 | 0.3599 | 0.3621 |
| **1.1** | 0.3643 | 0.3665 | 0.3686 | 0.3708 | 0.3729 | 0.3749 | 0.3770 | 0.3790 | 0.3810 | 0.3830 |
| **1.2** | 0.3849 | 0.3869 | 0.3888 | 0.3907 | 0.3925 | 0.3944 | 0.3962 | 0.3980 | 0.3997 | 0.4015 |
| **1.3** | 0.4032 | 0.4049 | 0.4066 | 0.4082 | 0.4099 | 0.4115 | 0.4131 | 0.4147 | 0.4162 | 0.4177 |
| **1.4** | 0.4192 | 0.4207 | 0.4222 | 0.4236 | 0.4251 | 0.4265 | 0.4279 | 0.4292 | 0.4306 | 0.4319 |
| **1.5** | 0.4332 | 0.4345 | 0.4357 | 0.4370 | 0.4382 | 0.4394 | 0.4406 | 0.4418 | 0.4429 | 0.4441 |
| **1.6** | 0.4452 | 0.4463 | 0.4474 | 0.4484 | 0.4495 | 0.4505 | 0.4515 | 0.4525 | 0.4535 | 0.4545 |
| **1.7** | 0.4554 | 0.4564 | 0.4573 | 0.4582 | 0.4591 | 0.4599 | 0.4608 | 0.4616 | 0.4625 | 0.4633 |
| **1.8** | 0.4641 | 0.4649 | 0.4656 | 0.4664 | 0.4671 | 0.4678 | 0.4686 | 0.4693 | 0.4699 | 0.4706 |
| **1.9** | 0.4713 | 0.4719 | 0.4726 | 0.4732 | 0.4738 | 0.4744 | 0.4750 | 0.4756 | 0.4761 | 0.4767 |
| **2.0** | 0.4772 | 0.4778 | 0.4783 | 0.4788 | 0.4793 | 0.4798 | 0.4803 | 0.4808 | 0.4812 | 0.4817 |
| **2.1** | 0.4821 | 0.4826 | 0.4830 | 0.4834 | 0.4838 | 0.4842 | 0.4846 | 0.4850 | 0.4854 | 0.4857 |
| **2.2** | 0.4861 | 0.4864 | 0.4868 | 0.4871 | 0.4875 | 0.4878 | 0.4881 | 0.4884 | 0.4887 | 0.4890 |
| **2.3** | 0.4893 | 0.4896 | 0.4898 | 0.4901 | 0.4904 | 0.4906 | 0.4909 | 0.4911 | 0.4913 | 0.4916 |
| **2.4** | 0.4918 | 0.4920 | 0.4922 | 0.4925 | 0.4927 | 0.4929 | 0.4931 | 0.4932 | 0.4934 | 0.4936 |
| **2.5** | 0.4938 | 0.4940 | 0.4941 | 0.4943 | 0.4945 | 0.4946 | 0.4948 | 0.4949 | 0.4951 | 0.4952 |
| **2.6** | 0.4953 | 0.4955 | 0.4956 | 0.4957 | 0.4959 | 0.4960 | 0.4961 | 0.4962 | 0.4963 | 0.4964 |
| **2.7** | 0.4965 | 0.4966 | 0.4967 | 0.4968 | 0.4969 | 0.4970 | 0.4971 | 0.4972 | 0.4973 | 0.4974 |
| **2.8** | 0.4974 | 0.4975 | 0.4976 | 0.4977 | 0.4977 | 0.4978 | 0.4979 | 0.4979 | 0.4980 | 0.4981 |
| **2.9** | 0.4981 | 0.4982 | 0.4982 | 0.4983 | 0.4984 | 0.4984 | 0.4985 | 0.4985 | 0.4986 | 0.4986 |
| **3.0** | 0.4987 | 0.4987 | 0.4987 | 0.4988 | 0.4988 | 0.4989 | 0.4989 | 0.4989 | 0.4990 | 0.4990 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **3,1** | 0,4990 | 0,4991 | 0,4991 | 0.4991 | 0,4992 | 0,4992 | 0,4992 | 0,4992 | 0,4993 | 0,4993 |
| **3,2** | 0,4993 | 0,4993 | 0,4994 | 0,4994 | 0,4994 | 0,4994 | 0,4994 | 0,4995 | 0,4995 | 0,4995 |
| **3,3** | 0,4995 | 0,4995 | 0,4995 | 0,4996 | 0,4996 | 0,4996 | 0,4996 | 0,4996 | 0,4997 | 0,4997 |
| **3,4** | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4997 | 0,4998 |
| **3,5** | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 | 0,4998 |
| **3,6** | 0,4998 | 0,4998 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 |
| **3,7** | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 |
| **3,8** | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 | 0,4999 |
| **3,9** | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 | 0,5000 |

