



**THE EFFECT OF SMALL GROUP DISCUSSION TECHNIQUE
ON STUDENTS' READING COMPREHENSION
AT GRADE VIII SMP NEGERI 8 PADANGSIDIMPUAN**

A THESIS

*Submitted to the state Institute for Islamic Studies Padangsidempuan as
a Partial Fulfillment of the Requirement for the Graduate Degree of
Education (S.Pd) in English*

**Written By:
AYU SEPRIANI HARAHAP
Reg. Number. 13 340 0042**

ENGLISH EDUCATIONAL DEPARTMENT

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

2017



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Assalamu'alaikum Wr. Wb

After reading, studying and giving advice for necessary revision on thesis belong to Ayu Sepriani Harahap, entitled "*The Effect of Small Group Discussion Technique on Students' Reading Comprehension at Grade VIII of SMP Negeri 8 Padangsidempuan*", we assume that the thesis has been acceptable to complete the requirement to fulfill for the degree of Education (S.Pd), in English Educational Department of Tarbiyah and Teacher Training Faculty in IAIN Padangsidempuan.

Therefore, we hope that the thesis will soon be examined in front of the Thesis Examiner Team of E.Dept. of Tarbiyah and Teacher Training Faculty IAIN Padangsidempuan. Thank you.

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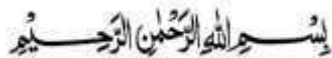
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I realize this thesis cannot be considered perfect without critiques and suggestions. Therefore, it is such a pleasure for me to get critiques and suggestions from the readers to make this thesis better.

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ABSTRACT

This research focused on the effect of small group discussion technique on students' reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan. The purpose of this research was to know whether there is the significant effect of small group discussion technique at grade VIII SMP Negeri 8 Padangsidimpuan.

The method used in this research was experimental research. Two classes were chosen randomly as the sample. They were VIII-2 as experimental class that consisted of 26 students and VIII-3 as control class that consisted of 26 students. It was taken after conducting normality and homogeneity test. The data was derived from pre-test and post-test. To analyze the data, the researcher used t-test formula.

After analyzing the data, the researcher found that mean score of experimental class after using small group discussion technique was higher than control class. Mean score of experimental class before using small group discussion technique was 47 and mean score after using small group discussion technique was 83.9. Meanwhile, the mean score of control class in post test was 71.94. Besides it, the score of t_{count} was bigger than t_{table} ($4.16 > 1.29871$). It meant that the hypothesis alternative (H_a) was accepted. It was concluded that there was a significant effect of small group discussion technique on students' reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan.

Key words: Small group discussion technique, reading comprehension, students' grade VIII SMP Negeri 8 Padangsidimpuan.

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CHAPTER I

INTRODUCTION

A. Background of the Problem

There are many languages in the world. One of them is English, which taught as a foreign language in school. It is an important language which is studied by students at school till university so they can communicate by using English. It is used by many people in the world. They use it not only for trade association but also for scientific terminologies. English have mushroom in every part of the world and become universal language because it is use by almost all countries, even in some countries have become primary language or have become the standard language use in everyday life whether in government, social, and other formal institution.

English is not only as the international language, but also one of basic lesson at the curriculum of the study in Indonesia. Studying English is very important for developing students' ability in mastering and for adding students' knowledge about language. Now, in Indonesia have studied about English. It started from Junior High School, and it include in curriculum and syllabus of education.

In Indonesia's curriculum, there are four language skills that should be mastered by the students; they are listening, speaking, reading and writing. In National Education Standard reading is one of the skills that were very important in language learning. It was one fundamental of educational curriculum in

Indonesia lies in Construction of National Education (UU DIKNAS) in chapter IX, and also in Government Regulation (Peraturan Pemerintah) No.19 2005.¹

Reading is one way to get the information from something that was written. In students' life, reading has importance to be used such as: enriching knowledge, developing capacity of thinking, and improving self-confidence. The following illustrations will provide the utility of reading in students' life.

The first is reading has an important role to enrich knowledge, especially for the students. It is the process of finding and adding much information through read of books, articles, magazines, journals, and newspaper. Students can add many information that are provided in written form available on various topics, such as education, society, business, politics, economics, religion, and culture. By reading, students are able to know what kinds of situation in the world.

The second is reading as one basic activity to develop capacity of thinking. It is commonly said that reading can increase cognitive abilities. Reading is an activity or thinking process of cognition. It occurs when students accommodate the words or scheme in the students' brain. Reading also in an interaction among the reader, the situation, the task, and the text that results in construction of meaning.² Students can use information already acquired to filter, interpret, organize, reflect upon and establish relationships with the new

¹Departemen Pendidikan Nasional "Standard Pendidikan Nasional" accessed from <http://www.dikti.go.id> at August 11th, 2017 on 15.20 p.m.

²Gaskins, Satlow, and M. Pressley, Executive Control of Reading Comprehension in the Elementary School, In L. Meltzer (Ed.), *Executive Function in education: from Theory to Practice*, (New York: Guilford, 1990), p. 194.

incoming information on the page. Hence, students are able to identify words rapidly, know the meaning of almost all of the words and able to combine units of meaning into a coherent message.

The last is reading can improve students' self-confidence. Student who has a lot of knowledge or information from what they have read. Automatically, students has ability to speak well and of course more capable than others. Then, they do not doubt to express idea, thought, opinions, and perceptions to other because they believe that what they have just said have reference. So that reading makes them confident.

Reading is one of the English subject matter in syllabus SMP Negeri 8 Padangsidempuan. Syllabus is setting the stage for course development and management. Syllabus describes the major elements that will be used in planning a language course and provides the basis for its instructional focus and content.³ English subject in SMP Negeri 8 Padangsidempuan is the students are expected to understand the meaning of written functional text and short simple essay formed descriptive, narrative and recount text.⁴ Ideally the students should be able to read aloud with acceptable pronunciation and intonation, response rhetorical way accurately and fluently in the from descriptive, narrative and recount text and they must comprehend the text deeply to find the main idea,

³Jack C.Richard, *Curriculum Development in Language Teaching* (Amerika: The Press Syndicate of The University of Cambridge, 2001), p. 152.

⁴English Syllabus of Grade VIII Students at SMP Negeri 8 Padangsidempuan.

meaning of words on the text, detail information, reference, and mention the purpose or generic structure of the text.

In the pre-research at VIII grade students of SMP Negeri 8 Padangsidimpuan, the researcher could identify problem faced by the eight grade student of VIII in learning reading comprehension. The researcher also directly asked the classroom teacher whether reading use a real problem in her classroom activity. From the students' competence aspect, they still got difficulties in five aspect of reading comprehension as follow: the students got difficulty in finding the main idea, the students got difficulty in finding meaning of certain word, the students got difficulty in locating reference, and the students got difficulty in understanding text organization (social function and generic structure of text). In addition, the class situation was not alive. It was shown as follow; the students tended to be passive learners, only certain students who were active, the students got bored in the middle of teaching and learning process, the students have low motivation and less confidence in joining reading class.

From the problem above were caused by the students and the teacher. First, the cause from the students as follow: they did not have enough vocabulary, they were afraid and did not joining in the reading class, they did not use opportunity to share or discuss what they have read with their friends because they studied reading text individually. Therefore, students' reading comprehension achievement do not fulfill the expectation. Second, the cause from the teacher as follow: the teacher did not implement a reading teaching

technique that involved all students active, the teacher usually discussed the text with whole class. Consequently, the students did not have opportunity to share or discuss what they had read with their friends and could not comprehend the text deeply.

Based on the fact above, teacher's creativity to provide appropriate teaching technique is needed to overcome those problems. It is important to be realize that the results of teaching and learning process are not only determined by teacher's and student's competence, but influence by the use of the teaching technique. There are many teaching technique for reading comprehension. However, the technique chosen in reading comprehensio must be suitable with the purpose of teaching and the conditions of students. One of techniques that can be implimented by teacher especially to teach reading is small group discussion.

Small group discussion technique is divide the large classroom into small group of students to achieve specific objectives permits students to assume more responsibility for their own learning, develop social and leadership skills and become involved in an alternative instructional approach.⁵ It means the small group discussion is the method which consists of two or more persons in small group for exchange of thought orally to achieve a result in team work. So, small

⁵ R. Kindsvatter. et.al , *Dynamic of Effective Teaching*,(London: Longman Published Ltd, 1996), p.242

group discussion technique has given the effect to the researcher that has been done by the researcher or the other researcher who mentioned in related finding.

Based on the explanation above, the researcher is interest to introduce small group discussion technique to teach reading in the classroom. Small group discussion technique helps students to exchange of thought orally to achieve a result in team work, and they can take assume more responsibility for their own learning, develop social and leadership skill and become involved in an alternative instruction approach. This reason finally guided the researcher to formulate the title “*The Effect of Small Group Discussion Technique on Students’ Reading Comprehension at Grade VIII SMP Negeri 8 Padangsidimpuan*”.

B. Identification of the Problem

Based on the title and background of the problems, the researcher had found some problems on students’ reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan as following:

1. The students have low achievement in reading comprehension.
2. The students do not have many vocabularies.
3. The students do not use opportunity to share or discuss what they have read with their friends.
4. The students do not have good technique in reading or they do not know reading technique well.
5. The teacher does not implement a reading technique that involved all students active.

C. Limitation of the Problem

Based on the identification above, the researcher limits the problem on number 4, it is about reading technique and want to know the influence to reading comprehension achievement by using narrative text. Because of the limitation of the researcher's time, ability and cost, so the researcher focused in small group discussion technique. This research is conducted by experimental research at grade VIII SMP Negeri 8 Padangsidimpuan, the first semester in the academic year 2017/2018.

D. Formulation of the Problem

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

1. How far is students' reading comprehension before using small group discussion technique at grade VIII SMP Negeri 8 Padangsidimpuan?
2. How far is students' reading comprehension after using small group discussion technique at grade VIII SMP Negeri 8 Padangsidimpuan?
3. Is there any significant effect of small group discussion technique on students' reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan?

E. Purpose of the Research

Based on the formulation above, the aim of this research are:

1. To examine the students' reading comprehension before using small group discussion technique at grade VIII SMP Negeri 8 Padangsidimpuan.

2. To examine the students' reading comprehension after using small group discussion technique at grade VIII SMP Negeri 8 Padangsidimpuan.
3. To examine the significant effect of small group discussion on student reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan.

F. Significance of the Research

The research expert to be significances as follows:

1. For the headmaster of SMP Negeri 8 Padangsidimpuan to give the direction to the English teacher about the small group discussion strategies to learn reading comprehension.
2. For the English teacher as an input in teaching reading skill, especially teaching reading comprehension.
3. For further researchers who will conduct further research in the same topic.

G. Definition of Operational Variables

The definitions of variables in this research are follows:

1. Small Group Discussion Technique (Variable X)

Small group discussion technique is one of the cooperative learning techniques in which students work in groups of three or four. A small group is a smaller member of human, work together through interaction whose interdependent relationship allows them to achieve a mutual goal.

2. Reading Comprehension (Variable Y)

Reading comprehension is a fluent process of reader combining information from a text and their own background knowledge to build meaning.

H. Outline of the Thesis

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

1. In chapter one, consisted of background of the problem, research objecties, research significances, defenition of operational variabel.
2. In chapter two, consisted of theoritical description, which consist sub schapter such as theoritical review consist of defenition small group discussion and reading comprehension. Then review of related finding, and conceptual framework, hypothesis.
3. In chapter three, consisted of the result of the research whichh consist of description of the data, the testing of hypothesis, the result of research.
4. In chapter four, consisted of data description, hypothesis testing, discussion and the threats of research
5. In chapter five, consisted of conclusion about the result of this research and suggestions that were given by the research.

CHAPTER II

THEORETICAL DESCRIPTION

A. Theoretical Description

1. Reading Comprehension

a. Definition of Reading Comprehension

The major concern about reading is not how to teach the students to read but how to ensure that the students will continue to read in improving students' comprehension. Reading comprehension is an ability to students to become effective reader. Basically, reading comprehension is an ability to understand what the readers read where words have context and texts have meaning.¹ It means that reading comprehension not only know what the reader read but also understand the text fully.

Reading comprehension is way to get the idea from text. Comprehension the text can be seen from evaluation with student's knowledge. According to Goodman in Otto states that "reading comprehension is an interaction between thought and language and bases evaluation of success in comprehension on the extent to which the readers' reconstructed message agrees with the writers' intended message".² Furthermore, Malley indicates "reading comprehension is

¹ K. M Robel, *Developing Reading Comprehension Skills in EFL University Level Students* (St. John's University: Taiwan, 2003), p. 177.

² Wayne Otto, et.al., *How to Teach Reading*, (America: Addison-Wesley Publishing Company, 1979), p. 151.

knowledge of language or print”.³ It means that reading comprehension not only understands the text, but the reader must construct message what the writer grafts in a text and it entails making inferences and evaluating what is read.

Further, Tarigan gives the definition of reading comprehension; it is reading activity that interpreting the experience in connecting new information with the prior knowledge, and also to answer to cognitive question.⁴ Research has shown a consistent positive and mutually supportive, relationship prior knowledge and reading comprehension.

Based explanation above, the researcher can conclude that reading comprehension is how to comprehend a written material that containing some information to find what the readers want to know and also the information they need. Reading and comprehension cannot be separated, because the readers need comprehension to get the information from a text. It means reading without comprehension is nonsense.

b. Purpose of Reading Comprehension

The main goals of reading are to get and find information include content and meaning of the text based on the purpose. Tarigan stated are some goals of reading such:

³ Michael J. O’ Malley and Lorraine Valdezz Pierce, *Authentic Assessment for English Language Learners* (America: Addison- Wesley Publishing company, 1996), p. 94.

⁴ Henry Guntur Tarigan, *Metodologi Pengajaran Bahasa 2* (Bandung: Angkasa, 1991), p. 43.

- 1) Reading is for identifying important information.
- 2) Reading for main idea.
- 3) Reading is for finding the specific information.
- 4) Reading is for underlining the important information.
- 5) Reading is to classify the difficult word.
- 6) Reading to evaluate.
- 7) Reading is compare or contrast.⁵

There are five purpose of reading based on Adams, they are:

- 1) Reading for pleasure

One of purpose for reading is for pleasure. It means that reading is not for pressure. For instance, if the readers read recipes for pleasure, indirectly the readers are as the guy who read about molecules for pleasure. Most people read recipes with the purpose of using or applying the information the readers read. Based on explanation, the readers can read everything, not only read the journal, text book, magazine, thesis and others.

- 2) Reading for practical application

Another purpose for reading is to gain the information which the reader can apply to or use in a particular situation. For example, when a reader reads directions in order to put a model airplane together, or a reader read a shop manual to learn how to run a piece of equipment. It means that the reader is reading with the purpose of gaining information which they can apply or use.

- 3) Reading for general ideas

Actually, it is not always necessary to read every word on a page. If the purpose of reading is to get a general idea of the material being read, then the readers can read at faster speed, skipping sections and looking only for main ideas reading bold print headings and sub-headings and summary

⁵Henry Guntur Tarigan, *Membaca Sebagai Sebuah Keterampilan Berbahasa*, (Bandung: Angkasa, 2005), p.9

statements usually presented at the end of the material, only reading the question at the end of a chapter in a text book can give the reader a general idea of the content.

4) Reading to locate specific information

One of the purposes in reading is to locate specific information. When the readers know what they are looking for. The readers can skim and skip over material at very rapid rates.

5) Reading to critical evaluate

A good education should help the reader form their own opinions about thing. Reading critically is the process of being aware of an author's intent or the point of writing, his use of facts, his attitude and bias toward his subject matter. Critical evaluate requires that the readers talk back to the author rather than merely accept what the readers read.⁶

Based explanation above, the researcher can concluded that the purpose of reading are for pleasure, practical application to gain the information, general idea, to locate specific information, and to critical evaluate.

According to Jeremy Harmer, there are several purposes of reading. He said that the purpose of reading is different in the way. It saw what kind of the text will be read. Next, there are the purposes or reason for reading.

- 1) Instrumental: a large amount of the reading takes place because it will help us to achieve some clear aim. Thus, for example, we read the road sign so that we know where to go. We read the instructions on the ticket because we need to know how to operate it.
- 2) Pleasurable: the people read magazine or spend hours buried in the Sunday paper, other go to poetry readings, read illustrated cartoon or photo-story.

⁶ W. Royce Adams, *Reading Skills A Guide for Better Reading*, (London: Cambridge University, 1998), p.8-11.

- 3) For general understanding: good reader is able to take a stream of discourse and understand the gist of it without worrying too much about the details. Reading for such 'general' comprehension means not stopping for every word, not analyzing everything that the writer includes in the text. It can use skimming.
- 4) For specific information: in contrast to reading for gist, we frequently go to written text because we want specific detail. Reading in this skill is frequently referred to as scanning.
- 5) For detail information: sometimes we read in order to understand everything we are reading in detail. This is usually the case with written instruction or direction, or with the description of scientific products, it happens when someone gives us the address and telephone number and we write down all the detail.
- 6) Interpreting text: reader is able to see beyond the literal meaning of words in the passage, using a variety of clues to understand what the writer is implying. Successful interpreting in this kind depends to a large extent on shared schemata.⁷

So, the researcher concludes the purposes of reading are to get or find the important information, find specific information, and evaluate reading. It has been talked about that comprehension is the ability to construct the language to take information from the text.

c. Level of Reading Comprehension

Reading comprehension does not only know what text is about, but reading comprehension demands that students have a deep understanding about all of the text. Moreover, the comprehension of text involves the knowledge of vocabulary, structure, and also the situation or condition in which language is used.

⁷ Jeremy Harmer, *The Practice of English Language Teaching (Third Edition Completely Revised and Updated)*, (England: Longman, 2003), p. 200-202.

Smith in Wayne Otto indicates that reading comprehension may be divided into four categories: literal comprehension, interpretation comprehension, critical reading, and creative reading.⁸ Literal comprehension as the skill of getting the primary, direct literal meaning of a word, idea, or sentence in context.

Next level is interpretation, which definitely involves thinking skills and requires readers to identify ideas and meaning that are not explicitly stated in the written text. Within the interpretive level, readers may make generalization, determine cause and effect, identify motives, find relationships, predict endings, and make comparisons.

The third category is critical reading. The critical reading includes both literal comprehension and interpretation, but also goes beyond these two levels of comprehension. When individuals read critically, they evaluate what is read. That is, they examine critically the thoughts of the writer, which have been identified through the two lower level of comprehension, and judge their validity, or worth.

The fourth category is creative reading. Creative reading going beyond what the author has written, applying ideas from the text to new situation, and recombining the author's ideas with other idea form new concepts or to expand old ones. Though creative reading the readers

⁸ Wayne Otto, *How to Teach...*, p. 152

creates something new an idea, the solution to a problem, a new way of looking at something from the ideas gleaned from the text.

d. Reading Goal

The main goals of reading are to get and search information include content and meaning of the text.⁹ Here some goals of reading such as:

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

So, the indicator of reading comprehension which is based of theory are: reading to find the topic of the text, reading to identify important information of the text, reading to identify main idea from the text, reading to find the meaning of underlining word.

e. Reading Evaluation

Evaluation is focuses on collecting information about different aspect of language program in order to understand how the program works, and how successfully it works, enabling different kinds of decision to be made about the program, such whether the program

⁹ Henry Guntur Taringan, *Membaca Sebagai ...*, p. 9.

responds to learner's need, whether further teaching training is required for teacher's working in the program, or whether students are learning sufficiently from it.¹⁰

Evaluation is very important to measure reading. It will find the comprehension from what students have been read. For knowing the reading comprehension, it must use a test. Because testing is one of the important tools to measure the students' ability, the reading test will be designed to measure the students' ability in reading at grade VIII in SMP Negeri 8 Padangsidimpuan. The indicators of evaluation are:

Table 1.
The Indicator of Reading Evaluation¹¹

No	Indicator of Reading Evaluation
1	The main idea of a text
2	A general overview of the text
3	The information that message from text
4	The meaning of words of text
5	The purpose of communication of the text

There is some technique to make a test; one of them is multiple choices. Multiple choices is one of testing methods for knowing reading comprehension. Selecting and setting items are however, subjective processes and the decision about which is the correct answer is a matter

¹⁰ Jack C. Richard, *Curriculum Development in Language Teaching*, (USA: Cambridge University Press, 2001), p. 286.

¹¹ Kurikulum Bahasa Inggris Berkarakter SMP, "RPP Bahasa Inggris Berkarakter SMP Kelas 8", accessed from (<http://www.kurikulumkts.go.id>) at August 11th, 2017 on 15.35 p.m.

of subjective judgment on the part of the item write.¹² Hence, students should be careful to decide the best answer. Because of the multiple choices is the best chosen, the writer will use multiple choice to know how far the students' ability in reading comprehension. It also can make the students easy to applying their comprehension in reading.

2. Narrative Text

a. Definition of Narrative Text

Narrative text is any written English text in which the writer wants to assume, entertain people, and to deal with actual or vicarious experience in different ways.¹³ Similarly, Otong Setiawan says, narrative text is a kind of story to entertain the reader, there is a problem and there are solutions to solve the problem. Narrative text can be fiction and concrete story.¹⁴ In conclusion, narrative is a story to entertain the reader.

In addition, Kathleen says, "Narrative writing relates a sequence of events, usually in the order in which they happen. Narrative is used in both essays and short stories deal with fictional events and contain literary features."¹⁵ In conclusion, narrative is a story with problematic, it can be actual events and fictional events.

¹² Cyril J. Weir, *Communicative Language Testing*, (UK: Prentice Hall, 1990), p. 43.

¹³ Sanggam Siahaan and Kisno Shinoda, *Generic Text structure*, (Yogyakarta: Graha Ilmu, 2008), p.73.

¹⁴ Otong Setiawan Djuharie, *Genre*, (Bandung: Yrama Widya, 2007), p. 41.

¹⁵ Kathleen T. McWhorther, *Efficient and Flexible Reading*, (New York: Harper Collin Pubi, 1992), p. 262.