**Appendix 27**

## Percentage Points of the t Distribution

| Pr df | 0.25 0.50 | 0.10 0.20 | 0.05 0.10 | 0.025 0.050 | 0.01 0.02 | 0.005 0.010 | 0.001 0.002 |
|---|---|---|---|---|---|---|---|
| 1 | 1.00000 | 3.07768 | 6.31375 | 12.70620 | 31.82052 | 63.65674 | 318.30884 |
| 2 | 0.81650 | 1.88562 | 2.91999 | 4.30265 | 6.96456 | 9.92484 | 22.32712 |
| 3 | 0.76489 | 1.63774 | 2.35336 | 3.18245 | 4.54070 | 5.84091 | 10.21453 |
| 4 | 0.74070 | 1.53321 | 2.13185 | 2.77645 | 3.74695 | 4.60409 | 7.17318 |
| 5 | 0.72669 | 1.47588 | 2.01505 | 2.57058 | 3.36493 | 4.03214 | 5.89343 |
| 6 | 0.71756 | 1.43976 | 1.94318 | 2.44691 | 3.14267 | 3.70743 | 5.20763 |
| 7 | 0.71114 | 1.41492 | 1.89458 | 2.36462 | 2.99795 | 3.49948 | 4.78529 |
| 8 | 0.70639 | 1.39682 | 1.85955 | 2.30600 | 2.89646 | 3.35539 | 4.50079 |
| 9 | 0.70272 | 1.38303 | 1.83311 | 2.26216 | 2.82144 | 3.24984 | 4.29681 |
| 10 | 0.69981 | 1.37218 | 1.81246 | 2.22814 | 2.76377 | 3.16927 | 4.14370 |
| 11 | 0.69745 | 1.36343 | 1.79588 | 2.20099 | 2.71808 | 3.10581 | 4.02470 |
| 12 | 0.69548 | 1.35622 | 1.78229 | 2.17881 | 2.68100 | 3.05454 | 3.92963 |
| 13 | 0.69383 | 1.35017 | 1.77093 | 2.16037 | 2.65031 | 3.01228 | 3.85198 |
| 14 | 0.69242 | 1.34503 | 1.76131 | 2.14479 | 2.62449 | 2.97684 | 3.78739 |
| 15 | 0.69120 | 1.34061 | 1.75305 | 2.13145 | 2.60248 | 2.94671 | 3.73283 |
| 16 | 0.69013 | 1.33676 | 1.74588 | 2.11991 | 2.58349 | 2.92078 | 3.68615 |
| 17 | 0.68920 | 1.33338 | 1.73961 | 2.10982 | 2.56693 | 2.89823 | 3.64577 |
| 18 | 0.68836 | 1.33039 | 1.73406 | 2.10092 | 2.55238 | 2.87844 | 3.61048 |
| 19 | 0.68762 | 1.32773 | 1.72913 | 2.09302 | 2.53948 | 2.86093 | 3.57940 |
| 20 | 0.68695 | 1.32534 | 1.72472 | 2.08596 | 2.52798 | 2.84534 | 3.55181 |
| 21 | 0.68635 | 1.32319 | 1.72074 | 2.07961 | 2.51765 | 2.83136 | 3.52715 |
| 22 | 0.68581 | 1.32124 | 1.71714 | 2.07387 | 2.50832 | 2.81876 | 3.50499 |
| 23 | 0.68531 | 1.31946 | 1.71387 | 2.06866 | 2.49987 | 2.80734 | 3.48496 |
| 24 | 0.68485 | 1.31784 | 1.71088 | 2.06390 | 2.49216 | 2.79694 | 3.46678 |
| 25 | 0.68443 | 1.31635 | 1.70814 | 2.05954 | 2.48511 | 2.78744 | 3.45019 |
| 26 | 0.68404 | 1.31497 | 1.70562 | 2.05553 | 2.47863 | 2.77871 | 3.43500 |
| 27 | 0.68368 | 1.31370 | 1.70329 | 2.05183 | 2.47266 | 2.77068 | 3.42103 |
| 28 | 0.68335 | 1.31253 | 1.70113 | 2.04841 | 2.46714 | 2.76326 | 3.40816 |
| 29 | 0.68304 | 1.31143 | 1.69913 | 2.04523 | 2.46202 | 2.75639 | 3.39624 |
| 30 | 0.68276 | 1.31042 | 1.69726 | 2.04227 | 2.45726 | 2.75000 | 3.38518 |
| 31 | 0.68249 | 1.30946 | 1.69552 | 2.03951 | 2.45282 | 2.74404 | 3.37490 |
| 32 | 0.68223 | 1.30857 | 1.69389 | 2.03693 | 2.44868 | 2.73848 | 3.36531 |
| 33 | 0.68200 | 1.30774 | 1.69236 | 2.03452 | 2.44479 | 2.73328 | 3.35634 |
| 34 | 0.68177 | 1.30695 | 1.69092 | 2.03224 | 2.44115 | 2.72839 | 3.34793 |
| 35 | 0.68156 | 1.30621 | 1.68957 | 2.03011 | 2.43772 | 2.72381 | 3.34005 |
| 36 | 0.68137 | 1.30551 | 1.68830 | 2.02809 | 2.43449 | 2.71948 | 3.33262 |
| 37 | 0.68118 | 1.30485 | 1.68709 | 2.02619 | 2.43145 | 2.71541 | 3.32563 |
| 38 | 0.68100 | 1.30423 | 1.68595 | 2.02439 | 2.42857 | 2.71156 | 3.31903 |
| 39 | 0.68083 | 1.30364 | 1.68488 | 2.02269 | 2.42584 | 2.70791 | 3.31279 |
| 40 | 0.68067 | 1.30308 | 1.68385 | 2.02108 | 2.42326 | 2.70446 | 3.30688 |