From the definition above, the conclusion is the narrative text is a kind of text to entertain readers and there is a problem and solution to solve the problem, by fiction or concrete story.

b. Text Function

The text function of narrative text is to amuse, entertain, and to deal with actual or vicarious experience in different ways; narration deal with problematic events which lead to a crises or turning point of some kind, which in turn finds a resolution.

c. Text Structure and Grammatical Features

The structure and grammatical features in narrative text are:¹⁶

Text structure	Grammatical features
Orientation: sets the scene and introduces the participants, time and place.	<ul style="list-style-type: none"> - Time conjunction - Past tense
Complication: sequence of events disrupted creating a problem or crisis for characters.	<ul style="list-style-type: none"> - Conjunction (series of clauses in temporal sequence, while, and when) - Participants - Sequence of past tense material processes
Complication: Continued the problem.	<ul style="list-style-type: none"> - Past tense verbal processes - Past tense mental processes - Past tense relational processes
Resolution: Problem/crisis resolved and normal events resume.	<ul style="list-style-type: none"> - Past tense material processes - Temporal sequence (finally)

¹⁶ Sanggam Siahaan and Kisno Shinoda, *Generic Text...*, p. 73-74.

Reorientation/ Coda: shows how characters have been changed by the events; the sentences that show the end of the story.	<ul style="list-style-type: none"> - Past tense relational processes - Expression of attitude
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3. Small Group Discussion Technique

a. Definition of Small Group Discussion Technique

Small group discussion technique is one of the cooperative learning techniques in which students work in groups of three or four. Small group discussion technique is divide the large classroom into small group of students to achieve specific objectives permits students to assume more responsibility for their own learning, develop social and leadership skills and become involved in an alternative instructional approach.¹⁷ It means the small group discussion is the method which consists of two or more persons in small group for exchange of thought orally to achieve a result in team work.

Small group discussion allows presenters to announce a topic or idea for group discussion among participants.¹⁸ A small group discussion follows democratic guidelines and allows everyone to contribute many ideas for others to discuss and reflect upon. Discussion allows for an

¹⁷ R. Kindsvatter. William Wilen & Margaret Ishler, *Dynamic of Effective...*, p.242

¹⁸ Ernest W Brewer, *Proven Ways to Get Your Message Across The Essential Reference for Teachers, Presenters, and Speakers*, (California: Corwin Press, Inc A Sage Publications Company, 1997), p. 22.

interchange of ideas within the context of a group under the direction of a present.

Arends states that discussion give students public opportunities to talk about and play with their own ideas and provides motivation to engage in discourse beyond in the classroom.¹⁹ Jones adds that the students' confidence will grow little by little as students successfully share ideas and experience when they do work together.²⁰ Orstein and Lesley state that small group occur when the large group is broke up into subgroup according to ability, interest, project, or other criterion.²¹ From those theories, it can be concluded that small group discussion is the exchange of information, opinion, and ideas among all members of a group which consist at least three or five members to solve the problems occurring in the learning process.

From the explanation above, conclude that small group discussion is the technique which consists of two or more person in small group for exchange of information, opinion, and ideas to solve problems occurring in the learning process. This technique provides opportunities for students' initiation, for face to face, give and take, for practice in negotiation of meaning for extended conversation exchange.

¹⁹ Richard I. Arends, *Classroom Instruction and Management*, (United States: Sentral Connecticut State University), p. 201.

²⁰ Leo Jones, *The Students Centered Classroom*, (United States of America: Cambridge University Press, 2007), p. 14.

²¹ C. Orstein. Allan & Thomas J, N Lasley, *Strategies for Effective Teaching*, (New York: Mc Graw Hill New York, 2000), p. 294.

b. Procedure of Teaching Small Group Discussion Technique

There are several procedures must be taken when conducting small group discussion technique, they are:

Step 1 : Introduction

The teacher should try to introduce a topic which all the students have some background knowledge so they have a basic for discussion. The introduction should have four parts, they are:

- a) Introduction objective. An introduction objective should be given to the students at the beginning of the discussion.
- b) Purpose. The teacher should explain why the groups will be discussing the chosen topic.
- c) Relationship. The teacher must explain how this information fits in with what has already been learned or what will be learned in the future.
- d) Advanced organizer. An advanced organizer is some sort of attention-grabber that attracts students' interest.²²

So from the explanation above, in pre-teaching the teacher must prepare before the discussion start from introduction objective, explain the purpose, give the relationship, and advanced organizer.

Step 2 : Directing the discussion

The teacher is in charge of directing the discussion to get it started. The teacher should ask the students if they have question about the topic. These question can start to discussion or teacher may want to ask a few questions from a prepared the stimulate thought toward the topic. Another way to begin the discussion is to ask the

²² Ernest W Brewer, *Proven Ways to...*, p. 23-24.

students to recall and share personal events that have happened in their lives that relate to the topic.²³ This is a good way to get everyone involved questions are excellent motivators for discussion.

Step 3 : Summarizing the discussion

Sometimes the students may be confused or retain wrong ideas as right. The teacher should make a summarizing to make the students understand what has been discussed. For small group discussion seeking consensus, it is important to summarize to make sure all students are thinking along the same lines. A final summary is essential at the end of the discussion. The teacher should ask to the students how they would use the information. At times, a discussion will result in the students' having incorrect ideas. Basically, summarization is helpful for clearing up confusion, covering main points, ending a discussion, and conveying consensus.²⁴ So the teacher should make a summarizing to make the students understand what has been discussed.

Besides that, to create a small group discussion technique first, the students are divided into some group, give the students text for discussion, for brainstorming the teacher asks the students to discuss with

²³ *Ibid.* p. 24-25.

²⁴ *Ibid.* p. 25.

their friends about the text and give their opinion about the text, after that the teacher explains to the students about the narrative text.

Second, the teacher gives the students some texts to read and discuss in the group with their own word, teacher explain to students about the content of the text to make the students would not be confused, the teacher asks the students to find difficult word, phrase and sentence from the text and find the meaning, the teacher and students discuss together those tasks.

Third for the closing, the teacher asks some students about the content of the text, the teacher re-explains what they have just learned, and for the last the teacher gives the students homework.

c. Advantages and Disadvantages of Small Group Discussion Technique

When using small group discussion, the presenter should be aware of the following advantage and disadvantages. Small group discussion technique is a good technique can be applied in reading comprehension. The use of small group discussion technique in reading comprehension gives some advantage they are:

- 1) All participant in the group can participate
- 2) It is a good way to get participant interested in a topic
- 3) Participant may more easily understand on another participant explanation than a presenters explanation
- 4) The presenter can identify participant who need assistance
- 5) The presenter can identify individual opinions about the topic

- 6) It helps the participant see relationship among ideas or concepts relative the topic at hand.²⁵

Based on explanation above, advantages of small group discussion technique are responsive to students' needs, the student becomes actively involved in learning, looking out information and opinions, students also have an opportunity to respond; she can share her position as well or she can nod consent, raise an objection, or contribute new ideas and attitudes to the discussion.

Small group discussion technique is very good technique in teaching reading comprehension, but small group discussion technique also have disadvantages in reading, they are:

- 1) It is time consuming
- 2) Some participants in the groups may do all the talking
- 3) It involves less presenter involvement than other method
- 4) The discussion can easily get off track.²⁶

Based on explanation above, disadvantages of small group discussion are the students need time to discuss and it's make time to study is costing, individual do not have much of a chance to say anything on their own.

B. Review of Related Findings

There are some related findings to this research. It talks about using small group discussion technique. The first is Faradina Primarini Noorhaya Sari from

²⁵ Ernest W Brewer, *Proven Ways to Get Your Message*,....p. 27.

²⁶ *Ibid.*

English Education Study Program Language and Art Education Department Teach Training and Education Faculty Lampung University.²⁷ The concluding of her research, there is the significant effect of using small group discussion on students reading comprehension. It was proven from students' score of in post-test scores both experiment and control classes that mean score of in experimental group. The researcher found that the mean score of pre-test of experimental class was 69.79 and the mean score of post-test was 85.16 with t_0 was 10.270 and t_t was 2.032 (t_0 is higher than t_t , $10.270 > 2.032$). From this research can conclude that there was the significant effect of small group discussion in reading class on reading comprehension.

The second is Fibrina Hanung Suswanti from English Education Department of Teacher Training and Education Faculty Sebelas Maret University Surakarta.²⁸ She concluded that, there is the significant effect of using small group discussion on students reading comprehension. It is proven from students score in post-test both experimental class and control class that the mean score of students in experimental class. The researcher found the mean score of pre-test of experimental class was 66.79 and the mean score of post-test was 76.25.

The third is Umiyati from Department of English Education Faculty of Tarbiyah and Teachers Training Syarif Hidayatullah State Islamic University

²⁷ Faridana Primarini Noorhaya Sari, The Effect of Small Group Discussion in Reading Class on Students' Reading Comprehension, retrieved from goo.gl/FAm7pG., on July 10th, 2017 at 10.40 a.m.

²⁸ Fibrina Hanung Siswanti, The Use of Small Group Discussion to Improve Students Reading Comprehension, retrieved from http://jurnal.fkip.uns.ac.id/index.php/bhs_inggris/article/view/7946., on July 10th, 2017 at 10.50 a.m.

Jakarta.²⁹ She concluded that, there is the significant effect of using small group interaction in reading comprehension.

Based from the explanation above, the researcher concluded that small group discussion technique is more effective to improve students result in learning compared with using small group discussion. In this case, the researcher will do a research by using small group discussion technique on students' reading comprehension. The researcher hopes this research can complete and contribute the previous finding.

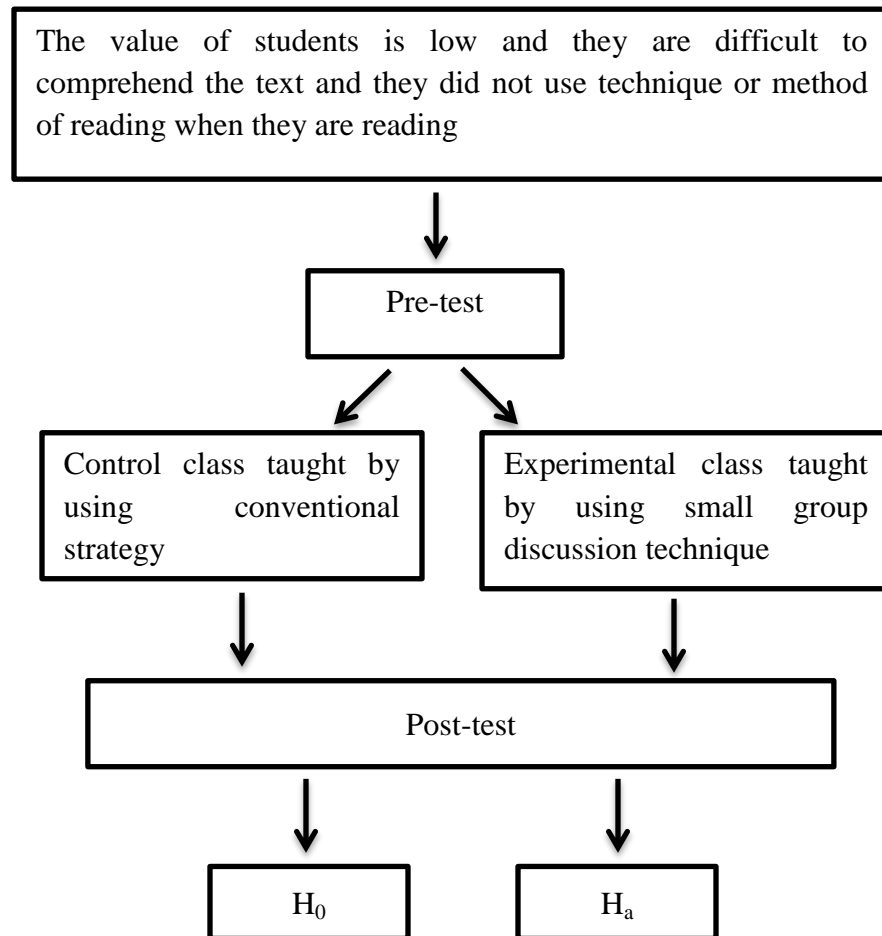
C. Conceptual Framework

Reading is important skill for students. The successful of reading comprehension depend on many factors. One of them is how the teacher taught reading to students. Reading comprehension is mental process in which the readers try to understand the meaning in the text by interpreting what have been read in order to find new idea that given by writers.

Therefore, teachers must use a method when they are teaching reading comprehension, where the method can increase their students ability in reading comprehension, so that their students became understanding the book that they read. In teaching reading comprehension, the teacher can apply small group discussion technique. This small group discussion technique is suitable in junior high school to increase their reading comprehension. Small group discussion

²⁹ Umiyati, the effectiveness of Using Small Group Interaction in Teaching Reading Comprehension, retrieved from *file:///D:/PROPOSAL/PENTING/THE%20EFFECTIVENESS%20SMALL%20GROUP%20ININTERACTION.pdf.*, on july 10th, 2017 at 11.00 a.m.

technique is the facility of the school which can make the students can increase their skills especially reading. The effect of small group discussion technique toward reading comprehension can be picture as follow:



Based on picture above, small group discussion technique is a learning technique that use by teacher to teach reading narrative text. Small group discussion technique is suitable with narrative text, because this method will helps students' problem in reading comprehension. So, the researcher has been known that the main purpose of carrying out this research is in order to find how far the

effect of small group discussion technique on students reading comprehension at grade VIII of SMP Negeri 8 Padangsidimpuan.

The researcher chose two classes, one class as experimental class by using small group discussion technique and other class as control class by using conventional strategy. Moreover, researcher will compare the students reading result in experimental class and control class in pre-test and post-test.

D. Hypothesis

In quantitative research, hypothesis is a provosional result of the research.³⁰ According to L.R. Gay, “ A hypothesis is a tentative prediction result of the research findings.”³¹ The hypothesis of this research are :

1. There is the significant effect of small group discussion technique on students’ reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan (H_a). $\mu_1 > \mu_2$
2. There is no significant effect of small group discussion technique on students’ reading comprehension at grade VIII SMP Negeri 8 Padangsidimpuan (H_0). $\mu_1 = \mu_2$

³⁰Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, (Jakarta: Rineka Cipta, 2006), p.71.

³¹L.R Gay and Peter Airaisan, *Educational Research for analysis and application*, (America: Prentice Hall, 1992), p.71.

CHAPTER III

RESEARCH METHODOLOGY

A. The Place and Time of The Research

The location of the research was at SMP Negeri 8 Padangsidimpuan. It is located in Jln. Mandailing Km 7.8 Pijorkoling, Kec.Padangsidimpuan Tenggara. The time of this research had been done from June 2017 up to November 2017. The subject of this research was the eighth grade of the students.

B. The Research Design

The research would use experimental research by using quantitative method with control class and experimental class in do this research. Experimental research is a kind of research which has the aim to know the effect of treatment between one variable or more variable.

The experimental research controls the selection of participant for the study and divides the select participant in to more groups having similar characteristics at the start of experiment. It means that to collect the data, two classes are use. They are experiment and control class. The experiment class is that taught with small discussion technique, while the control class is the class that taught with conventional technique. The design can figure as follow:

Table 2.**Research Design**

Class	Pre test	Treatment	Posttest
Experiment class	✓	✓	✓
Control Class	✓	X	✓

C. The Population and Sample**1. Population**

Population is all members of well-defined class of people, event, and object in SMP Negeri 8 Padangsidimpuan. It means the population of this research will be all of the VIII class of SMP Negeri 8 Padangsidimpuan. It consisted of 9 classes with 239 students. It can be seen in the following table:

Table 3.

**The population of the grade VIII students of SMP
Negeri 8 Padangsidimpuan**

No	Class	Total students
1	VIII-1	29
2	VIII-2	26
3	VIII-3	26
4	VIII-4	27
5	VIII-5	27
6	VIII-6	25
7	VIII-7	25
8	VIII-8	29
9	VIII-9	25
Total of students		239

2. Sample

Sample is two or more classes that represent the population to be given the test. To get the sample, the researcher used random sampling. Random sampling is the process of selecting a sample such a way that all individuals in defined population have an equal and independent chance of being selected for the sample.¹ It means random sampling is suitable will use to get sample in this research.

In this research, the researcher chose two classes as a sample. The classes were VIII-2 as experimental class and VIII-3 as control class. For VIII-2 class as experiment class, they had been taught by using small group discussion technique and VIII-3 as control class had been taught by using conventional strategy. Furthermore, the researcher look how far the effect of small group discussion technique to find out students' reading comprehension.

Before using random sampling, first the researcher used normality and homogeneity test. Normality test is used to know whether the data of research is normal or not. To know normality, the researcher used Chi-Quadrat formula. The formula is as follow:

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

¹L.R. Gay and Peter Airasian, *Education Research for Analysis and Application*, (New York: Prentice Hall, 1992), p. 123

Where:

χ^2 : Chi-Quadrate

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

f_h : Frequency is gotten from the sample as image from
frequency is hoped from the population²

To calculate the result of Chi-Quadrate, the researcher would use significance level 5% degree of freedom as big as total of frequency is lessened 3 ($dk=5-3$). If the result $\chi^2_{count} > \chi^2_{table}$. So, it can be concluded that the data is distributed by normal.

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

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Small Variant}}$$

Where:

n_1 : Total of the data that bigger variant

n_2 : total of the data that smaller variant

Criteria:

²Anas Sudijono, *Pengantar Statistik Pendidikan*, (Jakarta: PT .Raja Grafindo Persada, 2005), p. 298.

$$H_0 : \sigma_1^2 = \sigma_2^2$$

$$H_a : \sigma_1^2 \neq \sigma_2^2$$

Where:

σ_1^2 : Variant experimental class

σ_2^2 : Variant of control class³

Hypothesis is rejected if $F \leq F_{\frac{1}{2}(n_1-1)(n_2-2)}$ while if $F_{count} > F_{table}$ hypothesis is accepted. So, it would be determined with significant level 5% (0,05) and dk numerator is (n₁-n) while dk denominator (n₂-2).

Based on above explanation, to know the normality and homogeneity of the sample, the researcher had given the pre-test to three classes (VIII-2, VIII-3, and VIII-4). After calculating the data, the researcher had found that the three classes were homogenous. So the researcher chose two classes as a sample. They were VIII-2 and VIII-3. VIII-2 class consisted of 26 students and VIII-3 class consisted of 26 students.

Table 4.
Sample of the Research

Experiment Class	Control Class	Total
VIII-2 = 26	VIII-3 = 26	52

³Sudjana, *Metode Statistika*, (Jakarta: TARSITO, 2002), p. 250.

D. The Instrument of Collecting Data

Instrument is a tool that could use by the researcher to collect data. In this researcher, the researcher used a test.tst is done based on the assumption that human have differences in ability, personality, and behavior and it can be measured by appropriate way.⁴ The test that used in this research is multiple choices that consist of four choose, they were a, b, c. and d.

In this research the researcher had given pre-test and post-test to experimental class and control class. The test consists of 50 before validity, where 25 for pre-test and 25 for post-test. The researcher conducted that for pre-test only 20 were categorized valid and 5 were categorized invalid. The researcher conducted 20 items for experimental class and 20 items for control class. Each question had be given 5 score to get the students' score in answering the question. If the students can answer the entire question correctly, the score is 100. The researcher was given the pre-test and post-test to sample of class.

Table 5.
The indicator of reading comprehension text in pre-test

No	Indicator of reading comprehension	Item	Number of item	score	Total score
1	Get the main idea of a text	4	1,6,11,16	5	20
2	A general overview of the text	4	2,7,12,17	5	20
3	The information that message from the text	4	3,8,13,18	5	20
4	The meaning of words of the text	4	4,9,14,19	5	20
5	The purpose of communication of	4	5,10,15,20	5	20

⁴IbnuHadjar, *Dasar-DasarMetodologyPenelitianKuantitatifdalamPendidikan*, (Jakarta: Raja GrafindoPersada, 1999). P.173.

	the text			
Total		20	20	100

Table 6.
The indicator of reading comprehension text in post-test

No	Indicator of reading comprehension	Item	Number of item	score	Total score
1	Get the main idea of a text	4	1,6,11,16	5	20
2	A general overview of the text	4	2,7,12,17	5	20
3	The information that message from the text	4	3,8,13,18	5	20
4	The meaning of words of the text	4	4,9,14,19	5	20
5	The purpose of communication of the text	4	5,10,15,20	5	20
Total		20	20		100

E. The Validity and Reliability Instrument

1. Validity

Gay and Airasian stated that validity is the most important characteristic a test or measuring instrument can possess.⁵ It means, validity test make the test valid or not to give the experimental and control group.

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

⁵L.R. Gay and Peter Airasian, *Educational Research...*, p. 161

To know the validity of the each question will be refer to list r biserial with r, in 5% significant: 0,361 and 1% significant 0.463. So, if $r_{\text{account}} > r_{\text{table}}$ the test is classified valid.

To get the validity of the test, the formula of r *pointbiserial* can use 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 of the total score

SD_t : standard deviation of the total score

p : presentation of the right answer of the item tested validity.

q : presentation of the wrong answer of the item tested validity.

2. Reliability

Reliability is the degree of accuracy or precision in the measurements made by a research instrument.⁶ To get the reliability of the test, SuharsimiArikunto said that to obtain the reliability of the test, the researcher use formulas K-R 20.⁷

$$R_{11} = \left(\frac{n}{n-1} \right) \left(\frac{st_2 - \Sigma pq}{s_t^2} \right)$$

⁶Ranit Kumar, *Research Methodology*, Third Edition, (London: SAGE Publication, Inc., 2011), p. 181.

⁷Suharsimi Arikunto, *Prosedur Penelitian*, (Jakarta: PT RinekaCipta, 2007), p. 188.

Where:

R11 : reliability of the instrument

N : total of question

St2 : variants total

P : $\frac{\text{proporsi subject who is right answer (1)}}{N}$

Q : $\frac{\text{proporsi subject who is wrong answer (0)}}{N}$

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

Criteria of test reliability as follows:⁸

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

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

$r_{11} < 0,70$ low correlation (un-reliable)

In this research, the researcher found that reliability of pre-test was 0.84 and post-test was 0.83 if r_{count} is higher from r_{table} ($r_{\text{count}} > r_{\text{table}}$). It means the test have very high reliable.

F. The Procedures of Collecting Data

To collect the data, the researcher used test. In giving the test, it would divide into two kinds; pre-test and post-test.