# Percentage Points of the t Distribution

| Pr<br>df | 0.25<br>0.50 | 0.10<br>0.20 | 0.05<br>0.10 | 0.025<br>0.050 | 0.01<br>0.02 | 0.005<br>0.010 | 0.001<br>0.002 |
|---|---|---|---|---|---|---|---|
| 41 | 0.68052 | 1.30254 | 1.68288 | 2.01954 | 2.42080 | 2.70118 | 3.30127 |
| 42 | 0.68038 | 1.30204 | 1.68195 | 2.01808 | 2.41847 | 2.69807 | 3.29595 |
| 43 | 0.68024 | 1.30155 | 1.68107 | 2.01669 | 2.41625 | 2.69510 | 3.29089 |
| 44 | 0.68011 | 1.30109 | 1.68023 | 2.01537 | 2.41413 | 2.69228 | 3.28607 |
| 45 | 0.67998 | 1.30065 | 1.67943 | 2.01410 | 2.41212 | 2.68959 | 3.28148 |
| 46 | 0.67986 | 1.30023 | 1.67866 | 2.01290 | 2.41019 | 2.68701 | 3.27710 |
| 47 | 0.67975 | 1.29982 | 1.67793 | 2.01174 | 2.40835 | 2.68456 | 3.27291 |
| 48 | 0.67964 | 1.29944 | 1.67722 | 2.01063 | 2.40658 | 2.68220 | 3.26891 |
| 49 | 0.67953 | 1.29907 | 1.67655 | 2.00958 | 2.40489 | 2.67995 | 3.26508 |
| 50 | 0.67943 | 1.29871 | 1.67591 | 2.00856 | 2.40327 | 2.67779 | 3.26141 |
| 51 | 0.67933 | 1.29837 | 1.67528 | 2.00758 | 2.40172 | 2.67572 | 3.25789 |
| 52 | 0.67924 | 1.29805 | 1.67469 | 2.00665 | 2.40022 | 2.67373 | 3.25451 |
| 53 | 0.67915 | 1.29773 | 1.67412 | 2.00575 | 2.39879 | 2.67182 | 3.25127 |
| 54 | 0.67906 | 1.29743 | 1.67356 | 2.00488 | 2.39741 | 2.66998 | 3.24815 |
| 55 | 0.67898 | 1.29713 | 1.67303 | 2.00404 | 2.39608 | 2.66822 | 3.24515 |
| 56 | 0.67890 | 1.29685 | 1.67252 | 2.00324 | 2.39480 | 2.66651 | 3.24226 |
| 57 | 0.67882 | 1.29658 | 1.67203 | 2.00247 | 2.39357 | 2.66487 | 3.23948 |
| 58 | 0.67874 | 1.29632 | 1.67155 | 2.00172 | 2.39238 | 2.66329 | 3.23680 |
| 59 | 0.67867 | 1.29607 | 1.67109 | 2.00100 | 2.39123 | 2.66176 | 3.23421 |
| 60 | 0.67860 | 1.29582 | 1.67065 | 2.00030 | 2.39012 | 2.66028 | 3.23171 |
| 61 | 0.67853 | 1.29558 | 1.67022 | 1.99962 | 2.38905 | 2.65886 | 3.22930 |