⁸ Anas Sudijono, *Pengantar Statistik...*, p. 209.

1. Pre-test

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

- a. The researcher prepared the test that would be filled by the students. It was consist of 20 questions.
- b. The researcher distributed the test paper to both of class; experiment and control class.
- c. The researcher explained what the students need to do.
- d. The researcher given the times to the students to answer the questions.
- e. The researcher collected the test paper.
- f. The researcher checked the answer and counts the students' score.

2. Treatment

In the treatment, the researcher did different way in teaching narrative text between experimental and control class. Treatment would be given to experimental class by using small group discussion technique. The researcher used some steps, they were:

- a. Teacher divided students in small group, usually consisted 2-4 students.

- b. Teacher should try to introduce a topic about narrative text which all the students have some background knowledge so they have a basic for discussion.
 - c. The teacher should ask the students if they have question about the topic.
 - d. The teacher divided the material about narrative text for students to read and they made summary.
 - e. Teacher and students appointed who be speaker and who be listener.
 - f. Teacher gave speaker few minutes to read his/her summary completely with entered the main idea in his/her summary.
 - g. Teacher gave the students few minutes to correct and showing the main idea that was or not said that by his/her friends attentively.
 - h. Teacher change the role with other group, who is the speaker change be listener and who before be listener now be speaker.
 - i. Teacher summary with the students.
3. Post-test

It was a test that is given after the researcher gives the treatment to experimental class. It was use to know the difference score of experimental and control class and the effect of treatment, whether it has an effect or not.

The researcher used some steps in giving post-test. They were:

- a. The researcher prepared the test that would be filled by the students. It was consist of 20 questions.

- b. The researcher distributes the test paper to both of class; experiment and control class.
- c. The researcher explained what the students need to do.
- d. The researcher gave the times to the students to answer the questions.
- e. The researcher collected the test paper.
- f. The researcher checked the answer and counts the students' score

G. The Technique of Analyzing Data

The techniques of analyzing data that used by the researcher were:

1. Requirement test
 - a. Normality test

To calculate normality test would use formula, as follow:

- 1) Calculating average and standard deviation by formula:

$$x = \sum \frac{FiXi}{Fi}$$

- 2) Perception x_1, x_2, \dots, x_n made permanent number z_1, z_2, \dots, z_n using formula:

$$Z_i = \frac{x_i - x}{s}$$

- 3) To every this permanent number and by using enlist of permanent normal distribution, and then calculating the opportunity.

$$F(Z_i) = P(Z < Z_i)$$

- 4) Counting the difference $F(Z_i) - S(Z_i)$, and then determine it's absolute prise.

5) Taking biggest prince among absolute prince of the difference and mentioning the prince by L_0 .

If $L_0 < L$ obtained from critical value test, the Liliefors with the real level $\alpha = 0.05$, hence the distribution is normal.

b. Homogeneity test

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

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Small Variant}}$$

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

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

Hypothesis is rejected if $F \leq F_{\frac{1}{2}\alpha} (n_1 - 1)$, while if $F_{\text{count}} > F_{\text{table}}$

hypothesis is accepted. It determined with significant level 5% (0.05)

and dk numerator was $(n_1 - 1)$, while dk denominators is $(n_2 - 1)$.

2. Hypothesis test

Before analyzing the data to find the hypothesis, the researcher would calculate the normality and homogeneity of the post-test. It was use to know whether the data is normal and homogenous or not. If the data is normal and homogenous, the formula that will use to test hypothesis is t-test but if the data is not normal and homogenous, the formula that would use to test hypothesis is Chi-Quadrate. Because the result of post-test in this research of

post-test in this research was normal and homogenous, the data had been analyzed by using *t-test* formula. The formula is as follow:

$$Tt = \frac{M_X - M_Y}{\sqrt{\left(\frac{\Sigma X^2 + \Sigma Y^2}{n_X + n_Y - 2}\right) \left(\frac{1}{n_X} + \frac{1}{n_Y}\right)}}$$

Where:

t : the value which the statistical significance

M_X : the mean of the experiment class

M_Y : the mean of the control class

X : deviation of the experiment class

Y : deviation of the control class

N_X : number of experiment class

N_Y : number of control class

CHAPTER IV

THE RESEARCH RESULT

As mentioned in earlier chapter, in order to evaluate the effect of using small group discussion technique on students' reading comprehension, the researcher has collected data through pre-test and post-test in the both classes, experiment class and control class. The researcher has calculated the data by using quantitative analysis. The researcher uses the formulation of T-test to test the hypothesis. Next, the researcher described the data as follow:

A. Description of Data

1. Data Pre-test

a. Score of Pre-test Experimental Class

In pre-test of experimental class, the researcher calculated the result had been gotten by the students in answering the question (test). Then, the researcher has drawn the table sum in the following:

Table 7
The Score of Experimental Class in Pre-test

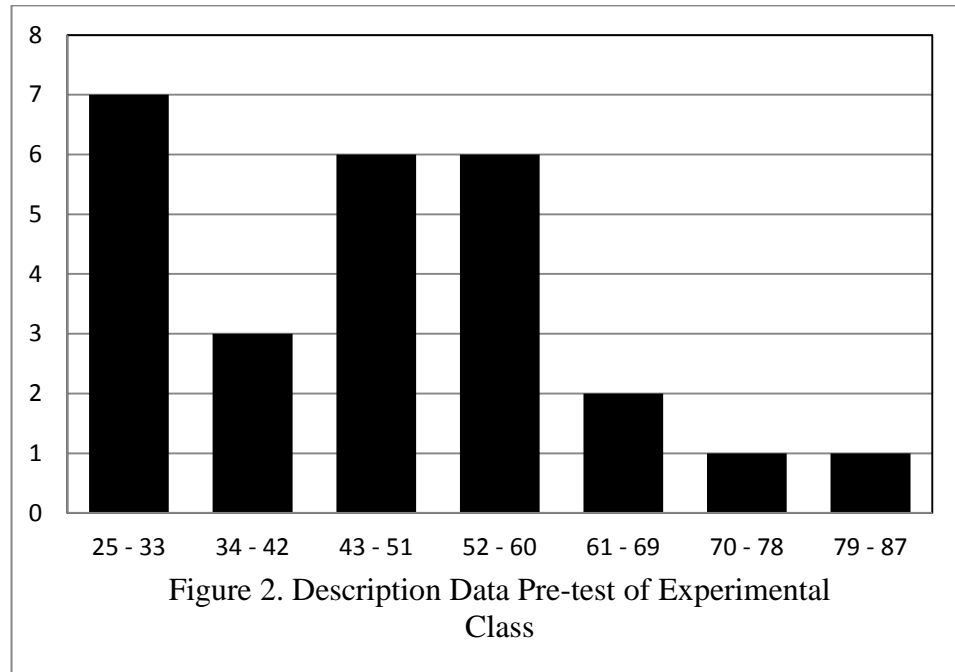
Total	1220
Highest score	80
Lowest score	25
Mean	47
Median	57.44
Modus	51.5
Range	55
Interval	9
Standard deviation	17.76
Variants	202.15

Based on the above table the total score of experimental class in pre-test was 1220, mean was 47, standard deviation was 14.47, median was 57.44, modus was 51.5, variant was 202.15, range was 55, interval was 9. The researcher got the highest score was 85 and the lowest score was 25. It can be seen on appendix 20. Then, the computed of the frequency distribution of the students' score experimental class can be applied into table frequency distribution as follow:

Table 10
Frequency Distribution of Students' Score

Interval class	Mid-point	F	Percentages
25 – 33	29	7	26.92%
34 – 42	38	3	11.53%
43 – 51	47	6	23.07%
52 – 60	56	6	23.07%
61 – 69	65	2	7.69%
70 – 78	74	1	3.84%
79 – 87	83	1	3.84%
$i = 9$	-	26	100%

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



Based on the figure above, the frequency of students' score from 25 up to 33 was 9; 34 up to 42 was 3; 43 up to 60 was 6; 61 up to 68 was 2; 70 up to 78 was 1; 79 up to 87 was 1. Then the score had most frequent was 25 – 33 and the score had lowest was 70 – 78 and 79 – 87.

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 9
The Score of Control Class in Pre-test

Total	1270
Highest score	75
Lowest score	30

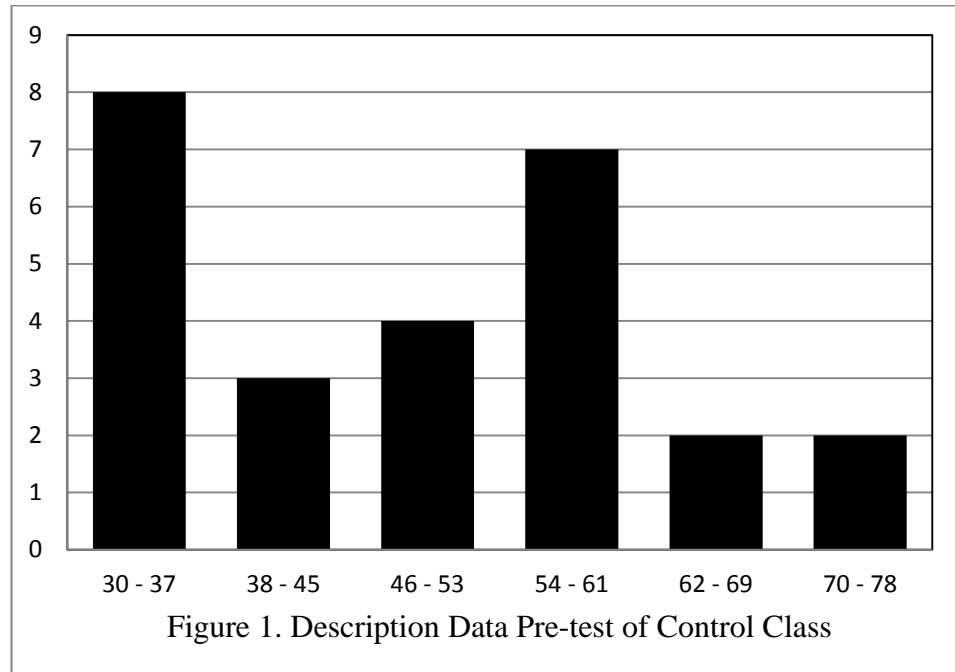
Mean	51.5
Median	65.5
Modus	41.5
Range	45
Interval	8
Standard deviation	12.8
Variants	188.61

Based on the above table the total score of control class in pre-test was 1720, mean was 51.5, standard deviation was 12.8, median was 65.5, modus was 41.5, variant was 188.61, range was 45, interval was 8. The researcher got the highest score was 75 and the lowest score was 30. It can be seen on appendix 20. Then, the computed of the frequency distribution of the students' score control class can be applied into table frequency distribution as follow:

Table 8
Frequency Distribution of Students' Score

Interval class	Mid-point	F	Percentages
30 – 37	33	8	30.76%
38 – 45	41	3	11.53%
46 – 53	49	4	15.38%
54 – 61	57	7	26.92%
62 – 69	65	2	7.69%
70 – 78	74	2	7.69%
$i = 8$	-	26	100%

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



Based on the figure above, the frequency of students' score from 30 up to 70 was 8; 38 up to 45 was 3; 46 up to 53 was 4; 54 up to 61 was 7; 62 up to 69 was 2; 70 up to 78 was 2. Then the score had most frequent was 30 – 37 and the score had lowest was 62 – 69 and 70 – 78.

2. Data Post-test

a. Score of Post-test Experimental Class

In post-test of experimental class, the researcher calculated the result had been gotten by the students in answering the question (test) after the researcher using small group discussion technique. The score of post-test experimental class can be seen in the following table:

Table 11
The Score of Experimental Class in Post-test

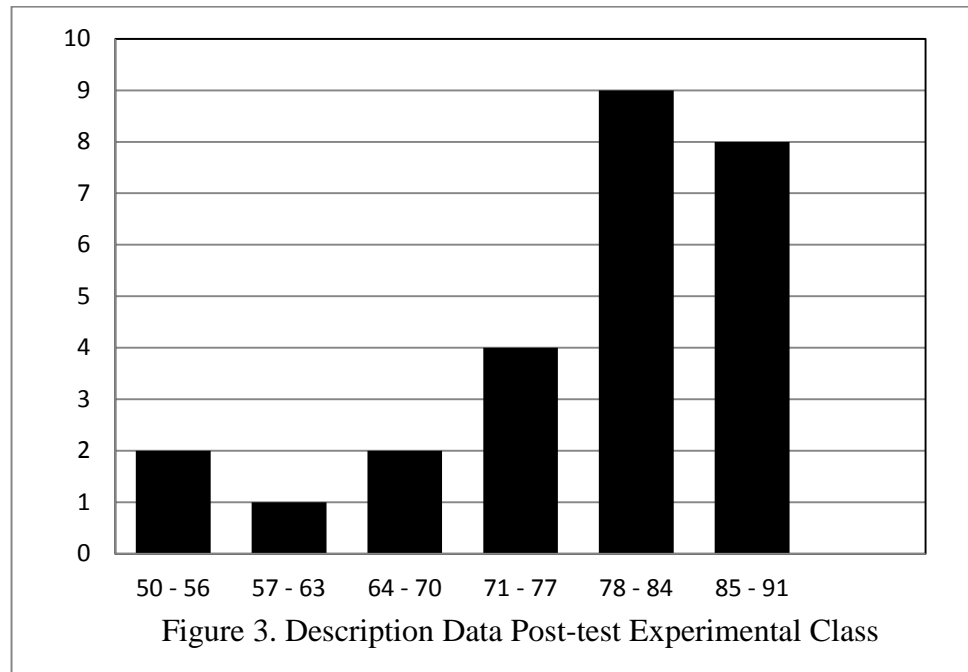
Total	2020
Highest score	90
Lowest score	50
Mean	839
Median	80.58
Modus	84.5
Range	40
Interval	6
Standard deviation	10.5
Variants	100.46

Based on the above table the total score of experiment class in post-test was 2020, mean was 83.9, standard deviation was 10.5, median was 80.58, modus was 84.5, variant was 100.46, range was 40, interval was 6. The researcher got the highest score was 90 and the lowest score was 50. It can be seen on appendix 21. Then, the computed of the frequency distribution of the students' score experiment class can be applied into table frequency distribution as follow:

Table 12
Frequency Distribution of Students' Score

Interval class	Mid-point	F	Percentages
50 - 56	53	2	7.69%
57 - 63	60	1	3.84%
64 - 70	67	2	7.69%
71 - 77	74	4	14.34%
78 - 84	81	9	34.61%
85 - 91	88	8	30.76%
$i = 7$	-	26	100%

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



Based on the figure above, the frequency of students' score from 50 up to 56 was 2; 57 up to 63 was 1; 64 up to 70 was 2; 71 up to 77 was 4; 78 up to 84 was 9; 85 up to 91 was 8. Then the score had most frequent was 78 - 84 and the score had lowest was 50 - 56.

b. Score of Post-test Control Class

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

Table 13
The Score of Control Class in Post-test

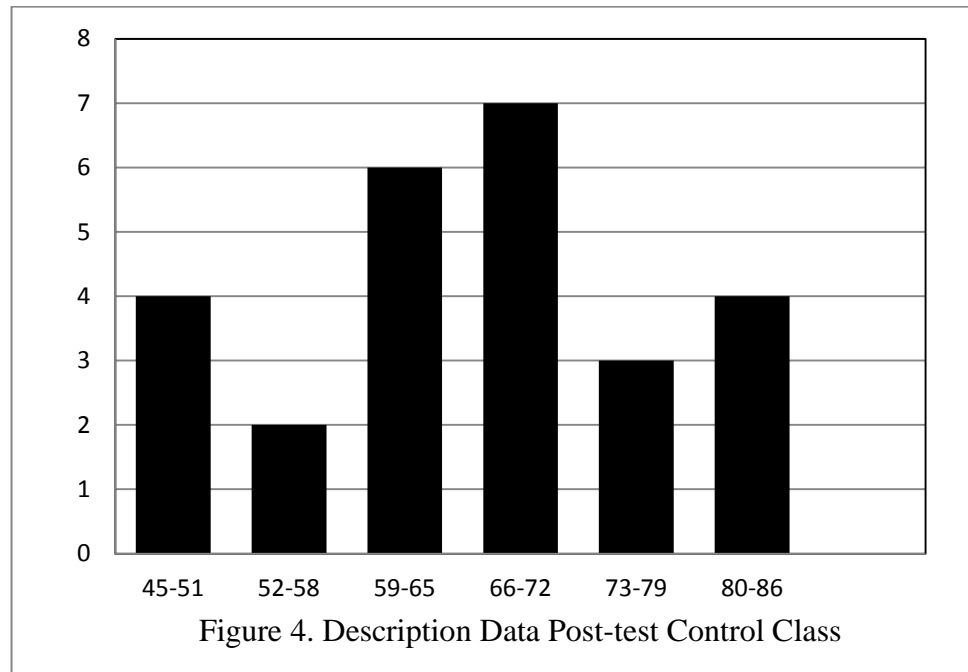
Total	1735
Highest score	85
Lowest score	45
Mean	71.94
Median	66.48
Modus	69.9
Range	40
Interval	7
Standard deviation	11.25
Variants	117.88

Based on the above table the total score of experiment class in post-test was 1735, mean was 71.94, standard deviation was 11.25, median was 66.48, modus was 69.9, variant was 117.88, range was 40, interval was 7. The researcher got the highest score was 85 and the lowest score was 45. It can be seen on appendix 21. Then, the computed of the frequency distribution of the students' score experiment class can be applied into table frequency distribution as follow:

Table 14
Frequency Distribution of Students' Score

Interval class	Mid-point	F	Percentages
45 – 51	48	4	14.34%
52 – 58	55	2	7.69%
59 – 65	62	6	23.07%
66 – 72	69	7	26.92%
73 – 79	76	3	11.53%
80 – 86	83	4	14.34%
$i = 7$	-	26	100%

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



Based on the figure above, the frequency of students' score from 45 up to 51 was 4; 52 up to 58 was 2; 59 up to 65 was 6; 66 up to 72 was 7; 73 up to 79 was 3; 80 up to 86 was 4. Then the score had most frequent was 66 – 72 and the score had lowest was 52 – 58.

3. Data Comparison Between Pre-test and Post-test

a. The Comparison Data Between Pre-test and Post-test Experimental Class

In pre-test, the researcher did not apply treatment to experimental and control class. By giving pre-test to both of classes, the researcher

knew the students' ability in reading comprehension before giving the treatment.

Based on the description data in pre-test of experimental class and control class, there was comparison score between pre-test experimental class before and after gave a treatment by using small group discussion technique. It can be seen in the following table:

Table 15
The Comparison Score of Experimental Class in
Pre-test and Post test

Experimental class	Pre-test	Post-test
Total	1220	2020
Highest score	80	90
Lowest score	25	50
Mean	47	83.9
Median	57.44	80.58
Modus	51.5	84.5
Range	55	40
Interval	9	6
Standard deviation	17.76	10.5
Variants	202.15	100.46

From the table above, it can be concluded that the high score in pre-test experimental class was 80 and the lowest score was 25 with mean score was 47, meanwhile the high score in post-test was 90 and the lowest score was 50 with mean score was 83.9. Then, the computed of the frequency distribution of the students' score experiment class can be applied into table frequency distribution as follow:

Table 16
Frequency Distribution of Students' Score of Experimental Class in
Pre-test and Post test

Pre- test				Post- test			
Interval class	Mid-point	F	Percentages	Interval class	Mid-point	F	Percentages
25 – 33	29	7	26.92%	50 – 56	53	2	7.69%
34 – 42	38	3	11.53%	57 – 63	60	1	3.84%
43 – 51	47	6	23.07%	64 – 70	67	2	7.69%
52 – 60	56	6	23.07%	71 – 77	74	4	14.34%
61 – 69	65	2	7.69%	78 – 84	81	9	34.61%
70 – 78	74	1	3.84%	85 – 91	88	8	30.76%
79 – 87	83	1	3.84%	-	-	-	-
$i = 9$	-	26	100%	$i = 7$	-	26	100%

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

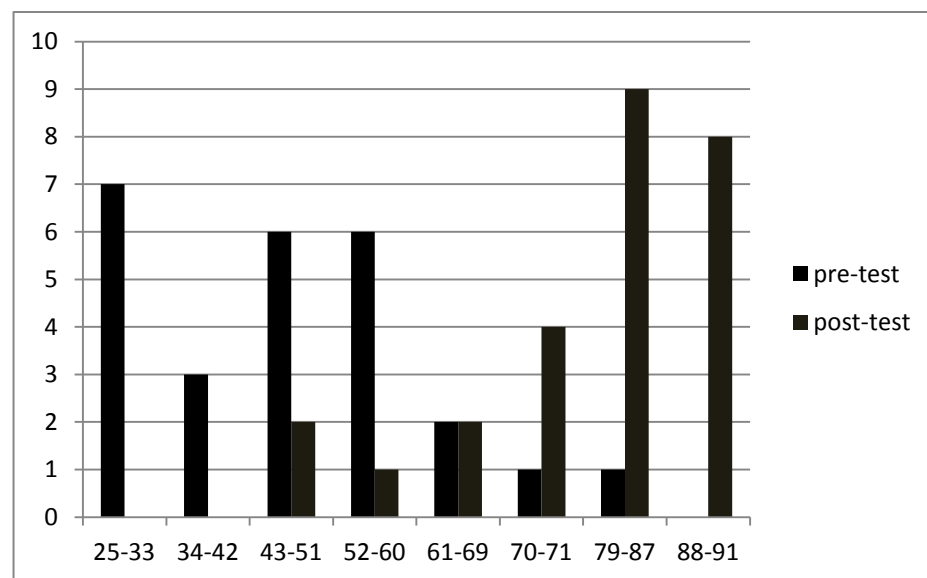


Figure 5. Description Comparison Data Experimental Class in Pre-test and Post test

Based on the figure above, the frequency of students' score from 25 up to 33 was 9; 34 up to 42 was 3; 43 up to 60 was 6; 61 up to 68 was 2; 70 up to 78 was 1; 79 up to 87 was 1. Then the score had most frequent was 25 – 33 and the score had lowest was 70 – 78 and 79 – 87. In post-test of experimental class, the interval had highest frequency was 78-84 was 10 and the interval which had lowest frequency was 57-63 was 1.

b. The Comparison Data Between Pre-test and Post-test Control Class

Based on the description data in pre-test and post-test of control class, there was the comparison score between pre-test control class before and after gave a treatment by using conventional technique. It can be seen in the following table:

Table 17
The Comparison Score of Experimental Class in
Pre-test and Post test

Experimental class	Pre-test	Post-test
Total	1270	1735
Highest score	75	85
Lowest score	30	45
Mean	51.5	71.94
Median	65.5	66.48
Modus	41.5	69.9
Range	45	40
Interval	8	7
Standard deviation	12.8	11.25
Variants	188.61	117.88

From the table above, it can be concluded that the high score in post-test control class was 75 and the lowest score was 30 with mean score was 51.5, meanwhile the high score in post-test was 85 and the lowest score was 45 with mean score was 71.94. Then, the computed of the frequency distribution of the students' score experiment class can be applied into table frequency distribution as follow:

Table 18
Frequency Distribution of Students' Score of Experimental Class in Pre-test and Post test

Pre- test				Post- test			
Interval class	Mid-point	F	Percentages	Interval class	Mid-point	F	Percentages
30 – 37	33	8	30.76%	45 – 51	48	4	14.34%
38 – 45	41	3	11.53%	52 – 58	55	2	7.69%
46 – 53	49	4	15.38%	59 – 65	62	6	23.07%
54 – 61	57	7	26.92%	66 – 72	69	7	26.92%
62 – 69	65	2	7.69%	73 – 79	76	3	11.53%
70 – 78	74	2	7.69%	80 – 86	83	4	14.34%
<i>i</i> = 8	-	26	100%	<i>i</i> =7	-	26	100%

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

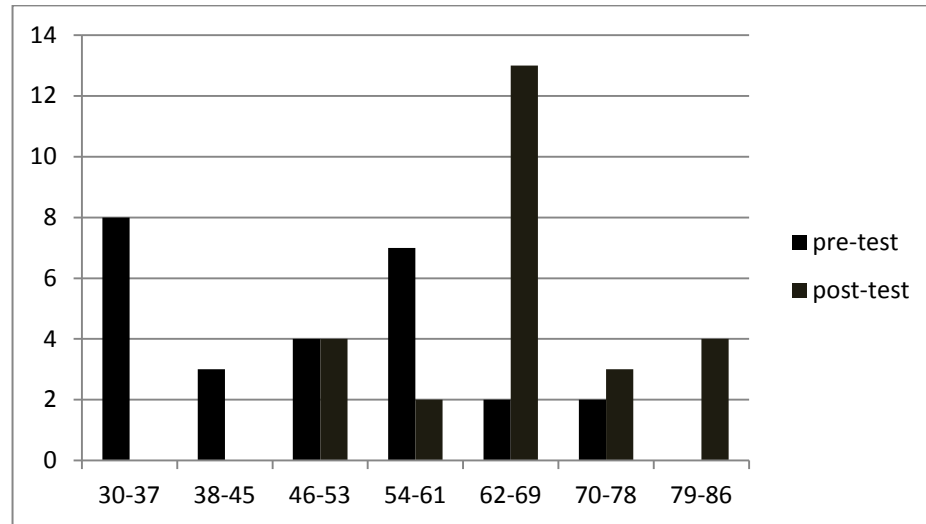


Figure 6. Description Comparison Data Control Class in Pre-test and Post test

Based on the figure above, the frequency of students' score from 30 up to 70 was 8; 38 up to 45 was 3; 46 up to 53 was 4; 54 up to 61 was 7; 62 up to 69 was 2; 70 up to 78 was 2. Then the score had most frequent was 30 – 37 and the score had lowest was 62 – 69 and 70 – 78. Meanwhile, the score of control class in post-test from the interval had highest frequency was 62-69 was 13 and the interval which had lowest frequency was 54-61 was 2.

B. Data Analysis

1. Requirement Test

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

Table 19**Normality and Homogeneity in Pre-test**

Class	Normality Test		Homogeneity Test	
	t_{count}	t_{table}	t_{count}	t_{table}
Experiment Class	3.57	12.592	1.07 < 1.93	
Control Class	5.56	11.070		

Based on the above table researcher calculation, the score of experiment class $Lo = 3.57 < Lt = 12.592$ with $n = 26$ and control class $Lo = 5.56 < Lt = 11.070$ with $n = 26$, and real $\alpha 0.05$. Cause $Lo < Lt$ in the both class. It means that experiment class and control class were distributed normal. It can be seen in appendix 18.

The coefficient of $F_{count} = 1.07$ was compared with F_{table} . Where F_{table} was determined at real $\alpha 0.05$, 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 $F_{0.05} = 1.93$. It showed that $F_{count} 1.07 < F_{table} 1.93$. So, the researcher concluded that the variant from the data of the students' reading comprehension at SMP Negeri 8 Padangsidempuan by experimental and control class was homogenous. The calculation can be on the appendix 18.

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

Table 20

Normality and Homogeneity in Post-test

Class	Normality Test		Homogeneity Test	
	t_{count}	t_{table}	t_{count}	t_{table}
Experiment Class	-0.89	11.070	1.02 < 1.93	
Control Class	9.05	12.592		

Based on the above table researcher calculation, the score of experiment class $Lo = -0.89 < Lt = 11.070$ with $n = 26$ and control class $Lo = 9.05 < Lt = 12.592$ with $n = 26$, and real $\alpha 0.05$. Cause $Lo < Lt$ in the both class. It means that experiment class and control class were distributed normal. It can be seen in appendix 19.

The coefficient of $F_{\text{count}} = 1.02$ was compared with F_{table} . Where F_{table} was determined at real $\alpha 0.05$, 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 $F_{0.05} = 1.93$. It showed that $F_{\text{count}} 1.02 < F_{\text{table}} 1.93$. So, the researcher concluded that the variant from the data of the students' reading comprehension at SMP Negeri 8 Padangsidimpuan by experimental and control class was homogenous. The calculation can be on the appendix 19.

2. Hypothesis Test

After calculating the data of post-test, researcher has found that post-test result of experimental and control class is normal and homogenous. Based on the result, researcher used parametric test by using T-test to analyze the hypothesis. Hypothesis alternative (H_a) of the research was “there was the effect of small group discussion technique on students’ reading comprehension”. The calculation can be seen on the appendix 22 and 23.

Table 21
Result of T-test from Both Averages

Pre-test		Post-test	
t_{count}	t_{table}	t_{count}	t_{table}
-0.49	1.29871	3.81	1.29871

$H_a : \mu_1 > \mu_2$

Where $\mu_1 > \mu_2$ “There was a significant effect of small group discussion technique on students’ reading comprehension.”

Based on researcher calculation, researcher found that t_{count} 3.81 while t_{table} 1.29871 with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 26 + 26 - 2 = 50$. Cause $t_{count} > t_{table}$ ($3.81 > 1.29871$), it means that hypothesis H_a was accepted and H_o was rejected. So, there was the significant effect of small group discussion technique on students’ reading comprehension. In this case, the mean score of experimental class by using

small group discussion technique was 83.9 and mean score of control class was 71.94 by using conventional strategy. The calculation can be seen on appendix 21.

C. Discussion

The researcher discussed the result of this research and compared with the related finding. It also discussed with the theory that has been stated by the researcher. Related to theory Kindsvatter stated that Small group discussion technique is divide the large classroom into small group of students to achieve specific objectives permits students to assume more responsibility for their own learning, develop social and leadership skills and become involved in an alternative instructional approach.¹ It means the small group discussion is the method which consists of two or more persons in small group for exchange of thought orally to achieve a result in team work. So, small group discussion technique was suitable to teach students' and has significant effect on students' reading comprehension.

Based on the related finding, Faradina Primarini Noorhaya Sari said that that small group discussion technique suitable. Small group discussion technique effective can improve students' reading comprehension and resolve the difficulties since it required the students share, discuss, and unit their thought or problem on comprehending the content of the text with other member of the

¹ R. Kindsvatter. William Wilen & Margaret Ishler, *Dynamic of Effective Teaching*,(London: Longman Published Ltd, 1996), p.242

group.² So, it was made the class more active study and the students understand material easily.

Next, Fibrina Hanung Suswanti said that use small group discussion technique could improve students' reading comprehension, in addition small group discussion technique could be used to improve the class situation.³ It meant that the small group discussion technique was suitable to teach students' reading comprehension.

Next, Umiyati said that use small group discussion is more effective in teaching reading of descriptive text than whole class teaching.⁴ It meant that the small group discussion was suitable to teach students' on reading comprehension.

The researcher result and the theory has proven that this technique is good where the students were so enthusiastic to follow the lesson. The students directly easy to reading with well organization. It was a proud while looking them think hard, but still enthusiastic to understand a text with well.

This proofs show that small group discussion technique is suitable to be applied in teaching reading comprehension. So, small group discussion technique

² Faridana Primarini Noorhaya Sari, The Effect of Small Group Discussion in Reading Class on Students' Reading Comprehension, retrieved from goo.gl/FAm7pG., on July 10th, 2017 at 10.40 a.m.

³ Fibrina Hanung Siswanti, The Use of Small Group Discussion to Improve Students Reading Comprehension, retrieved from http://jurnal.fkip.uns.ac.id/index.php/bhs_inggris/article/view/7946., on July 10th, 2017 at 10.50 a.m.

⁴ Umiyati, the effectiveness of Using Small Group Interaction in Teaching Reading Comprehension, retrieved from <file:///D:/PROPOSAL/PENTING/THE%20EFFECTIVENESS%20SMALL%20GROUP%20INTERACTION.pdf>., on July 10th, 2017 at 11.00 a.m.

has given the effect to the research that has been done by the researcher or the other researcher who mentioned in related findings.

D. Threats of the research

The researcher found the threats of the research as follow:

1. Some of students were not too serious in answering the test. Some of them still did cheating. It made the answer of the test was not pure.
2. Some of students were noisy while the learning process. They were not concentrating. It made them cannot get the teacher's explanation well and gave the impact to post-test answer.
3. The students needed more time in applying small group discussion technique because it needed concentration to read narrative text of.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

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

1. The score of students' reading comprehension before using small group discussion technique at VIII grade of SMP Negeri 8 Padangsidimpuan was low. Because before using small group discussion technique the mean score of experimental class was 47.
2. After using small group discussion technique, the mean score of experimental class was higher than before using small group discussion technique. The mean score of post-test for experimental class was 83.9.
3. The result of the research showed that the students' in the experimental class was higher than control class. The result proves that t_0 was higher than t_t . t_0 was 4.16 and t_t was 1.29871 ($4.16 > 1.29871$). So, the hypothesis was accepted. It means that there was a significant effect of small group discussion technique on students' reading comprehension at grade VIII of SMP Negeri 8 Padangsidimpuan where H_a was accepted and H_o was rejected.

B. Suggestion

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

1. To principal of SMP Negeri 8 Padangsidimpuan, to motivate the teacher, especially English teachers to teach as well as possible by maximizing the using small group discussion technique in teaching English.
2. To English teacher, from the research result it can be seen that the students' score were unsatisfied. So, the researcher hopes to English teacher of SMP Negeri 8 Padangsidimpuan apply various innovative technique or strategy in teaching English. It also can be supported by choosing right strategy and good class management. Besides it, it is also important for students to follow learning process seriously because the success of learning is in students' result.
3. To the readers, the researcher hopes that the others researchers who want to conduct a research related to this research to find the others influence of these technique deeply.

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Appendix 1.

Lesson Plan (Experimental Class)

Nama Sekolah : SMP Negeri 8 Padangsidempuan
Mata Pelajaran : Bahasa Inggris
Kelas/Semester : VIII-2/ 1
Alokasi Waktu : 2 x 45 menit

A Standar Kompetensi

1. Memahami makna dalam teks fungsional pendek dan monolog sederhana berbentuk *narrative* teks dalam konteks kehidupan sehari-hari.
2. Mengungkapkan makna dalam teks fungsional pendek dan teks monolog berbentuk *narrative* dalam konteks kehidupan sehari-hari.

B Kompetensi Dasar

1. Merespon makna dalam teks monolog sederhana yang menggunakan ragam bahasa lisan secara akurat, lancar dan berterima dalam teks berbentuk *narrative*.
2. Mengungkapkan makna dalam teks monolog sederhana yang menggunakan ragam bahasa lisan secara akurat, lancar dan berterima dalam teks berbentuk *narrative*.

C Tujuan Pembelajaran

1. Siswa mampu memahami isi dari materi teks berbentuk *narrative*.
2. Siswa mampu merespon teks berbentuk *narrative*.

D Karakter siswa yang diharapkan

1. Mempunyai semangat kepemimpinan (*having spirit of leadership*)
2. Penuh tanggung jawab (*responsible*)
3. Komunikatif (*communicative*)
4. Bekerjasama (*cooperative*)

E Metode Pembelajaran

Small group discussion technique

F Materi Ajar

Narrative Text

G Langkah-langkah kegiatan

1. Pendahuluan

- a. Salam pembuka
- b. Absensi
- c. Memberikan motivasi terhadap siswa untuk berperan serta dalam pembelajaran.

2. Kegiatan inti

- a. Pengenalan objek: pengenalan objek harus diberikan kepada siswa diawal diskusi.
- b. Tujuan. Guru harus menjelaskan mengapa kelompok akan membahas topik yang dipilih.
- c. Hubungan. Guru harus menjelaskan bagaimana informasi ini sesuai dengan apa yang telah dipelajari atau apa yang akan dipelajari dimasa depan.
- d. Advanced organizer. Advanced organizer adalah semacam perebut perhatian yang menarik minat siswa.
- e. Guru bertugas mengarahkan siswa untuk memulai diskusi.
- f. Guru harus bertanya kepada siswa apakah mereka memiliki pertanyaan tentang topik tersebut. Pertanyaan ini bisa mulai diskusi atau guru mungkin ingin mengajukan beberapa pertanyaan dari pemikiran menstimulasi pemikiran ke topik.
- g. Cara lain untuk memulai diskusi adalah dengan meminta siswa untuk mengingat dan berbagi peristiwa pribadi yang telah terjadi dalam kehidupan mereka yang berkaitan dengan topik tersebut.
- h. Guru harus membuat ringkasan untuk membuat siswa memahami apa yang telah dibahas.
- i. Untuk diskusi kelompok kecil yang mencari konsensus, penting untuk meringkas untuk memastikan semua siswa berpikiran yang sama.
- j. Guru harus bertanya kepada siswa bagaimana mereka akan menggunakan informasinya.

3. Penutup

- a. Guru menanyakan kesulitan siswa selama pelajaran
- b. Guru membuat kesimpulan pelajaran.
- c. Salam penutup

H Sumber/ Bahan/ Alat

1. Buku bahasa Inggris kelas VIII
2. Kamus
3. Printed text

I Penilaian

Indikator	Teknik	Bentuk Test	Instrument
Mengidentifikasi informasi dari teks <i>narrative</i>	Literal test	Multiple choice	Choose the correct answer by crossing a, b, c, or d

Appendix 2.

Lesson Plan (Control Class)

Nama Sekolah : SMP Negeri 8 Padangsidimpuan
Mata Pelajaran : Bahasa Inggris
Kelas/Semester : VIII-2/ 1
Alokasi Waktu : 2 x 45 menit

J Standar Kompetensi

3. Memahami makna dalam teks fungsional pendek dan monolog sederhana berbentuk *narrative* teks dalam konteks kehidupan sehari-hari.
4. Mengungkapkan makna dalam teks fungsional pendek dan teks monolog berbentuk *narrative* dalam konteks kehidupan sehari-hari.

K Kompetensi Dasar

3. Merespon makna dalam teks monolog sederhana yang menggunakan ragam bahasa lisan secara akurat, lancar dan berterima dalam teks berbentuk *narrative*.
4. Mengungkapkan makna dalam teks monolog sederhana yang menggunakan ragam bahasa lisan secara akurat, lancar dan berterima dalam teks berbentuk *narrative*.

L Tujuan Pembelajaran

3. Siswa mampu memahami isi dari materi teks berbentuk *narrative*.
4. Siswa mampu merespon teks berbentuk *narrative*.

M Karakter siswa yang diharapkan

5. Mempunyai semangat kepemimpinan (*having spirit of leadership*)
6. Penuh tanggung jawab (*responsible*)
7. Komunikatif (*communicative*)
8. Bekerjasama (*cooperative*)

N Metode Pembelajaran

Conventional strategy

O Materi Ajar

Narrative text

P Langkah-langkah kegiatan

4. Pendahuluan
 - a. Salam pembuka
 - b. Absensi
 - c. Memberikan motivasi terhadap siswa untuk berepan serta dalam pembelajaran.

5. Kegiatan inti

- a. Guru menjelaskan pengertian *narrative text* dan *generic structure*nya.
- b. Guru memberikan contoh *narrative text*.
- c. Guru meminta siswa untuk memahami contoh *narrative text* tersebut.
- d. Guru memberikan latihan kepada siswa tentang *narrative text*.

6. Penutup

- a. Guru menanyakan kesulitan siswa selama pelajaran
- b. Guru membuat kesimpulan pelajaran.
- c. Salam penutup

Q Sumber/ Bahan/ Alat

4. Buku bahasa Inggris kelas VIII
5. Kamus
6. Printed text

R Penilaian

Indikator	Teknik	Bentuk Test	Instrument
Mengidentifikasi informasi dari teks <i>narrative</i>	Literal test	Multiple choice	Choose the correct answer by crossing a, b, c, or d

Appendix 3

Instrument for Pre-test

Name :

Class :

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

A. Text 1 is appropriate question to number 1-5

Long time ago, lived a pretty girl with her stepmother and two stepsisters. Her name was Cinderella. She was hard workers.

One day, the king wanted to find his son a good wife. So, he decided to have a party. All the girls in the town were invited. Cinderella wanted to go to the party, but here stepmother and her stepsisters would not let her go. She was very sad. Tears fall down to her cheeks.

Suddenly, her fairy Godmother appeared. "Why are you crying, Cinderella?" a voiced asked her. She looked up and saw her fairly godmother. "Because I want to go to the party so much," said Cinderella. "Well, you've been such a cheerful uncomplaining and hardworking girl. To pay that, you must go to the party," said the fairy godmother. Magically, the fair godmother changed a pumpkin into a fine coach and mice into a coachman and two footmen. Her fairy godmother tapped Cinderella's ragged dress with her hand, and it became a beautiful gown. She changed Cinderella into a beautiful princess. On her feet were two lonely glass slippers.

When Cinderella arrived, everybody went quiet. They were attracted by her beauty. The prince walked up to greet her. Cinderella remembered what her two step sisters had said about the prince that was handsome. Indeed, he was. She was happy to be with him. They danced the whole night through. The clock struck twelve. Cinderella ran out of the ballroom. In her hurry, she lost one of her glass slippers.

The next day, the prince sent his guard to find the girl whose foot fitted to the slipper. The guard found Cinderella. Her foot fitted to the slipper. Cinderella and the prince were married and they live happily ever after.

1. What is main idea of paragraph 2?
 - a. The king wanted to find his son a good wife
 - b. The king wanted to find his girl a good husband
 - c. The king decide to have a party
 - d. The king wanted a party

2. What is the talk about?
 - a. Cinderella
 - b. Beauty and beast
 - c. Beauty
 - d. Snow White

3. What is the moral value of the story above?
 - a. God will give us a wonderful gift if we always still be a good person (cheerful, hardworking, uncomplaining)
 - b. God will give us a bad gift if we always be a bad person
 - c. Don't never be patience.
 - d. Don't be yourself

4. So, He decided to have a party.
He refers to...
 - a. Cinderella
 - b. The fairy godmother
 - c. The king
 - d. Beauty

5. What is the purpose of the text above?
 - a. To tell us how to write a story
 - b. To inform what happen in the past
 - c. To give a describe of a beautiful girl
 - d. To retell about Cinderella's experience/memory

B. Text 2 is appropriate question to numbers 6-10

Once upon a time there lived a little girl named Snow White. She lived with her aunt and uncle because her parents were died.

One day she heard her uncle and aunt talking about leaving Snow White in the castle because they both wanted to go to America and they didn't have enough money to take Snow White.

Snow White didn't want her uncle and aunt to do that so she decided that it would be best if she ran away. The next morning she ran away into the woods. She was very tired and hungry. Then she saw a little cottage. She knocked but no one answered so she went inside and fell asleep.

Meanwhile, the seven dwarfs were coming home from work. There they found Snow White sleeping. Then Snow White woke up. She saw the dwarfs. The dwarfs said, "What is your name?" Snow White said, "My name is Snow White." Then, Snow White told the dwarfs the whole story. The dwarfs said, "If you want, you may live here with us." Snow White answered, "Oh, could I? Thank you." Finally, Snow White and the seven dwarfs lived happily ever after

6. What is the main idea of the first paragraph?
 - a. Snow white live with her aunt and uncle because her parents were died
 - b. Snow white live alone
 - c. Once upon a time there live a little, named Snow White

- d. Snow white live her parents
7. What is the text talk about?
- | | |
|---------------|------------------------------|
| a. Snow white | c. Snow white and her father |
| b. Beast | d. Snow white and beast |
8. What is the learn of the story Snow White?
- | |
|---|
| a. After tears become happiness |
| b. Snow white and the seven dwarfs live happily |
| c. Princess is lucky person |
| d. Happiness is being a princess |
9. She run away into the wood. (paragraph 3)
She refers to...
- | | |
|--------------|-----------------|
| a. Her aunt | c. Snow White |
| b. Her uncle | d. Seven dwarfs |
10. What is the purpose of the text above?
- | |
|--|
| a. To inform the readers about important and newsworthy events |
| b. To entertain readers with fairly tale |
| c. To share an account of unusual event |
| d. To persuade readers to accept his/her opinion |

C. Text 3 appropriate questions to number 11-15

A fox fell into a well and couldn't get out. by and by a thirsty goat came along. Seeing the fox in the water it asked if the water was good. "Good," said the fox, "It's the best water I've tasted in all my life. Come down and try it yourself."