| 62 | 0.67847 | 1.29536 | 1.66980 | 1.99897 | 2.38801 | 2.65748 | 3.22696 |
| 63 | 0.67840 | 1.29513 | 1.66940 | 1.99834 | 2.38701 | 2.65615 | 3.22471 |
| 64 | 0.67834 | 1.29492 | 1.66901 | 1.99773 | 2.38604 | 2.65485 | 3.22253 |
| 65 | 0.67828 | 1.29471 | 1.66864 | 1.99714 | 2.38510 | 2.65360 | 3.22041 |
| 66 | 0.67823 | 1.29451 | 1.66827 | 1.99656 | 2.38419 | 2.65239 | 3.21837 |
| 67 | 0.67817 | 1.29432 | 1.66792 | 1.99601 | 2.38330 | 2.65122 | 3.21639 |
| 68 | 0.67811 | 1.29413 | 1.66757 | 1.99547 | 2.38245 | 2.65008 | 3.21446 |
| 69 | 0.67806 | 1.29394 | 1.66724 | 1.99495 | 2.38161 | 2.64898 | 3.21260 |
| 70 | 0.67801 | 1.29376 | 1.66691 | 1.99444 | 2.38081 | 2.64790 | 3.21079 |
| 71 | 0.67796 | 1.29359 | 1.66660 | 1.99394 | 2.38002 | 2.64686 | 3.20903 |
| 72 | 0.67791 | 1.29342 | 1.66629 | 1.99346 | 2.37926 | 2.64585 | 3.20733 |
| 73 | 0.67787 | 1.29326 | 1.66600 | 1.99300 | 2.37852 | 2.64487 | 3.20567 |
| 74 | 0.67782 | 1.29310 | 1.66571 | 1.99254 | 2.37780 | 2.64391 | 3.20406 |
| 75 | 0.67778 | 1.29294 | 1.66543 | 1.99210 | 2.37710 | 2.64298 | 3.20249 |
| 76 | 0.67773 | 1.29279 | 1.66515 | 1.99167 | 2.37642 | 2.64208 | 3.20096 |
| 77 | 0.67769 | 1.29264 | 1.66488 | 1.99125 | 2.37576 | 2.64120 | 3.19948 |
| 78 | 0.67765 | 1.29250 | 1.66462 | 1.99085 | 2.37511 | 2.64034 | 3.19804 |
| 79 | 0.67761 | 1.29236 | 1.66437 | 1.99045 | 2.37448 | 2.63950 | 3.19663 |
| 80 | 0.67757 | 1.29222 | 1.66412 | 1.99006 | 2.37387 | 2.63869 | 3.19526 |
| ∞ | | | | | | | |

**APPENDIX 28**

<div align="center">

**RESEARCH DOCUMENTATION**

</div>

09 November 2018

or : 201 /In.14/E.6a/PP.00.9/11/2018

: -

al : **Pengesahan Judul dan Pembimbing Skripsi**

Kepada Yth:
1.**Eka Sustri Harida, M. Pd**          **(Pembimbing I)**
2.**Fitri Rayani Siregar, M. Hum**       **(Pembimbing II)**

di–Padangsidimpuan

Assalamu'alaikum Wr. Wb.

Dengan hormat, sehubungan dengan hasil sidang bersama tim pengkaji judul skripsi jurusan Tadris Bahasa Inggris (TBI) Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidimpuan. Maka dengan ini kami mohon kepada Bapak/Ibu agar dapat menjadi pembimbing skripsi dan melakukan penyempurnaan judul bilamana perlu untuk mahasiswa dibawah ini dengan data sebagai berikut:

Nama            : Miranti
NIM             : 1520300054
Fak/Jurusan     : Tarbiyah dan Ilmu Keguruan/ Tadris Bahasa Inggris
Judul Skripsi   : **The Effect of Read,Encode,Annotate and Ponder (REAP) Strategy to Analytical Exposition Text Comprehension of Students SMA Swasta Nurul Ilmi Padangsidimpuan.**

Demikian disampaikan, atas kesediaan dan kerjasama yang baik dari Bapak/Ibu kami ucapkan terima kasih.

Ketua Program Studi Tadris Bahasa Inggris

**Rayendriani Fahmei Lubis, M. Ag.**
NIP. 19710510 200003 2 001

PERNYATAAN KESEDIAAN SEBAGAI PEMBIMBING

SEDIA/TIDAK BERSEDIA              BERSEDIA/TIDAK BERSEDIA
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**INSTITUT AGAMA ISLAM NEGERI PADANGSIDIMPUAN**
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Telepon (0634) 22080 Faximile (0634) 24022

Nomor : B - 700    /In.14/E/TL.00/05/2019          27  Mei 2019
Hal   : Izin Penelitian
        Penyelesaian Skripsi.

Yth. Kepala SMA Swasta Nurui Ilmi Padangsidimpuan
Kota Padangsidimpuan

Dengan hormat, bersama ini kami sampaikan bahwa :

Nama            : Miranti
NIM             : 1520300054
Program Studi   : Tadris/Pendidikan Bahasa Inggris
Fakultas        : Tarbiyah dan Ilmu Keguruan
Alamat          : Sibaga

adalah Mahasiswa Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidimpuan yang sedang menyelesaikan Skripsi  dengan Judul "The Effect of Using Read, Encode, Annotate and Ponder (REAP) Strategy to Students' Reading Comprehension at Grade XI SMA Swasta Nurul Ilmi Padangsidimpuan".

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

Demikian disampaikan, atas kerja sama yang baik diucapkan terimakasih.

Dekan

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

## SURAT KETERANGAN
Nomor : 019/ YPIBMMNI-SMANI/ P.16/ VII/ 2019

bertanda tangan di bawah ini :

Nama : Drs. H. M. IRSYAD HASIBUAN

Jabatan : Kepala Sekolah

Pada Sekolah : SMA Swasta Nurul 'Ilmi Padangsidimpuan

n ini menerangkan :

Nama : MIRANTI

Tempat/ Tgl Lahir : Hutabalang/ 23 Mei 1997

Jenis Kelamin : Perempuan

NIM : 1520300054

Jurusan / Program Studi : Tadris/ Pendidikan Bahasa Inggris

Alamat : Sibolga

Jenjang Pendidikan : S1

Judul Tugas Akhir : **"The Effect of Read, Encode, Annotate and Ponder (REAP) strategy to Comprehend Analytical Exposition text at Grade XI students of SMA Swasta Nurul 'Ilmi Padangsidimpuan"**

dengan surat Institut Agama Islam Negeri Padangsidimpuan Nomor : B-700/ In. 14/ 00/ 05/ 2019, Tanggal 27 Mei 2019, yang bersangkutan benar telah mengadakan mbilan data di SMA Swasta Nurul' Ilmi pada Tanggal 10, 11, 12 Juni 2019 .

dan surat keterangan ini di perbuat dengan sebenarnya untuk dapat digunakan imana perlunya.

puan, 30 Juli 2019

Drs. H. M. IRSYAD HASIBUAN