The goat was thirsty so he got into the well. When he had drunk enough, he looked around but there was no way to get out. Then the fox said, "I have a good idea. You stand on your hind legs and put your forelegs against the side of the well. Then I'll climb on your back, from there. I'll step on your horns, and I can get out. And when I'm out, I'll help you out of the well."

The god did as he was asked and the fox got on his back and climbed out of the wall. Then he coolly walked away. The goat called out loudly after him and reminded him of his promise to help him out. The fox merely turn to him and said, "If you only had thought carefully about getting out, you wouldn't have jumped into the well."

The goat felt very sad. He called out loudly. An old man walking nearby heard him and put a plank into the well. The goat out and thanked the old man.

11. What is the main idea of paragraph 2?
- A fox fell into a well and couldn't get out
 - The goat was thirsty so he got into the well.
 - The goat coolly walked away
 - The goat felt very sad
12. What is text talk about?
- A fox
 - A goat
 - An old man
 - A fox and a goat
13. What is the learn of the story above?
- Before doing something you should think first
 - No need to think about what will happen when doing something
 - Walk with coolly
 - Do not think about doing something
14. Then he coolly walked away. (paragraph 3)
He refers to...
- Beast
 - Goat
 - Fox
 - Old man
15. What is the purpose of the text above?
- To entertain the readers with short story
 - To inform the reader about important and newsworthy events
 - To persuade readers to accept his/her opinions
 - To share an account of an unusual event

D. Text 4 is appropriate question 16-20

Once upon a time, there was a man who was living in north Sumatera he lived in a simple hut in a farming field. He did gardening and fishing for his daily life. One day, while the man was do fishing, he caught a big golden fish in his trap. It was the biggest catch which he ever had in his life. Surprisingly, this fish turned into a beautiful princess. He felt in love with her and proposed her to be his wife. She said; "yes, but you have to promise not to tell anyone about the secret I was once a fish, otherwise will be a huge disaster". The man made the deal and they got married, lived happily and had a son.

Few years later, this son would help bringing lunch to his father in the fields. One day, his son was so very hungry and he ate his father lunch. Unfortunately, he found out and

got furious, and shouted; “you dammed son of a fish”. The son ran home and asked his mother. The mother started crying, felt sad that her husband had broken his promise.

The she told her son to run up the hills because a huge disaster was about to come. When her son left, she prayed. Soon there was a big earthquake followed by non-stop pouring rain. The whole area got flooded and became Toba Lake and she turned into a fish again.

16. What is the main idea of paragraph 1?
- a. He did gardening and fishing for his daily life
 - b. A man married with golden fish and had a son
 - c. A man caught a big golden fish
 - d. A golden fish turned into a ugly princess
17. What is the text talk about?
- a. The story of Lake Toba
 - b. The life’s man
 - c. The man and golden fish
 - d. The man and beautiful princess
18. What is the learn of the story?
- a. A promise is everything
 - b. Don’t angry with son
 - c. Don’t forget your mother
 - d. Listen everything people talk
19. He lived in a simple hut in a farming field (paragraph 1)
He refers to...
- a. A golden fish
 - b. A man
 - c. A son
 - d. A beautiful princess
20. What is the purpose of the text?
- a. To entertain the readers
 - b. To describe about lake toba
 - c. To report about lake toba
 - d. To give information about how to make lake toba

Appendix 4

Instrument for Post-test

Name :

Class :

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

A Text 1 is appropriate question to number 1-5

Once upon a time, there lived a handsome boy in Baghdad. The name was Aladdin. He was a clever boy, but he did not like to work. One day Aladdin's mother sent him to the market place to look for a job. In the market he met a magician. The magician asked him to work together with him. If Aladdin could do, he would get a lot of gold coins and jewelers. The magician asked Aladdin to go inside the cave and find the magical lamp there. He also gave a ring and said, "If you are in any trouble, rub this ring and a genie will come to your rescue!" Aladdin went into the cave. Inside the cave, Aladdin was surprised by what he saw. Every corner was full of gold and treasures. A few minutes later, he found the lamp and quickly returned to the entrance of the cave. Aladdin called out, "Magician, I have found the lamp". "Excellent," answer the magician. "Quick, pass it to me!" Aladdin did not trust the magician so he said, "Not so fast magician. You must help me out of this cave first."

The magician became very angry. When Aladdin was walking to the entrance; the magician pushed a huge rock over the entrance of the cave and left Aladdin and the lamp behind. Aladdin tried to move the rock all by himself, but it was too big and heavy, "Oh no! I am trapped in the cave!" he cried. Suddenly, he remembered the magic ring. He rubbed it with the palm of his hnd. To his surprise, a genie appeared before him and in a powerful voice said, "Master, I am the genie of the ring. How can I help you?" Aladdin was frightened, but soon found the courage to ask, "Could you please send me back to my house?" in no time at all Aladdin was backing home.

Aladdin took out the lamp. He wondered what would happen if he rubbed it. As Aladdin was rubbing it, all of a sudden another enormous genie stood before him. The genie of the lamps said, "Master, your wish is my command." Aladdin was very excited and wished for an enormous palace and bags full of gold. One day, a beautiful princess was passing by Aladdin's place. She stopped to talk to Aladdin and soon they become good friends. Before long, Aladdin and jasmine fell in love each other. She married Aladdin and lived happily.

1. What the main idea of paragraph 2?
 - a. The magician became very angry
 - b. The magician want Aladdin give a lamp
 - c. Aladdin back home
 - d. The magician wan Aladdin take a lamp in cave

2. What is the text talk about?
 - a. Aladdin and magic lamp
 - b. A clever boy
 - c. A handsome boy
 - d. Aladdin and jasmine

3. What is the value of the story above?
 - a. Don't look at some because of his clothes
 - b. It is best for prepare for the days of necessity
 - c. It's better to be yourself than to pretend to be something you're not
 - d. United we stand, divided we fall

4. One day, a beautiful princess was passing by Aladdin's palace. (Paragraph 3)
The synonyms of the underlined word...
 - a. Pretty
 - b. Ugly
 - c. Good
 - d. Nice

5. What is the purpose of the text above?
 - a. To entertain the readers about story Aladdin and magic lamp
 - b. To persuade the readers that something should or should no be the case
 - c. To inform the readers about the events of the day which are considered
 - d. The explain something

B Text 2 is appropriate to number 6-10

There was once a young shepherd boy who tended his sheep at the foot of a mountain near a dark forest. It was lonely for him watching the sheep all day. No one was near; except for three farmers he could sometimes see working in the fields in the valley below.

One day the boy bought a plan that would help him get a little company and have some fun. He ran down toward the valley crying, "Wolf! Wolf!" the men ran to meet him, and after they found out there was no wolf after all, one man remained to talk with the boy awhile. The boy enjoyed the company so much that a few days later he tried the same prank again, and again the men ran to help him.

A few days later, a real wolf came from the forest and began to steal the sheep. The started boy ran toward the valley, and more loudly than ever he cried, "Wolf! Wolf" But the men, who had been fooled twice before, thought that the boy was tricking them again. So no one came to help the boy save his sheep.

6. What is the main idea of paragraph 1?
 - a. A young shepherd boy who tended his sheep
 - b. A wolf and the wolf
 - c. A boy tended his wolf
 - d. The boy watching the sheep all day

7. What is the text talk about?

- a. The boy and the sheep
 - b. The boy who cried wolf
 - c. The boy and the wolf
 - d. The boy who cried a sheep
8. What is the value find from the story
- a. Don't worry
 - b. Don't make mistake
 - c. Nobody believes liar, even when he tells the truth
 - d. Don't make people sad
9. He ran toward the valley crying. (paragraph 2)
He refers to...
- a. Young man
 - b. Green boy
 - c. The boy
 - d. Old father
10. What is the purpose of the text above?
- a. To entertain the readers about never lie
 - b. To describe the reader about the story
 - c. To inform what happen in the past
 - d. To give a description about bad man

C Text 3 is appropriate question to number 11-15

Once upon a time, there was a girl named Beauty. She lived with her father and her sister in a small village. Beauty was beautiful girl. She was hard worker. She always helped her father on the farm.

One day, her father set out for the city. He saw an old castle and wet in. no one was in, but here was food on the table. Then, he walked around the castle. He picked a rose from the garden for Beauty. Suddenly, an angry Beast appeared. He wanted to kill Beauty's father, unless Beauty was brought to him.

Beauty's father told his daughters what had happened. Beauty's sisters order her to see the beast. Beauty wants to the Beast and had to stay the castle. She left scared, lonely and sad. She tried to run away, but she was stopped by the Beast. The Beast treated Beauty well. Soon, Beauty began to like the Beast.

One day, through the Beast's magic mirror. Beauty saw that her father was sick. The Beast allowed her to go home. Her father was happy to see her. One night, Beauty had a dream. A fairy told her that Beast was sick. Beauty hurried back and saw the Beast dying.

She began to cry. Tears fell into the Beast. Suddenly, the Beast changed into handsome prince. Beauty and the Beast got married and live happily ever after.

11. What is the main idea of paragraph 1?
 - a. Beauty lived with her father and her sister in a small village
 - b. Beauty lived with beast in small village
 - c. Beauty lived alone
 - d. There was a girl named Beauty

12. What is text talk about?
 - a. Beauty and the beast
 - b. Cinderella
 - c. Beauty
 - d. Beast

13. What is the message of the story above?
 - a. Don't look at someone because of his clothes
 - b. It is best fro prepare for days of necessity
 - c. Common people may prove great ones
 - d. That beauty is on the inside and that people should not be judge on appearances

14. She lived with her father and her sister in a small village. (paragraph 1)
The antonym of the underline word...
 - a. Big
 - b. Biggest
 - c. Any
 - d. All

15. What is the purpose of text above?
 - a. To tell us how to write a story
 - b. To inform what happen in the past
 - c. To give a description of a beauty girl
 - d. To retell about beauty's experience

D Text 4 is appropriate question to number 16-20

Once there was a farmer in Laos. Every morning and afternoon he plowed field with the help of his buffalo.

One day a tiger saw the farmer and his buffalo working. The tiger was surprise to see a big animal listening to a small animal. He wanted to know more about the buffalo and the man.

After the man went home, the tiger spoke to the buffalo. “You are so big and strong, why do you do everything the man tells you?” and buffalo answered “Oh, the man is very intelligent”.

So the next day the tiger said to the man. “Can I see you intelligence?” but the man answered, “It’s at home”. “Can you go and get it?” asked the tiger. “Yes”, said the man, “But I’m afraid you will kill my buffalo when I am gone”. He took his plow and hit the tiger with a stick. The he said, “Now you know about my intelligence even if you haven’t seen it”.

16. What is the main idea of paragraph 1?
- Once there was a farmer in Laos
 - The tiger spoke to the buffalo
 - Can I see you intelligence
 - One day a tiger saw the farmer and his buffalo working
17. What is the text talk about?
- The farmer, buffalo and a tiger
 - The man
 - A buffalo and tiger
 - A tiger
18. What is the learn of the story above?
- A buffalo is more intelligent than a tiger
 - Never underestimate others
 - The size of body determines the power
 - Never plow the field in the morning
19. The tiger was surprised to see big animal listening to a small animal (paragraph 2)
The underline word means...
- Hear
 - Afraid
 - Obey
 - Weak
20. What is the purpose of the text above?
- To describe how the man get intelligence
 - To share an account of an usual event
 - To entertain the reader about human intelligence
 - To inform the readers about important and newsworthy events

Appendix 5

Key Answer for Pre-test

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

Key Answer for Post-test

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

Appendix 6

Validity of Pre-Test

NO	NO ITEM																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	1
2	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	1
3	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1
4	1	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	1	1	1	1
5	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0
6	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1
7	0	1	1	1	0	1	1	1	1	0	0	1	1	0	0	1	1	0	1	1
8	1	1	1	0	0	0	0	0	1	1	0	1	1	0	0	0	1	0	1	0
9	1	1	0	1	0	1	1	1	1	0	1	1	1	0	0	1	1	1	1	1
10	1	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	1	0	1	1
11	0	0	1	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0
12	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1
13	0	0	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	1	0	0
14	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1
16	1	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	0	1	1	1
17	0	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	0	1	1
18	1	1	0	1	0	0	1	0	1	0	1	0	0	0	0	1	1	0	0	1
19	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	1	1	1	1	0
20	0	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	1	1	0	1
21	1	0	1	1	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1
22	1	0	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1
23	1	1	1	1	1	1	0	0	1	0	1	0	0	1	1	1	0	1	1	0
24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1
25	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
26	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0
27	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	1	1	1	1	0
28	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1
29	1	0	1	1	0	1	1	1	1	0	1	1	1	0	0	1	1	1	1	1
30	1	1	1	0	0	1	1	1	1	1	0	1	1	0	0	1	0	1	1	1
N=																				
30	18	24	25	21	12	21	23	22	26	13	22	22	18	7	11	23	18	23	24	21
p	0,6	0,8	0,8	0,7	0,4	0,7	0,8	0,7	0,9	0,4	0,7	0,7	0,6	0,2	0,4	0,8	0,6	0,8	0,8	0,7
q	0,4	0,2	0,2	0,3	0,6	0,3	0,2	0,3	0,1	0,6	0,3	0,3	0,4	0,8	0,6	0,2	0,4	0,2	0,2	0,3

Appendix 7

Validity of Post-Test

No	NO ITEM																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1
2	1	1	0	1	0	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1
3	1	1	0	1	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1
4	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
5	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0
6	1	1	0	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1
7	1	1	0	1	0	0	0	0	0	1	1	0	1	0	1	1	0	0	0	0	0
8	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	0	1	0	0
9	1	1	0	0	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1
10	1	0	0	0	1	1	1	0	1	0	1	1	1	1	0	1	1	0	1	0	0
11	0	0	0	0	0	1	1	1	1	1	0	1	0	0	1	0	0	0	1	0	0
12	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	0	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1
14	1	1	0	1	1	1	1	1	1	1	0	0	1	1	0	0	1	1	1	1	1
15	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
16	1	1	0	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1
17	0	1	1	0	0	0	0	1	1	1	1	1	1	0	1	0	1	1	1	1	0
18	0	0	1	0	1	0	1	1	0	1	1	0	1	0	0	1	1	1	1	1	0
19	1	1	0	1	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	1	1	0	1	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1
22	0	0	1	1	1	1	1	1	0	0	1	0	1	1	0	1	1	1	1	1	0
23	1	0	0	0	1	1	1	0	1	1	0	1	1	1	1	1	0	0	0	1	0
24	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
25	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
26	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
27	1	1	0	0	1	1	0	1	1	0	0	1	1	0	0	1	1	1	0	0	0
28	1	1	0	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1
29	1	1	0	1	0	1	1	0	1	1	1	0	1	1	0	0	0	1	1	1	1
30	1	1	0	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1
N=																					
30	22	22	7	18	11	23	18	23	24	21	18	14	25	21	12	22	23	22	26	16	2
p	0,7	0,7	0,2	0,6	0,4	0,8	0,6	0,8	0,8	0,7	0,6	0,4	0,8	0,7	0,4	0,7	0,8	0,7	0,9	0,5	0
q	0,3	0,3	0,8	0,4	0,6	0,2	0,4	0,2	0,2	0,7	0,4	0,6	0,2	0,3	0,6	0,3	0,2	0,3	0,1	0,5	0

	24	16	16	21	24	21	16	21	09	24	21	21	24	16	24	16	24	16	16	21	2
--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---

	21	21	16	24	24	16	24	16	16	21	24	24	16	21	24	21	16	21	09	25
--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Appendix 10

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

A Calculation of Pre-test

1. Means score from score total (M_t)

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

$$M_t = \frac{499}{30} = 16.63$$

2. Standard deviation (SD_t)

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

$$SD_t = \sqrt{\frac{9120}{30} - \left(\frac{499}{30}\right)^2}$$

$$SD_t = \sqrt{304 - 16.63^2}$$

$$SD_t = \sqrt{304 - 276,5}$$

$$SD_t = \sqrt{27,5} = 5.25$$

3. Mean score (M_p)

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

$$M_{p1} = \frac{22 + 20 + 21 + 19 + 21 + 12 + 18 + 15 + 22 + 22 + 20 + 14 + 20 + 20 + 17 + 21 + 18 + 19}{18}$$

$$M_{p1} = \frac{341}{18} = 18.94$$

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

$$M_{p2} = \frac{21 + 20 + 21 + 19 + 7 + 21 + 15 + 12 + 18 + 15 + 22 + 19 + 22 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 17 + 12 + 21 + 19}{24}$$

$$M_{p2} = \frac{426}{24} = 17.75$$

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

$$M_{p3} = \frac{21 + 20 + 21 + 19 + 21 + 15 + 12 + 15 + 9 + 22 + 16 + 19 + 22 + 20 + 17 + 20 + 17 + 20 + 17 + 17 + 21 + 5 + 21 + 18 + 19}{25}$$

$$M_{p3} = \frac{445}{25} = 17.76$$

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

$$M_{p4} = \frac{21 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 16 + 19 + 22 + 17 + 14 + 20 + 17 + 20 + 17 + 17 + 5 + 21}{21}$$

$$M_{p4} = \frac{378}{21} = 18.00$$

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

$$M_{p5} = \frac{21 + 20 + 15 + 22 + 19 + 22 + 20 + 20 + 17 + 21 + 12 + 21}{12}$$

$$M_{p5} = \frac{230}{12} = 19.16$$

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

$$M_{p6} = \frac{21 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 16 + 19 + 22 + 17 + 20 + 17 + 17 + 21 + 12 + 21 + 18 + 19}{21}$$

$$M_{p6} = \frac{391}{21} = 18,61$$

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

$$M_{p7} = \frac{21 + 20 + 21 + 21 + 15 + 18 + 15 + 9 + 16 + 19 + 22 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 21 + 12 + 21 + 18 + 19}{23}$$

$$M_{p7} = \frac{413}{23} = 17.95$$

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

$$M_{p8} = \frac{21 + 20 + 21 + 19 + 7 + 21 + 15 + 12 + 18 + 22 + 16 + 19 + 22 + 20 + 20 + 17 + 21 + 5 + 21 + 18 + 19}{22}$$

$$M_{p8} = \frac{394}{22} = 17.90$$

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

$$M_{p9} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 9 + 22 + 16 + 19 + 22 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 17 + 4 + 21 + 21 + 18 + 19}{26}$$

$$M_{p9} = \frac{461}{26} = 17.73$$

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

$$M_{p10} = \frac{21 + 12 + 15 + 22 + 16 + 22 + 20 + 17 + 20 + 20 + 17 + 21 + 19}{13}$$

$$M_{p10} = \frac{251}{13} = 19,30$$

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

$$M_{p11} = \frac{21 + 20 + 21 + 19 + 21 + 12 + 18 + 22 + 16 + 19 + 22 + 20 + 17 + 14 + 17 + 20 + 17 + 17 + 21 + 12 + 21 + 18}{22}$$

$$M_{p11} = \frac{406}{22} = 18.40$$

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

$$M_{p12} = 21 \frac{20 + 21 + 19 + 21 + 15 + 12 + 18 + 9 + 22 + 19 + 22 + 20 + 17 + 20 + 17 + 20 + 17 + 21 + 18 + 19}{22}$$

$$M_{p12} = 21 \frac{410}{22} = 18.63$$

Item 13 $M_{p13} = \frac{\text{the total of students score that answer true item}}{n13}$

$$M_{p13} = \frac{21 + 20 + 19 + 21 + 15 + 18 + 15 + 9 + 22 + 19 + 22 + 17 + 20 + 17 + 21 + 21 + 18 + 19}{18}$$

$$M_{p13} = \frac{335}{18} = 18.61$$

Item 14 $M_{p14} = \frac{\text{the total of students score that answer true item}}{n14}$

$$M_{p14} = \frac{21 + 20 + 17 + 17 + 21 + 18}{7}$$

$$M_{p14} = \frac{131}{7} = 18.71$$

Item 15 $M_{p15} = \frac{\text{the total of students score that answer true item}}{n15}$

$$M_{p15} = \frac{21 + 7 + 22 + 20 + 17 + 17 + 17 + 4 + 21 + 5 + 12}{11}$$

$$M_{p15} = \frac{163}{11} = 14.81$$

Item 16 $M_{p16} = \frac{\text{the total of students score that answer true item}}{n16}$

$$M_{p16} = \frac{21 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 16 + 22 + 20 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 21 + 12 + 21 + 18 + 19}{23}$$

$$M_{p16} = \frac{418}{23} = 18.17$$

Item 17 $M_{p17} = \frac{\text{the total of students score that answer true item}}{n17}$

$$M_{p17} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 9 + 22 + 16 + 14 + 20 + 17 + 20 + 17 + 12 + 18}{18}$$

$$M_{p17} = \frac{316}{18} = 17.55$$

Item 18 $M_{p18} = \frac{\text{the total of students score that answer true item}}{n18}$

$$M_{p18} = \frac{21 + 20 + 21 + 19 + 21 + 12 + 18 + 22 + 16 + 19 + 22 + 20 + 20 + 17 + 20 + 17 + 17 + 4 + 21 + 12 + 21 + 18 + 19}{23}$$

$$M_{p18} = \frac{417}{23} = 18.13$$

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

$$M_{p19} = \frac{21 + 20 + 21 + 19 + 7 + 21 + 15 + 18 + 15 + 22 + 19 + 22 + 20 + 17 + 20 + 20 + 17 + 17 + 4 + 21 + 12 + 21 + 18 + 19}{24}$$

$$M_{p19} = \frac{426}{24} = 17.75$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 19 + 22 + 20 + 17 + 14 + 17 + 20 + 17 + 21 + 21 + 18 + 19}{21}$$

$$M_{p20} = \frac{398}{21} = 18.95$$

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

$$M_{p21} = \frac{21 + 20 + 19 + 12 + 18 + 15 + 22 + 16 + 19 + 22 + 17 + 14 + 20 + 20 + 17 + 17 + 21 + 12 + 21 + 18 + 19}{21}$$

$$M_{p21} = \frac{380}{21} = 18.09$$

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

$$M_{p22} = \frac{21 + 20 + 21 + 19 + 7 + 21 + 22 + 16 + 19 + 22 + 20 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 21 + 12 + 21 + 19}{21}$$

$$M_{p22} = \frac{386}{21} = 18.38$$

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

$$M_{p23} = \frac{21 + 21 + 19 + 21 + 15 + 18 + 9 + 22 + 16 + 19 + 22 + 20 + 17 + 14 + 20 + 17 + 20 + 17 + 17 + 21 + 5 + 21 + 18 + 19}{24}$$

$$M_{p23} = \frac{429}{24} = 17.87$$

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

$$M_{p24} = \frac{22 + 20 + 21 + 19 + 7 + 21 + 15 + 12 + 18 + 15 + 9 + 16 + 19 + 22 + 20 + 14 + 20 + 20 + 17 + 21 + 21 + 18 + 19}{23}$$

$$M_{p24} = \frac{406}{23} = 17.65$$

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

$$M_{p25} = \frac{21 + 20 + 21 + 19 + 7 + 21 + 12 + 15 + 9 + 22 + 16 + 19 + 22 + 20 + 17 + 14 + 20 + 20 + 17 + 21 + 21 + 18 + 19}{23}$$

$$M_{p25} = \frac{412}{23} = 17.91$$

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

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

$$r_{pbi} = \frac{18.94 - 16.63}{5.25} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{2.31}{5.25} \sqrt{1.5}$$

$$r = 0.44 \times 1.22 = 0.536$$

Item 2 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.75 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.12}{5.25} \sqrt{4}$$

$$r = 0.213 \times 2 = 0.426$$

Item 3 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.75 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.13}{5.25} \sqrt{4}$$

$$r = 0.215 \times 2 = 0.430$$

Item 4 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.00 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{1.37}{5.25} \sqrt{2.33}$$

$$r = 0.60 \times 1.52 = 0.396$$

Item 5 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{19.16 - 16.63}{5.25} \sqrt{\frac{0.4}{0.6}}$$

$$r = \frac{2.53}{5.25} \sqrt{0.66}$$

$$r = 0.481 \times 0.81 = 0.149$$

$$\begin{aligned} \text{Item 6 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.6 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}} \\ r &= \frac{1.98}{5.25} \sqrt{2.33} \\ r &= 0.377 \times 1.52 = 0.573 \end{aligned}$$

$$\begin{aligned} \text{Item 7 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{17.19 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}} \\ r &= \frac{1.32}{5.25} \sqrt{4} \\ r &= 0.351 \times 2 = 0.702 \end{aligned}$$

$$\begin{aligned} \text{Item 8 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{17.90 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}} \\ r &= \frac{1.32}{5.25} \sqrt{2.33} \\ r &= 0.241 \times 1.52 = 0.367 \end{aligned}$$

$$\begin{aligned} \text{Item 9 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{17.73 - 16.63}{5.25} \sqrt{\frac{0.9}{0.1}} \\ r &= \frac{1.07}{5.25} \sqrt{9} \\ r &= 0.202 \times 3 = 0.606 \end{aligned}$$

$$\begin{aligned} \text{Item 10 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{19.30 - 16.63}{5.25} \sqrt{\frac{0.4}{0.6}} \\ r &= \frac{1.1}{5.25} \sqrt{0.66} \\ r &= 0.209 \times 0.81 = 0.064 \end{aligned}$$

$$\begin{aligned} \text{Item 11 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.40 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}} \\ r &= \frac{1.77}{5.25} \sqrt{2.33} \\ r &= 0.337 \times 1.52 = 0.512 \end{aligned}$$

$$\text{Item 12 } r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{18.63 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2}{5.070} \sqrt{2.33}$$

$$r = 0.380 \times 1.52 = 0.579$$

Item 13 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.61 - 16.63}{5.25} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{1.98}{5.25} \sqrt{1.5}$$

$$r = 0.377 \times 1.22 = 0.460$$

Item 14 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.71 - 16.63}{5.25} \sqrt{\frac{0.2}{0.8}}$$

$$r = \frac{2.08}{5.25} \sqrt{0.25}$$

$$r = 0.396 \times 0.5 = 0.198$$

Item 15 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{14.81 - 16.63}{5.25} \sqrt{\frac{0.4}{0.6}}$$

$$r = \frac{-1.82}{5.25} \sqrt{0.66}$$

$$r = -0.346 \times 0.31 = -0.107$$

Item 16 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.17 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.54}{5.25} \sqrt{4}$$

$$r = 0.293 \times 2 = 0.586$$

Item 17 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.55 - 16.63}{5.25} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{0.92}{5.25} \sqrt{1.5}$$

$$r = 0.175 \times 1.22 = 0.213$$

Item 18 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.13 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.5}{5.25} \sqrt{4}$$

$$r = 0.285 \times 2 = 0570$$

Item 19 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.79 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.16}{5.25} \sqrt{4}$$

$$r = 0.220 \times 2 = 0.441$$

Item 20 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.95 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2.32}{5.25} \sqrt{2.33}$$

$$r = 0.441 \times 1.52 = 0.671$$

Item 21 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.09 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{1.46}{5.25} \sqrt{2.33}$$

$$r = 0.278 \times 1.52 = 0.422$$

Item 22 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.38 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{1.75}{5.25} \sqrt{2.33}$$

$$r = 0.333 \times 1.52 = 0.506$$

Item 23 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.87 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.24}{5.25} \sqrt{4}$$

$$r = 0.236 \times 2 = 0.472$$

Item 24 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.56 - 16.63}{5.25} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.02}{5.25} \sqrt{4}$$

$$r = 0.194 \times 2 = 0.388$$

Item 25 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.91 - 16.63}{5.25} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{1.28}{5.25} \sqrt{2.33}$$

$$r = 0.243 \times 1.52 = 0.370$$

Appendix 11

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

B Calculation of Post-test

5. Means score from score total (M_t)

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

$$M_t = \frac{497}{30} = 16.56$$

6. Standard deviation (SD_t)

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

$$SD_t = \sqrt{\frac{8997}{30} - \left(\frac{497}{30}\right)^2}$$

$$SD_t = \sqrt{299.9 - 16.56^2}$$

$$SD_t = \sqrt{299.9 - 274.2}$$

$$SD_t = \sqrt{25.7} = 5.070$$

7. Mean score (M_p)

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

$$M_{p1} = \frac{22 + 21 + 19 + 21 + 15 + 12 + 15 + 22 + 16 + 22 + 20 + 14 + 14 + 20 + 20 + 16 + 23 + 21 + 18 + 20}{19}$$

$$M_{p1} = \frac{351}{19} = 18.47$$

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

$$M_{p2} = \frac{20 + 7 + 15 + 12 + 9 + 22 + 22 + 14 + 16 + 15 + 5 + 5 + 12}{15}$$

$$M_{p2} = \frac{188}{15} = 13.42$$

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

$$M_{p3} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 15 + 23 + 12 + 21 + 18 + 20}{25}$$

$$M_{p3} = \frac{459}{25} = 18.36$$

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

$$M_{p4} = \frac{22 + 20 + 21 + 19 + 21 + 18 + 15 + 22 + 16 + 19 + 22 + 20 + 20 + 20 + 16 + 20 + 16 + 15 + 23 + 21 + 18 + 20}{21}$$

$$M_{p4} = \frac{404}{21} = 19.23$$

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

$$M_{p5} = \frac{22 + 21 + 7 + 21 + 15 + 12 + 9 + 22 + 14 + 20 + 15 + 23}{12}$$

$$M_{p5} = \frac{201}{12} = 16.75$$

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

$$M_{p6} = \frac{22 + 20 + 21 + 19 + 7 + 21 + 15 + 18 + 15 + 22 + 16 + 22 + 20 + 14 + 20 + 16 + 20 + 16 + 15 + 23 + 12 + 21}{22}$$

$$M_{p6} = \frac{395}{22} = 17.95$$

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

$$M_{p7} = \frac{22 + 20 + 21 + 19 + 21 + 12 + 18 + 15 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 20 + 16 + 15 + 23 + 12 + 21 + 20}{23}$$

$$M_{p7} = \frac{422}{23} = 18.34$$

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

$$M_{p8} = \frac{22 + 20 + 21 + 19 + 21 + 18 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 23 + 12 + 21 + 18 + 20}{22}$$

$$M_{p8} = \frac{414}{22} = 18.81$$

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

$$M_{p9} = \frac{22 + 20 + 21 + 19 + 21 + 12 + 18 + 15 + 9 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 4 + 23 + 5 + 21 + 18 + 20}{26}$$

$$M_{p9} = \frac{447}{26} = 17.19$$

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

$$M_{p10} = \frac{22 + 20 + 21 + 19 + 21 + 18 + 22 + 16 + 19 + 22 + 20 + 20 + 20 + 23 + 21 + 18 + 20}{17}$$

$$M_{p10} = \frac{342}{17} = 20.11$$

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

$$M_{p11} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 16 + 19 + 22 + 20 + 16 + 20 + 15 + 23 + 12 + 21 + 18 + 20}{22}$$

$$M_{p11} = \frac{415}{22} = 18.86$$

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

$$M_{p12} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 22 + 16 + 19 + 22 + 20 + 14 + 20 + 16 + 20 + 23 + 12 + 21 + 18 + 20}{22}$$

$$M_{p12} = \frac{411}{22} = 18.68$$

$$\text{Item 13 } M_{p13} = \frac{\text{the total of students score that answer true item}}{n13}$$

$$M_{p13} = \frac{22 + 7 + 15 + 16 + 14 + 14 + 16}{7}$$

$$M_{p13} = \frac{104}{7} = 14.85$$

$$\text{Item 14 } M_{p14} = \frac{\text{the total of students score that answer true item}}{n14}$$

$$M_{p14} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 22 + 19 + 22 + 20 + 20 + 16 + 20 + 16 + 23 + 21 + 18 + 20}{18}$$

$$M_{p14} = \frac{355}{18} = 19.72$$

$$\text{Item 15 } M_{p15} = \frac{\text{the total of students score that answer true item}}{n15}$$

$$M_{p15} = \frac{18 + 15 + 19 + 22 + 14 + 16 + 15 + 4 + 23 + 5 + 12}{11}$$

$$M_{p15} = \frac{163}{11} = 14.81$$

$$\text{Item 16 } M_{p16} = \frac{\text{the total of students score that answer true item}}{n16}$$

$$M_{p16} = \frac{22 + 20 + 21 + 19 + 7 + 21 + 15 + 9 + 22 + 16 + 19 + 22 + 20 + 20 + 16 + 20 + 16 + 15 + 23 + 12 + 21 + 18 + 20}{23}$$

$$M_{p16} = \frac{414}{23} = 18$$

$$\text{Item 17 } M_{p17} = \frac{\text{the total of students score that answer true item}}{n17}$$

$$M_{p17} = \frac{22 + 20 + 21 + 19 + 21 + 18 + 15 + 9 + 22 + 19 + 22 + 20 + 14 + 16 + 23 + 21 + 18 + 20}{18}$$

$$M_{p17} = \frac{340}{18} = 24.44$$

$$\text{Item 18 } M_{p18} = \frac{\text{the total of students score that answer true item}}{n18}$$

$$M_{p18} = \frac{22 + 20 + 21 + 19 + 21 + 18 + 9 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 15 + 23 + 5 + 12 + 21 + 20}{23}$$

$$M_{p18} = \frac{404}{23} = 17.56$$

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

$$M_{p19} = \frac{22 + 20 + 21 + 19 + 21 + 12 + 18 + 15 + 9 + 22 + 16 + 19 + 22 + 20 + 14 + 20 + 16 + 20 + 15 + 23 + 5 + 12 + 21 + 18 + 20}{24}$$

$$M_{p19} = \frac{447}{24} = 18.62$$

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

$$M_{p20} = \frac{21 + 19 + 21 + 15 + 12 + 18 + 9 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 20 + 15 + 23 + 21 + 18 + 20}{21}$$

$$M_{p20} = \frac{379}{21} = 18.04$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 15 + 22 + 16 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 15 + 23 + 21 + 18 + 20}{25}$$

$$M_{p20} = \frac{459}{25} = 18.36$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 9 + 22 + 19 + 22 + 20 + 20 + 16 + 20 + 15 + 23 + 12 + 21 + 18 + 20}{22}$$

$$M_{p20} = \frac{405}{22} = 18.40$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 21 + 12 + 14 + 20 + 20 + 4 + 23 + 21 + 18 + 20}{13}$$

$$M_{p20} = \frac{245}{13} = 18.84$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 18 + 15 + 22 + 19 + 22 + 20 + 14 + 20 + 16 + 20 + 16 + 15 + 23 + 5 + 21 + 18 + 20}{23}$$

$$M_{p20} = \frac{422}{23} = 18.34$$

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

$$M_{p20} = \frac{22 + 20 + 21 + 19 + 21 + 15 + 12 + 18 + 15 + 22 + 19 + 22 + 20 + 14 + 14 + 20 + 16 + 20 + 16 + 23 + 21 + 18 + 20}{23}$$

$$M_{p20} = \frac{428}{23} = 18.60$$

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

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

$$r_{pbi} = \frac{18.47 - 16.56}{5.070} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{1.91}{5.070} \sqrt{1.5}$$

$$r = 0.376 \times 1.22 = 0.459$$

Item 2 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{13.42 - 16.56}{5.070} \sqrt{\frac{0.4}{0.6}}$$

$$r = \frac{-3.14}{5.070} \sqrt{0.66}$$

$$r = -0.619 \times 0.81 = -0.501$$

Item 3 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.36 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.8}{5.070} \sqrt{4}$$

$$r = 0.355 \times 2 = 0.710$$

Item 4 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{19.23 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2.67}{5.070} \sqrt{2.33}$$

$$r = 0.526 \times 1.52 = 0.800$$

Item 5 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{16.75 - 16.56}{5.070} \sqrt{\frac{0.4}{0.6}}$$

$$r = \frac{0.19}{5.070} \sqrt{0.66}$$

$$r = 0.037 \times 0.81 = 0.030$$

Item 6 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.95 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{1.39}{5.070} \sqrt{2.33}$$

$$r = 0.274 \times 1.52 = 0.416$$

Item 7 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.34 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.78}{5.070} \sqrt{4}$$

$$r = 0.351 \times 2 = 0.702$$

Item 8 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.81 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2.25}{5.070} \sqrt{2.33}$$

$$r = 0.443 \times 1.52 = 0.674$$

Item 9 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.19 - 16.56}{5.070} \sqrt{\frac{0.9}{0.1}}$$

$$r = \frac{0.63}{5.070} \sqrt{9}$$

$$r = 0.124 \times 3 = 0.372$$

Item 10 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{20.11 - 16.56}{5.070} \sqrt{\frac{0.5}{0.5}}$$

$$r = \frac{3.55}{5.070} \sqrt{1}$$

$$r = 0.700 \times 1 = 0.700$$

Item 11 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.86 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2.3}{5.070} \sqrt{2.33}$$

$$r = 0.453 \times 1.52 = 0.688$$

Item 12 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18.68 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}}$$

$$r = \frac{2.12}{5.070} \sqrt{2.33}$$

$$r = 0.418 \times 1.52 = 0.635$$

Item 13 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{14.85 - 16.56}{5.070} \sqrt{\frac{0.2}{0.8}}$$

$$r = \frac{-1.71}{5.070} \sqrt{0.25}$$

$$r = -0.337 \times 0.5 = 0.168$$

Item 14 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{19.62 - 16.56}{5.070} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{3.06}{5.070} \sqrt{1.5}$$

$$r = 0.603 \times 1.22 = 0.735$$

Item 15 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{14.81 - 16.56}{5.070} \sqrt{\frac{0.4}{0.6}}$$

$$r = \frac{-1.75}{5.070} \sqrt{0.66}$$

$$r = -0.345 \times 0.81 = -0.279$$

Item 16 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{18 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1.44}{5.070} \sqrt{4}$$

$$r = 0.284 \times 2 = 0.568$$

Item 17 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{24.44 - 16.56}{5.070} \sqrt{\frac{0.6}{0.4}}$$

$$r = \frac{7.88}{5.070} \sqrt{1.5}$$

$$r = 1.55 \times 1.22 = 1.89$$

Item 18 $r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$

$$r_{pbi} = \frac{17.5 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{1}{5.070} \sqrt{4}$$

$$r = 0.197 \times 2 = 0.394$$

$$\begin{aligned} \text{Item 19 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.62 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}} \\ r &= \frac{2.06}{5.070} \sqrt{4} \\ r &= 0.406 \times 2 = 0.812 \end{aligned}$$

$$\begin{aligned} \text{Item 20 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.04 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}} \\ r &= \frac{1.48}{5.070} \sqrt{2.33} \\ r &= 0.291 \times 1.52 = 0.443 \end{aligned}$$

$$\begin{aligned} \text{Item 21 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.36 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}} \\ r &= \frac{1.8}{5.070} \sqrt{4} \\ r &= 0.355 \times 2 = 0.710 \end{aligned}$$

$$\begin{aligned} \text{Item 22 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.40 - 16.56}{5.070} \sqrt{\frac{0.7}{0.3}} \\ r &= \frac{1.84}{5.070} \sqrt{2.33} \\ r &= 0.362 \times 1.52 = 0.551 \end{aligned}$$

$$\begin{aligned} \text{Item 23 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.84 - 16.56}{5.070} \sqrt{\frac{0.4}{0.6}} \\ r &= \frac{2.28}{5.070} \sqrt{0.66} \\ r &= 0.449 \times 0.81 = 0.364 \end{aligned}$$

$$\begin{aligned} \text{Item 24 } r_{pbi} &= \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}} \\ r_{pbi} &= \frac{18.34 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}} \\ r &= \frac{1.78}{5.070} \sqrt{4} \\ r &= 0.351 \times 2 = 0.702 \end{aligned}$$

$$\text{Item 25 } r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$$

$$r_{pbi} = \frac{18.60 - 16.56}{5.070} \sqrt{\frac{0.8}{0.2}}$$

$$r = \frac{2.04}{5.070} \sqrt{4}$$

$$r = 0.402 \times 2 = 0.804$$

Appendix 12

Test Validity of Pre-Test

Number of Item	M_p	M_t	SD_t	p	q	$r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$	r_t on 5% significant
1	18.94	16.63	5.25	0.6	0.4	0.536	0.361
2	17.74	16.63	5.25	0.8	0.2	0.426	0.361
3	17.76	16.63	5.25	0.8	0.2	0.430	0.361
4	18.00	16.63	5.25	0.7	0.3	0.396	0.361
5	19.16	16.63	5.25	0.4	0.6	0.149	0.361
6	18.61	16.63	5.25	0.7	0.3	0.573	0.361
7	17.95	16.63	5.25	0.8	0.2	0.502	0.361
8	17.90	16.63	5.25	0.7	0.3	0.367	0.361
9	17.73	16.63	5.25	0.9	0.1	0.606	0.361
10	19.30	16.63	5.25	0.4	0.6	0.064	0.361
11	18.40	16.63	5.25	0.7	0.3	0.512	0.361
12	18.63	16.63	5.25	0.7	0.3	0.579	0.361
13	18.61	16.63	5.25	0.6	0.4	0.460	0.361
14	18.71	16.63	5.25	0.2	0.8	0.198	0.361
15	14.81	16.63	5.25	0.4	0.6	0.107	0.361
16	18.17	16.63	5.25	0.8	0.2	0.586	0.361
17	17.55	16.63	5.25	0.6	0.4	0.213	0.361
18	18.13	16.63	5.25	0.8	0.2	0.570	0.361
19	17.75	16.63	5.25	0.8	0.2	0.441	0.361
20	18.95	16.63	5.25	0.7	0.3	0.671	0.361
21	18.09	16.63	5.25	0.7	0.3	0.422	0.361
22	18.38	16.63	5.25	0.7	0.3	0.506	0.361
23	17.87	16.63	5.25	0.8	0.2	0.472	0.361
24	17.65	16.63	5.25	0.8	0.2	0.388	0.361
25	17.91	16.63	5.25	0.7	0.3	0.370	0.361

Appendix 13

Test Validity of Post-Test

Number of Item	M_p	M_t	SD_t	p	q	$r_{pbi} = \frac{M_p - M_t}{SD_t} \sqrt{\frac{p}{q}}$	r_t on 5% significant
1	18.47	16.56	5.07	0.6	0.4	0.459	0.361
2	13.42	16.56	5.07	0.4	0.6	-0.501	0.361
3	18.36	16.56	5.07	0.8	0.2	0.710	0.361
4	19.23	16.56	5.07	0.8	0.2	0.800	0.361
5	16.75	16.56	5.07	0.4	0.6	0.030	0.361
6	17.95	16.56	5.07	0.7	0.3	0.416	0.361
7	18.34	16.56	5.07	0.8	0.2	0.702	0.361
8	18.81	16.56	5.07	0.7	0.3	0.674	0.361
9	17.19	16.56	5.07	0.9	0.2	0.372	0.361
10	20.11	16.56	5.07	0.5	0.5	0.700	0.361
11	18.86	16.56	5.07	0.7	0.3	0.688	0.361
12	18.68	16.56	5.07	0.7	0.3	0.635	0.361
13	14.85	16.56	5.07	0.2	0.8	-0.168	0.361
14	19.62	16.56	5.07	0.6	0.4	0.735	0.361
15	14.81	16.56	5.07	0.4	0.6	-0.279	0.361
16	18	16.56	5.07	0.8	0.2	0.568	0.361
17	24.44	16.56	5.07	0.6	0.4	1.86	0.361
18	17.56	16.56	5.07	0.8	0.2	0.394	0.361
19	18.62	16.56	5.07	0.8	0.2	0.812	0.361
20	18.04	16.56	5.07	0.7	0.3	0.443	0.361
21	18.36	16.56	5.07	0.8	0.2	0.701	0.361
22	18.40	16.56	5.07	0.7	0.3	0.551	0.361
23	18.84	16.56	5.07	0.4	0.6	0.364	0.361
24	18.34	16.56	5.07	0.8	0.2	0.702	0.361
25	18.60	16.56	5.07	0.8	0.2	0.804	0.361

Appendix 14

Calculation Reliability Pre-test

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

$$N = 30$$

$$\Sigma X_t = 499$$

$$\Sigma X_t^2 = 9120$$

$$\Sigma pq = 4.86$$

$$\begin{aligned} s_{t^2} &= \Sigma X_t^2 - \left(\frac{\Sigma X_t}{N} \right)^2 \\ &= 9120 - \left(\frac{499}{30} \right)^2 = 9120 - \frac{249001}{30} = 9120 - 8300 = 820 \end{aligned}$$

$$s_{t^2} = \frac{\Sigma X_t^2}{N} = \frac{820}{30}$$

$$s_{t^2} = 27.33$$

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

$$R_{11} = \left(\frac{30}{30-1} \right) \left(\frac{27.33 - 4.86}{27.33} \right) = \left(\frac{30}{29} \right) \left(\frac{22.47}{27.33} \right)$$

$$= (1.03) (0.82)$$

$$= 0.84 \text{ (} r_{11} > 0.70 = \text{reliable)}$$

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

Appendix 15

Calculation Reliability Post-test

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

$$N = 30$$

$$\Sigma X_t = 497$$

$$\Sigma X_t^2 = 8997$$

$$\Sigma pq = 4.89$$

$$\begin{aligned} s_{t^2} &= \Sigma X_t^2 - \left(\frac{\Sigma X_t}{N} \right)^2 \\ &= 8997 - \left(\frac{497}{30} \right)^2 = 8997 - \frac{247009}{30} = 8997 - 8233 = 764 \end{aligned}$$

$$s_{t^2} = \frac{\Sigma X_t^2}{N} = \frac{764}{30}$$

$$s_{t^2} = 25.46$$

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

$$R_{11} = \left(\frac{30}{30-1} \right) \left(\frac{25.46 - 4.89}{25.46} \right) = \left(\frac{30}{29} \right) \left(\frac{20.57}{25.46} \right)$$

$$= (1.03) (0.807)$$

$$= 0.832 \text{ (} r_{11} > 0.70 = \text{reliable)}$$

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

Appendix 16

Score of Experimental Class and Control Class on Pre Test

1. Score of Experimental Class Pre Test

No	The Initial Name of Students (n)	Pre-Test
1	Alvian Ali Amron	45
2	Andreas Situmorang	55
3	Anggun Mutiara	55
4	Anisah Nasution	30
5	Astrid Ananta	60
6	Desma Zebua	60
7	Donni Iskandar	45
8	Dwi Endika Nasution	65
9	Astrid Ananta	30
10	Firdaus Zebua	65
11	Heni Rayanti	55
12	Idris Island	55
13	Irham Wahidin	40
14	Linda Mutiara	50
15	Mhd Riski	25
16	Muhammad Yusuf	30
17	Mutiara Sani	30
18	Nova Yohana Munthe	35
19	Novri Aldi	35
20	Nuryanti Gultom	40
21	Putri Rahma Dewi	75
22	Rahmad Efendi Harahap	25
23	Sri Indah Suryani Simanjuntak	40
24	Siti Zahra Lubis	80
25	Wulan Sari	50
26	Zumiah Safitri Harahap	25
TOTAL		1.220

2. Score of Control Class Pre Test

No	The Initial Name of Students (n)	Pre-Test
1	Adzan Zuhri	60
2	Ali Amsyah	35
3	Ali Ananda Putra Harahap	45
4	Aminah Lubis	35
5	Aryani Hasanah Hutabarat	30
6	Asdawiyah Siregar	60
7	Delvi Fitriani	30
8	Deni Kurniadi	50
9	Ermi Pakpahan	55
10	Fikri Kholish Siregar	75
11	Ilham Avandi Sibarani	50
12	Khairul Anwar	65
13	Lukman Hakim Sihombing	60
14	Miswar Caniago	65
15	Mustafa Kamal Mubarak	50
16	Mutiara Setyana Sihombing	55
17	Novita Sariana	55
18	Nur Aini	45
19	Nur Amanah	55
20	Reviana Malinka	40
21	Rizka Fatma Aulia Nainggolan	30
22	Rizqi Pinayungan Harahap	35
23	Suasa Nur	30
24	Soniya	75
25	Tasya Anggraini	35
26	Yudika Saputra Sitompul	50
Total		1.270

Appendix 17

Score of Experimental Class and Control Class on Post Test

1. Score of Experimental Class Post Test

No	The Initial Name of Students (n)	Pre-Test
1	Alvian Ali Amron	60
2	Andreas Situmorang	75
3	Anggun Mutiara	80
4	Anisah Nasution	80
5	Astrid Ananta	80
6	Desma Zebua	75
7	Donni Iskandar	55
8	Dwi Endika Nasution	75
9	Astrid Ananta	85
10	Firdaus Zebua	85
11	Heni Rayanti	80
12	Idris Island	80
13	Irham Wahidin	75
14	Linda Mutiara	75
15	Mhd Riski	85
16	Muhammad Yusuf	70
17	Mutiara Sani	90
18	Nova Yohana Munthe	90
19	Novri Aldi	85
20	Nuryanti Gultom	70
21	Putri Rahma Dewi	85
22	Rahmad Efendi Harahap	80
23	Sri Indah Suryani Simanjuntak	90
24	Siti Zahra Lubis	80
25	Wulan Sari	80
26	Zumiah Safitri Harahap	80
TOTAL		2020

2. Score of Control Class Post Test

No	The Initial Name of Students (n)	Post-Test
1	Adzan Zuhri	60
2	Ali Amsyah	65
3	Ali Ananda Putra Harahap	65
4	Aminah Lubis	70
5	Aryani Hasanah Hutabarat	75
6	Asdawiyah Siregar	80
7	Delvi Fitriani	65
8	Deni Kurniadi	65
9	Ermi Pakpahan	55
10	Fikri Kholish Siregar	50
11	Ilham Avandi Sibarani	70
12	Khairul Anwar	55
13	Lukman Hakim Sihombing	75
14	Miswar Caniago	45
15	Mustafa Kamal Mubarak	75
16	Mutiara Setyana Sihombing	70
17	Novita Sariana	70
18	Nur Aini	85
19	Nur Amanah	50
20	Reviana Malinka	70
21	Rizka Fatma Aulia Nainggolan	85
22	Rizqi Pinayungan Harahap	65
23	Suasa Nur	80
24	Soniya	70
25	Tasya Anggraini	70
26	Yudika Saputra Sitompul	50
Total		1735

Appendix 18

HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as experimental class sample by using small group discussion technique and variant of second class as control class sample by using conventional strategy is used homogeneity test by using formula:

$$s^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n - 1)}$$

Hypothesis:

$$H_0 : \sigma_1^2 = \sigma_2^2$$

$$H_1 : \sigma_1^2 \neq \sigma_2^2$$

A. Variant of the VIII-2 class is:

B. No	Xi	Xi ²
1	25	625
2	25	625
3	25	900
4	30	900
5	30	900
6	30	900
7	30	900
8	35	1225
9	35	1225
10	40	2025
11	45	2025
12	45	2025
13	50	2500
14	50	2500
15	50	3025
16	50	3025
17	55	3025
18	55	3025
19	55	3025
20	55	3025
21	60	3600

22	60	3600
23	65	3600
24	65	4225
25	75	4225
26	80	5625
	1220	62300

$$n = 26$$

$$\sum xi = 1220$$

$$n\sum xi^2 = 62300$$

So:

$$s^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)}$$

$$= \frac{26(62300) - (1220)^2}{26(25-1)}$$

$$= \frac{1619800 - 1488400}{26(25)}$$

$$= \frac{131400}{650}$$

$$= 202.15$$

C. Variant of the VIII-3 class is:

No	Xi	Xi ²
1	30	900
2	30	900
3	30	900
4	30	900
5	35	1225
6	35	1225
7	35	1225
8	35	1225
9	40	1600
10	45	2025
11	45	2025
12	50	2500

13	50	2500
14	50	2500
15	50	2500
16	55	3025
17	55	3025
18	55	3025
19	55	3025
20	60	3600
21	60	3600
22	60	3600
23	65	4225
24	65	4225
25	75	5625
26	75	5625
	1270	66750

$$n = 26$$

$$\sum xi = 1270$$

$$n\sum xi^2 = 66750$$

So:

$$\begin{aligned}
 s^2 &= \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)} \\
 &= \frac{26(66750) - (1270)^2}{26(26-1)} \\
 &= \frac{1735500 - 1612900}{26(25)} \\
 &= \frac{122600}{650} \\
 &= 188.61
 \end{aligned}$$

D. Variant of the VIII-4 class is:

No	Xi	Xi ²
1	20	400
2	20	400
3	25	625

4	25	625
5	25	625
6	30	900
7	35	1225
8	40	1600
9	40	1600
10	40	1600
11	40	1600
12	45	2025
13	45	2025
14	50	2500
15	50	2500
16	55	3025
17	55	3025
18	55	3025
19	60	3600
20	60	3600
21	65	4225
22	70	4900
23	75	5625
24	75	5625
	1100	56450

$$n = 26$$

$$\sum xi = 1100$$

$$n\sum xi^2 = 56450$$

So:

$$s^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n-1)}$$

$$= \frac{26(56450) - (1100)^2}{24(24-1)}$$

$$= \frac{1354800 - 1210000}{24(23)}$$

$$= \frac{144800}{552}$$

$$= 262.31$$

The formula was used to test hypothesis was:

1. VIII-2 and VIII-3

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Small Variant}}$$

So:

$$F = \frac{202.15}{188.61}$$

$$F = 1.07$$

After doing the calculation, researcher found that $F_{\text{count}} = 1.07$ with α 5% and dk 26 and 26 from the distribution list F, researcher found that $F_{\text{table}} = 1.93$, cause $F_{\text{count}} < F_{\text{table}}$ ($1.07 < 1.93$). So, there is no difference the variant between the VIII-2 class and VIII-3 class. It means that the variant is homogenous.

2. VIII-3 and VIII-4

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Small Variant}}$$

So:

$$F = \frac{262.31}{202.15}$$

$$F = 1.29$$

After doing the calculation, researcher found that $F_{\text{count}} = 1.29$ with α 5% and dk 26 and 26 from the distribution list F, researcher found that $F_{\text{table}} = 1.97$, cause $F_{\text{count}} < F_{\text{table}}$ ($1.29 < 1.97$). So, there is no difference the variant between the VIII-2 class and VIII-3 class. It means that the variant is homogenous.

Appendix 19

HOMOGENEITY TEST (POST-TEST)

Calculation of parameter to get variant of the first class as experimental class sample by using small group discussion and variant of the second class as control class sample by using conventional strategy is used homogeneity test by using formula:

$$s^2 = \frac{n\sum xi^2 - (\sum xi)^2}{n(n - 1)}$$

Hypothesis:

$$H_0 : \sigma_1^2 = \sigma_2^2$$

$$H_1 : \sigma_1^2 \neq \sigma_2^2$$

A. Variant of the VIII-2 class is:

No	Xi	Xi ²
1	50	2500
2	55	3025
3	60	3600
4	70	4900
5	70	4900
6	75	5625
7	75	5625
8	75	5625
9	75	5625
10	80	6400
11	80	6400
12	80	6400
13	80	6400
14	80	6400
15	80	6400
16	80	6400
17	80	6400
18	80	6400
19	85	7225
20	85	7225
21	85	7225

22	85	7225
23	85	7225
24	90	8100
25	90	8100
26	90	8100
	2020	159450

$$n = 26$$

$$\Sigma xi = 2020$$

$$n\Sigma xi^2 = 159450$$

So:

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

$$= \frac{26(159450) - (2020)^2}{26(26-1)}$$

$$= \frac{4145700 - 4080400}{26(25)}$$

$$= \frac{65300}{650}$$

$$= 100.46$$

B. Variant of the VIII-3 class is:

No	Xi	Xi ²
1	45	1600
2	50	2500
3	50	2500
4	50	2500
5	55	4225
6	55	4225
7	60	4225
8	65	4225
9	65	4225
10	65	4225
11	65	4225
12	65	4225

13	70	4225
14	70	4900
15	70	4900
16	70	4900
17	70	4900
18	70	4900
19	70	4900
20	75	5625
21	75	5625
22	75	5625
23	80	5625
24	80	6400
25	85	6400
26	85	6400
	1735	118725

$$n = 26$$

$$\Sigma xi = 1735$$

$$n\Sigma xi^2 = 118725$$

So:

$$\begin{aligned}
 s^2 &= \frac{n\Sigma xi^2 - (\Sigma xi)^2}{n(n-1)} \\
 &= \frac{26(118725) - (1735)^2}{26(26-1)} \\
 &= \frac{3086850 - 3010225}{26(25)} \\
 &= \frac{76625}{650} \\
 &= 117.88
 \end{aligned}$$

The formula was used to test hypothesis was:

$$F = \frac{\textit{The Biggest Variant}}{\textit{The Small Variant}}$$

So:

$$F = \frac{117.88}{100.46}$$

$$F = 1.02$$

After doing the calculation, researcher found that $F_{\text{count}} = 1.17$ with $\alpha 5\%$ and $dk = 26$ and 26 from the distribution list F, researcher found that $F_{\text{table}} = 1.93$, cause $F_{\text{count}} < F_{\text{table}}$ ($1.17 < 1.93$). So, there is no difference the variant between the VIII-2 class and VIII-3 class. It means that the variant is homogenous.

Appendix 20

RESULT OF NORMALITY TEST IN PRE TEST

RESULT OF THE NORMALITY TEST OF VIII-2 IN PRE-TEST

1. The score of VIII-2 class in pre-test from low score to high score

25	25	25	30	30	30	30	35	35	40	45	45	50
50	50	50	55	55	55	55	60	60	65	65	75	80

2. High = 80

Low = 25

Range = High – Low

= 80 – 25

= 55

3. Total of classes = $1 + 3.3 \log (n)$

= $1 + 3.3 \log (26)$

= $1 + 3.3 (1.41)$

= $1 + 4.65$

= 5.65

= 6

4. Length of classes = $\frac{range}{total\ of\ class} = \frac{55}{6} = 9.1 = 9$

5. Mean

Interval class	F	X	x	fx	x ²	Fx ²
25 – 33	7	29	+2	14	4	28
34 – 42	3	38	+1	3	1	3
43 – 51	6	47	0	0	0	0
52 – 60	6	56	-1	-6	1	6
61 – 69	2	65	-2	-4	4	8
70 – 78	1	74	-3	-3	9	9
79 – 87	1	83	-4	-4	16	16
<i>i</i> = 9	26	-	-	0	-	70

$$\begin{aligned}
 Mx &= M^1 + i \frac{\Sigma fx^1}{N} \\
 &= 47 + 9 \left(\frac{0}{26} \right) \\
 &= 47 + 9 (0) \\
 &= 47 + 0 \\
 &= 47
 \end{aligned}$$

$$\begin{aligned}
 SD_t &= i \sqrt{\frac{\Sigma fx^{1^2}}{n} - \left(\frac{\Sigma fx^1}{n} \right)^2} \\
 &= 9 \sqrt{\frac{70}{26} - \left(\frac{0}{26} \right)^2} \\
 &= 9 \sqrt{2.69 - (0)^2} \\
 &= 9 \sqrt{2.69 - 0} \\
 &= 9 \sqrt{2.69} \\
 &= 9 \times 1.64 = 14.76
 \end{aligned}$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of Area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$	
79 – 87	87.5	2.74	0.4969	0.01	0.26	1	2.84	
70 – 78	78.5	2.13	0.4834	0.04	1.04	1	-0.03	
61 – 69	69.5	1.52	0.4357	0.11	2.86	2	-0.30	
52 – 60	60.5	0.91	0.3186	0.20	5.2	6	0.15	
43 – 51	51.5	0.30	0.1179	0.26	6.76	6	-0.11	
34 – 42	42.5	-0.30	0.38209	0.20	5.2	3	-0.42	
25 - 33	33.5	-0.91	0.18141	0.11	2.86	7	1.44	
	24.5	-1.52	0.06426					
X^2								3.57

Based on the table above, the researcher found that $x^2_{\text{count}} = 3.57$ while $x^2_{\text{table}} = 12.592$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($3.57 < 12.592$) with degree of freedom (dk) $7 - 1 = 6$ and significant level $\alpha = 5\%$. So, distribution of VIII-3 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	25 – 33	7	7
2	34 – 42	3	10
3	43 – 51	6	16
4	52 – 60	6	22
5	61 – 69	2	24
6	70 – 78	1	25
7	79 – 87	1	26

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

$$Bb = 42.5$$

$$F = 3$$

$$fm = 6$$

$$i = 9$$

$$n = 26$$

$$1/2n = 13$$

So:

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

$$= 42.5 + 9 \left(\frac{13-3}{6} \right)$$

$$= 42.5 + 9 (1.66)$$

$$= 42.5 + 14.94$$

$$= 57.44$$

7. Modus

No	Interval	F	Fk
1	25 – 33	7	7
2	34 – 42	3	10
3	43 – 51	6	16
4	52 – 60	6	22
5	61 – 69	2	24
6	70 – 78	1	25
7	79 – 87	1	26

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

$$L = 42.5$$

$$d_1 = 3$$

$$d_2 = 0$$

$$i = 9$$

So,

$$\text{Mo} = 42.5 + \frac{3}{3+0} 9$$

$$= 42.5 + 1 (9)$$

$$= 42.5 + 9$$

$$= 51.5$$

RESULT OF NORMALITY TEST IN PRE TEST

RESULT OF THE NORMALITY TEST OF VIII-3 IN PRE-TEST

1. The score of VIII-3 class in pre-test from low score to high score

30	30	30	30	35	35	35	35	40	45	45	50	50
50	50	55	55	55	55	60	60	60	65	65	75	75

2. High = 75

Low = 30

Range = High – Low

$$= 75 - 30$$

$$= 45$$

3. Total of classes = $1 + 3.3 \log (n)$

$$= 1 + 3.3 \log (26)$$

$$= 1 + 3.3 (1.41)$$

$$= 1 + 4.65$$

$$= 5.65$$

$$= 6$$

4. Length of classes = $\frac{\text{range}}{\text{total of class}} = \frac{45}{6} = 7.5 = 8$

5. Mean

Interval class	F	X	x	fx	x ²	Fx ²
30 – 37	8	33	+2	16	4	32
38 – 45	3	41	+1	3	1	3
46 – 53	4	49	0	0	0	0
54 – 61	7	57	-1	-7	1	8
62 – 69	2	65	-2	-4	4	8
70 – 78	2	74	-3	-6	9	18
<i>i</i> = 8	26	-	-	2	-	69

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

$$= 49 + 8 \left(\frac{8}{26} \right)$$

$$= 49 + 8 (0.31)$$

$$= 49 + 2.48$$

$$= 51.48$$

$$= 51.5$$

$$SD_t = i \sqrt{\frac{\Sigma fx^2}{n} - \left(\frac{\Sigma fx^1}{n} \right)^2}$$

$$= 8 \sqrt{\frac{69}{26} - \left(\frac{8}{26} \right)^2}$$

$$= 8 \sqrt{2.65 - (0.31)^2}$$

$$= 8 \sqrt{2.65 - 0.10}$$

$$= 8 \sqrt{2.55}$$

$$= 8 \times 1.60$$

$$= 12.8$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of Area	f _h	f ₀	$\frac{(f_0 - f_h)}{f_h}$
70 – 78	78.5	2.10	0.4821	0.06	1.56	2	0.28
62 – 69	69.5	1.40	0.4192	0.13	3.38	2	-0.40
54 – 61	61.5	0.78	0.2823	0.22	5.73	8	0.39

46 – 53	53.5	0.15	0.0596	0.11	2.86	3	0.04
38 – 45	45.5	0.46	0.1772	0.03	0.78	3	2.84
30 – 37	37.5	-1.09	0.13786	0.09	2.34	8	2.41
	29.5	-1.71	0.04363				
X^2							5.56

Based on the table above, the researcher found that $x^2_{\text{count}} = 5.56$ while $x^2_{\text{table}} = 11.070$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($5.56 < 11.070$) with degree of freedom (dk) $6 - 1 = 5$ and significant level $\alpha = 5\%$. So, distribution of VIII-2 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	30 – 37	8	8
2	38 – 45	3	11
3	46 – 53	4	15
4	54 – 61	7	22
5	62 – 69	2	24
6	70 – 78	2	26

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

$$Bb = 45.5$$

$$F = 3$$

$$fm = 4$$

$$i = 8$$

$$n = 26$$

$$1/2n = 13$$

So:

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

$$= 45.5 + 8 \left(\frac{13-3}{4} \right)$$

$$= 45.5 + 8 (2.5)$$

$$= 45.5 + 20$$

$$= 65.5$$

7. Modus

No	Interval	F	Fk
1	30 – 37	8	8
2	38 – 45	3	11
3	46 – 53	4	15
4	54 – 61	7	22
5	62 – 69	2	24
6	70 – 78	2	26

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

$$L = 45.5$$

$$d_1 = 1$$

$$d_2 = -3$$

$$i = 8$$

So,

$$Mo = 45.5 + \frac{1}{-3+1} 8$$

$$= 45.5 + -0.5 (8)$$

$$= 45.5 + (- 4)$$

$$= 41.5$$

Appendix 21

RESULT OF NORMALITY TEST IN POST TEST

RESULT OF THE NORMALITY TEST OF VIII-2 IN POST-TEST

1. The score of VIII-2 class in pre-test from low score to high score

50	55	60	70	70	75	75	75	75	80	80	80	80
80	80	80	80	80	85	85	85	85	85	90	90	90

2. High = 90

Low = 65

Range = High – Low

= 90 – 50

= 40

3. Total of classes = $1 + 3.3 \log (n)$

= $1 + 3.3 \log (26)$

= $1 + 3.3 (1.41)$

= $1 + 4.65$

= 5.65

= 6

4. Length of classes = $\frac{\text{range}}{\text{total of class}} = \frac{40}{6} = 6.6 = 7$

5. Mean

Interval class	F	X	x'	Fx'	x' ²	Fx' ²
50 - 56	2	53	+4	8	16	32
57 - 63	1	60	+3	3	9	9
64 - 70	2	67	+2	4	4	8
71 - 77	4	74	+1	4	1	4
78 - 84	9	81	0	0	0	0
85 - 91	8	88	-1	-8	1	8
<i>i</i> = 7	26	-	-	11	-	61

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

$$= 81 + 7 \left(\frac{11}{26} \right)$$

$$= 81 + 7 (0.42)$$

$$= 81 + 2.94$$

$$= 83.94$$

$$= 83.9$$

$$SD_t = i \sqrt{\frac{\sum fx^{1^2}}{n} - \left(\frac{\sum fx^1}{n} \right)^2}$$

$$= 7 \sqrt{\frac{61}{26} - \left(\frac{11}{26} \right)^2}$$

$$= 7 \sqrt{2.43 - (0.42)^2}$$

$$= 7 \sqrt{2.43 - 0.17}$$

$$= 7 \sqrt{2.26}$$

$$= 7 \times 1.50$$

$$= 10.5$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of Area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$
85 – 91	91.5	0.72	0.2642	0.06	1.56	8	4.12
78 – 84	89.9	0.53	0.2019	-0.07	-1.82	9	-5.94
71 – 77	77.5	-0.60	0.27425	0.17	4.42	4	0.09
64 – 70	70.5	-1.27	0.10204	0.07	1.82	2	0.09
57 – 63	63.5	-1.94	0.02619	0.02	0.56	1	0.78
50 - 56	56.5	-2.60	0.00466	0.00	0	2	0
	49.5	-3.27	0.00054				
X^2							-0.89

Based on the table above, the researcher found that $x^2_{\text{count}} = -0.89$ while $x^2_{\text{table}} = 11.070$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($-0.89 < 11.070$) with degree of freedom (dk) $6 - 1 = 5$ and significant level $\alpha = 5\%$. So, distribution of VIII-2 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	50 - 56	2	2
2	57 – 63	1	3
3	64 – 70	2	5
4	71 – 77	4	9
5	78 – 84	9	18
6	85 – 91	8	26

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

$$Bb = 77.5$$

$$F = 9$$

$$fm = 9$$

$$i = 7$$

$$n = 26$$

$$1/2n = 13$$

So:

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

$$= 77.5 + 7 \left(\frac{13-9}{9} \right)$$

$$= 77.5 + 7 (0.44)$$

$$= 77.5 + 3.08$$

$$= 80.58$$

7. Modus

No	Interval	F	Fk
1	50 - 56	2	2
2	57 - 63	1	3
3	64 - 70	2	5
4	71 - 77	4	9
5	78 - 84	9	18
6	85 - 91	8	26

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

$$L = 77.5$$

$$d_1 = 6$$

$$d_2 = 0$$

$$i = 7$$

So,

$$\text{Mo} = 77.5 + \frac{6}{6+0} 7$$

$$= 77.5 + 1 (7)$$

$$= 77.5 + 7$$

$$= 84.5$$

RESULT OF NORMALITY TEST IN POST TEST

RESULT OF THE NORMALITY TEST OF VIII-3 IN PRE-TEST

1. The score of VIII-3 class in pre-test from low score to high score

45	50	50	50	55	55	60	65	65	65	65	65	70
70	70	70	70	70	70	75	75	75	80	80	85	85

2. High = 85

Low = 45

Range = High – Low

$$= 85 - 45$$

$$= 40$$

3. Total of classes = $1 + 3.3 \log (n)$

$$= 1 + 3.3 \log (26)$$

$$= 1 + 3.3 (1.41)$$

$$= 1 + 4.65$$

$$= 5.65$$

$$= 6$$

4. Length of classes = $\frac{\text{range}}{\text{total of class}} = \frac{40}{6} = 6.6 = 7$

5. Mean

Interval class	F	X	x'	Fx'	x' ²	Fx' ²
45 – 51	4	48	+3	12	9	36
52 – 58	2	55	+2	4	4	8
59 - 65	6	62	+1	6	1	6
66 – 72	7	69	0	0	0	0
73 – 79	3	76	-1	-3	1	3
80 - 86	4	83	-2	-8	4	16
<i>i</i> = 7	26	-	-	11	-	69

$$\begin{aligned}
 Mx &= M^1 + i \frac{\Sigma fx^1}{N} \\
 &= 69 + 7 \left(\frac{11}{26} \right) \\
 &= 69 + 7(0.42) \\
 &= 69 + 2.94 \\
 &= 71.94
 \end{aligned}$$

$$\begin{aligned}
 SD_t &= i \sqrt{\frac{\Sigma fx^{1^2}}{n} - \left(\frac{\Sigma fx^1}{n} \right)^2} \\
 &= 7 \sqrt{\frac{69}{26} - \left(\frac{11}{26} \right)^2} \\
 &= 7 \sqrt{2.65 - (0.24)^2} \\
 &= 7 \sqrt{2.65 - 0.05} \\
 &= 7 \sqrt{2.60} \\
 &= 7 \times 1.61 = 11.27
 \end{aligned}$$

Table of Normality Data Test with Chi Kuadrat Formula

Interval Score	Real Upper Limit	Z - Score	Limit of Large of the Area	Large of Area	f_h	f_0	$\frac{(f_0 - f_h)}{f_h}$	
80 – 86	86.5	1.29	0.4015	0.15	3.9	4	0.02	
73 – 79	79.5	0.67	0.2486	0.23	5.98	2	-0.66	
66 – 72	72.5	0.04	0.0160	-0.26	-6.76	6	1.88	
59 – 65	65.5	-0.57	0.28434	0.16	4.16	7	0.68	
52 – 58	58.5	-1.19	0.11702	0.08	2.08	3	0.44	
45 - 51	51.5	-1.81	0.03515	0.02	0.52	4	6.69	
	44.5	-2.43	0.00755					
X^2								9.05

Based on the table above, the researcher found that $x^2_{\text{count}} = 9.05$ while $x^2_{\text{table}} = 12.592$ cause $x^2_{\text{count}} < x^2_{\text{table}}$ ($9.05 < 12.592$) with degree of freedom (dk) $7 - 1 = 6$ and significant level $\alpha = 5\%$. So, distribution of VIII-3 class (pre-test) is normal.

6. Median

No	Interval	F	Fk
1	45 – 51	4	4
2	52 – 58	2	6
3	59 – 65	6	12
4	66 – 72	7	19
5	73 – 79	3	22
6	80 - 86	4	26

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

$$Bb = 65.5$$

$$F = 12$$

$$fm = 7$$

$$i = 7$$

$$n = 26$$

$$1/2n = 13$$

So:

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

$$= 65.5 + 7 \left(\frac{13 - 12}{7} \right)$$

$$= 65.5 + 7 (0.14)$$

$$= 65.5 + 0.98$$

$$= 66.48$$

7. Modus

No	Interval	F	Fk
1	45 – 51	4	4
2	52 – 58	2	6
3	59 – 65	6	12
4	66 – 72	7	19
5	73 – 79	3	22
6	80 - 86	4	26

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

$$L = 65.5$$

$$d_1 = 1$$

$$d_2 = 4$$

$$i = 7$$

So,

$$\begin{aligned} \text{Mo} &= 65.5 + \frac{1}{1+4} 7 \\ &= 65.5 + 0.2 (7) \\ &= 65.5 + 1.4 \\ &= 66.9 \end{aligned}$$

Appendix 22

T_{test} OF BOTH AVERAGES IN PRE-TEST

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

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

$$Tt = \frac{46.92 - 48.84}{\sqrt{\left(\frac{(26 - 1)202.15 + (26 - 1)188.61}{26 + 26 - 2}\right)\left(\frac{1}{26} + \frac{1}{26}\right)}}$$

$$Tt = \frac{-1.92}{\sqrt{\left(\frac{(25)202.15 + (25)188.61}{50}\right)(0.038 + 0.038)}}$$

$$Tt = \frac{-1.92}{\sqrt{\left(\frac{5053.75 + 4715.25}{50}\right)(0.076)}}$$

$$Tt = \frac{-1.92}{\sqrt{\left(\frac{9769}{50}\right)(0.076)}}$$

$$Tt = \frac{-1.92}{\sqrt{(195.38)(0.076)}}$$

$$Tt = \frac{-1.92}{\sqrt{14.84}}$$

$$Tt = \frac{-1.92}{3.85}$$

$$Tt = -0.49$$

Based on the researcher calculation result of the homogeneity test of the both averages, researcher found that $t_{\text{count}} = -0.049$ with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 26 + 26 - 2 = 50$, researcher found that $t_{\text{table}} = 1.29871$, because $t_{\text{count}} < t_{\text{table}}$ ($-0.49 < 1.29871$). So, H_a was accepted, it means that there is no difference in average between experimental class and control class.

Appendix 23

T_{test} OF BOTH AVERAGES IN POST-TEST

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

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

$$Tt = \frac{77.69 - 66.73}{\sqrt{\left(\frac{(26 - 1)100.46 + (26 - 1)117.88}{26 + 26 - 2}\right)\left(\frac{1}{26} + \frac{1}{26}\right)}}$$

$$Tt = \frac{10.96}{\sqrt{\left(\frac{(25)100.46 + (25)117.88}{50}\right)(0.038 + 0.038)}}$$

$$Tt = \frac{10.96}{\sqrt{\left(\frac{2511.5 + 2947}{50}\right)(0.076)}}$$

$$Tt = \frac{10.96}{\sqrt{\left(\frac{5458.5}{50}\right)(0.076)}}$$

$$Tt = \frac{10.96}{\sqrt{(109.17)(0.076)}}$$

$$Tt = \frac{10.96}{\sqrt{8.29}}$$

$$Tt = \frac{10.96}{2.87}$$

$$Tt = 3.81$$

Based on the researcher calculation result of the homogeneity test of the both averages, researcher found that $t_{\text{count}} = 3.81$ with opportunity $(1 - \alpha) = 1 - 5\% = 95\%$ and $dk = n_1 + n_2 - 2 = 26 + 26 - 2 = 50$, researcher found that $t_{\text{table}} = 1.29871$, because $t_{\text{count}} > t_{\text{table}}$ ($3.81 > 1.29871$). So, H_a was accepted, it means that there was difference in average between experimental class and control class. It can be concluded that there was the significant effect of small group discussion technique on students' reading comprehension at grade VIII of SMP Negeri 8 Padangsidempuan.

Appendix 24

Chi-Square Table

dk	Significant level					
	50%	30%	20%	10%	5%	1%
1	0,455	1,074	1,642	2,706	3,841	6,635
2	1,386	2,408	3,219	4,605	5,991	9,210
3	2,366	3,665	4,642	6,251	7,815	11,341
4	3,357	4,878	5,989	7,779	9,488	13,277
5	4,351	6,064	7,289	9,236	11,070	15,086
6	5,348	7,231	8,558	10,645	12,592	16,812
7	6,346	8,383	9,803	12,017	14,067	18,475
8	7,344	9,524	11,030	13,362	15,507	20,090
9	8,343	10,656	12,242	14,684	16,919	21,666
10	9,342	11,781	13,442	15,987	18,307	23,209
11	10,341	12,899	14,631	17,275	19,675	24,725
12	11,340	14,011	15,812	18,549	21,026	26,217
13	12,340	15,119	16,985	19,812	22,362	27,688
14	13,339	16,222	18,151	21,064	23,685	29,141
15	14,339	17,222	19,311	22,307	24,996	30,578
16	15,338	18,418	20,465	23,542	26,296	32,000
17	16,338	19,511	21,615	24,769	27,587	33,409
18	17,338	20,601	22,760	25,989	28,869	34,805
19	18,338	21,689	23,900	27,204	30,144	36,191
20	19,337	22,775	25,038	28,412	31,410	37,566
21	20,337	23,858	26,171	29,615	32,671	38,932
22	21,337	24,939	27,301	30,813	33,924	40,289
23	22,337	26,018	28,429	32,007	35,172	41,638
24	23,337	27,096	29,553	33,196	35,415	42,980
25	24,337	28,172	30,675	34,382	37,652	44,314
26	25,336	29,246	31,795	35,563	38,885	45,642
27	26,336	30,319	32,912	36,741	40,113	46,963
28	27,336	31,391	34,027	37,916	41,337	48,278
29	28,336	32,461	35,139	39,087	42,557	49,588
30	29,336	33,530	36,250	40,256	43,773	50,892

APPENDIX 25

Z-Table

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-										
3.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	5	5	4	4	4	4	4	4	3	3
-										
3.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	7	7	7	6	6	6	6	5	5	5
-										
3.	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	1	0	0	0	9	9	8	8	8	8
-										
3.	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
6	6	5	5	4	4	3	3	2	2	1
-										
3.	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
5	3	2	2	1	0	9	9	8	7	7
-										
3.	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
4	4	2	1	0	9	8	7	6	5	4
-										
3.	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003	0.0003	0.0003	0.0003
3	8	7	5	3	2	0	9	8	6	5
-										
3.	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005
2	9	6	4	2	0	8	6	4	2	0

-										
3.	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0007	0.0007	0.0007	0.0007
1	7	4	0	7	4	2	9	6	4	1
-										
3.	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010	0.0010
0	5	1	6	2	8	4	1	7	4	0
-										
2.	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014	0.0013
9	7	1	5	9	4	9	4	9	4	9
-										
2.	0.0025	0.0024	0.0024	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019	0.0019
8	6	8	0	3	6	9	2	5	9	3
-										
2.	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0028	0.0027	0.0026
7	7	6	6	7	7	8	9	0	2	4
-										
2.	0.0046	0.0045	0.0044	0.0042	0.0041	0.0040	0.0039	0.0037	0.0368	0.0035
6	6	3	0	7	5	2	1	9	0	7
-										
2.	0.0062	0.0060	0.0058	0.0057	0.0055	0.0053	0.0052	0.0050	0.0049	0.0048
5	1	4	7	0	4	9	3	8	4	0
-										
2.	0.0082	0.0079	0.0077	0.0075	0.0073	0.0071	0.0069	0.0067	0.0065	0.0063
4	0	8	6	5	4	4	5	6	7	9
-										
2.	0.0107	0.0104	0.0101	0.0099	0.0096	0.0093	0.0091	0.0088	0.0086	0.0084
2.	2	4	7	0	4	9	4	9	6	2

3										
-										
2.	0.0139	0.0135	0.0132	0.0128	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
2	0	5	1	7	5	2	1	0	0	1
-										
2.	0.0178	0.0174	0.0170	0.0165	0.0161	0.0157	0.0153	0.0150	0.0146	0.0142
1	6	3	0	9	8	8	9	0	3	6
-										
2.	0.0227	0.0222	0.0216	0.0211	0.0206	0.0201	0.0197	0.0192	0.0187	0.0183
0	5	2	9	8	8	8	0	3	6	1
-										
1.	0.0287	0.0280	0.0274	0.0268	0.0261	0.0255	0.0250	0.0244	0.0238	0.0233
9	2	7	3	0	9	9	0	2	5	0
-										
1.	0.0359	0.0351	0.0343	0.0336	0.0328	0.0321	0.0314	0.0307	0.0300	0.0293
8	3	5	8	2	8	6	4	4	5	8
-										
1.	0.0445	0.0436	0.0427	0.0418	0.0409	0.0400	0.0392	0.0383	0.0375	0.0367
7	7	3	2	2	3	6	0	6	4	3
-										
1.	0.0548	0.0537	0.0526	0.0515	0.0505	0.0494	0.0484	0.0474	0.0464	0.0455
6	0	0	2	5	0	7	6	6	8	1
-										
1.	0.0668	0.0655	0.0642	0.0630	0.0617	0.0605	0.0593	0.0582	0.0570	0.0559
5	1	2	6	1	8	7	8	1	5	2
-										
	0.0807	0.0792	0.0778	0.0763	0.0749	0.0735	0.0721	0.0707	0.0694	0.0681

1.4	6	7	0	6	3	3	5	8	4	1
- 1.3	0.0968 0	0.0951 0	0.0934 2	0.0917 6	0.0901 2	0.0885 1	0.0869 1	0.0853 4	0.0837 9	0.0822 6
- 1.2	0.1150 7	0.1131 4	0.1112 3	0.1093 5	0.1074 9	0.1056 5	0.1038 3	0.1020 4	0.1002 7	0.0985 3
- 1.1	0.1356 7	0.1335 0	0.1313 6	0.1292 4	0.1271 4	0.1250 7	0.1230 2	0.1210 0	0.1190 0	0.1170 2
- 1.0	0.1586 6	0.1562 5	0.1538 6	0.1515 1	0.1491 7	0.1468 6	0.1445 7	0.1423 1	0.1400 7	0.1378 6
- 0.9	0.1840 6	0.1814 1	0.1787 9	0.1761 9	0.1736 1	0.1710 6	0.1685 3	0.1660 2	0.1635 4	0.1610 9
- 0.8	0.2118 6	0.2089 7	0.2061 1	0.2032 7	0.2004 5	0.1976 6	0.1948 9	0.1921 5	0.1894 3	0.1867 3
- 0.7	0.2419 6	0.2388 5	0.2357 6	0.2327 0	0.2296 5	0.2266 3	0.2236 3	0.2206 5	0.2177 0	0.2147 6
- 0.6	0.2742 5	0.2709 3	0.2676 3	0.2643 5	0.2610 9	0.2578 5	0.2546 3	0.2514 3	0.2482 5	0.2451 0

- 0.5	0.3085 4	0.3050 3	0.3015 3	0.2980 6	0.2946 0	0.2911 6	0.2877 4	0.2843 4	0.2809 6	0.2776 0
- 0.4	0.3445 8	0.3409 0	0.3372 4	0.3336 0	0.3299 7	0.3263 6	0.3227 6	0.3191 8	0.3156 1	0.3120 7
- 0.3	0.3820 9	0.3782 8	0.3744 8	0.3707 0	0.3669 3	0.3631 7	0.3594 2	0.3556 9	0.3519 7	0.3482 7
- 0.2	0.4207 4	0.4168 3	0.4129 4	0.4090 5	0.4051 7	0.4012 9	0.3974 3	0.3935 8	0.3897 4	0.3859 1
- 0.1	0.4601 7	0.4562 0	0.4522 4	0.4482 8	0.4443 3	0.4403 8	0.4364 4	0.4325 1	0.4285 8	0.4246 5
- 0.0	0.5000 0	0.4960 1	0.4920 2	0.4880 3	0.4840 5	0.4800 6	0.4760 8	0.4721 0	0.4681 2	0.4641 4

Z-Table

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964

APPENDIX 26

Percentage Points of the t Distribution

Two Tail Test						
	0,50	0,20	0,10	0,05	0,02	0,01
One Tail Test						
dk	0,25	0,10	0,005	0,025	0,01	0,05
1	1,000	3,078	6,314	12,706	31,821	63,657
2	0,816	1,886	2,920	4,303	6,965	9,925
3	0,765	1,638	2,353	3,182	4,541	5,841
4	0,741	1,533	2,132	2,776	3,747	4,604
5	0,721	1,486	2,015	2,571	3,365	4,032
6	0,718	1,440	1,943	2,447	3,143	3,707
7	0,711	1,415	1,895	2,365	2,998	3,499
8	0,706	1,397	1,860	2,306	2,896	3,355
9	0,703	1,383	1,833	2,262	2,821	3,250
10	0,700	1,372	1,812	2,228	2,764	3,165
11	0,697	1,363	1,796	2,201	2,718	3,106
12	0,695	1,356	1,782	2,178	2,681	3,055
13	0,692	1,350	1,771	2,160	2,650	3,012
14	0,691	1,345	1,761	2,145	2,624	2,977
15	0,690	1,341	1,753	2,132	2,623	2,947
16	0,689	1,337	1,746	2,120	2,583	2,921
17	0,688	1,333	1,743	2,110	2,567	2,898
18	0,688	1,330	1,740	2,101	2,552	2,878
19	0,687	1,328	1,729	2,093	2,539	2,861
20	0,687	1,325	1,725	2,086	2,528	2,845
21	0,686	1,323	1,721	2,080	2,518	2,831
22	0,686	1,321	1,717	2,074	2,508	2,819
23	0,685	1,319	1,714	2,069	2,500	2,807
24	0,685	1,318	1,711	2,064	2,492	2,797
25	0,684	1,316	1,708	2,060	2,485	2,787
26	0,684	1,315	1,706	2,056	2,479	2,779
27	0,684	1,314	1,703	2,052	2,473	2,771
28	0,683	1,313	1,701	2,048	2,467	2,763
29	0,683	1,311	1,699	2,045	2,462	2,756
30	0,683	1,310	1,697	2,042	2,457	2,750
40	0,681	1,303	1,684	2,021	2,423	2,704
60	0,679	1,296	1,671	2,000	2,390	2,660
120	0,677	1,289	1,658	1,980	2,358	2,617
∞	0,674	1,282	1,645	1,960	2,326	2,576



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Hal : Izin Penelitian
Penyelesaian Skripsi.

30 Oktober 2017

Yth. Kepala SMP Negeri 8 Padangsidempuan
Kota Padangsidempuan

Dengan hormat, Dekan Fakultas Tarbiyah dan Ilmu Keguruan Institut Agama Islam Negeri Padangsidempuan menerangkan bahwa :

Nama : Ayu Sepriani Harahap
NIM : 13 340 0042
Fakultas/Jurusan : Tarbiyah dan Ilmu Keguruan/TBI
Alamat : Sihitang

adalah benar Mahasiswa IAIN Padangsidempuan yang sedang menyelesaikan Skripsi dengan Judul "The Effect of Small Group Discussion Technique on Students' Reading Comprehension at VIII Grade SMP Negeri 8 Padangsidempuan". Sehubungan dengan itu, kami mohon bantuan Bapak/Ibu untuk memberikan data dan informasi sesuai dengan maksud judul diatas.

Demikian disampaikan, atas kerja sama yang baik diucapkan terimakasih.

a.n. Dekan
Wakil Dekan Bidang Akademik



Dr. Leha Hilda, M.Si.
NIP. 197249902000032002



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Telah melaksanakan penelitian pada SMP Negeri 8 Padangsidempuan untuk menyelesaikan skripsi yang berjudul **"The Effect of Small Group Discussion Technique on Students' Reading Comprehension at VIII Grade SMP Negeri 8 Padangsidempuan"**.

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



Padangsidempuan, 23 Nopember 2017

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Kepada Yth:
Bapak/Ibu:
1. Eka Sustris Harida, M.Pd
2. Fitri Rayani Siregar, M.Hum

Di-
Padangsidempuan

Assalamu Alaikum Wr. Wb

Dengan hormat, Disampaikan kepada Bapak/Ibu bahwa berdasarkan hasil Sidang Tim Pengkaji Kelayakan Judul Skripsi, telah ditetapkan Judul Skripsi Mahasiswa tersebut dibawah ini sebagai berikut:

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Judul Skripsi : The Effect of Small Group Discussion Technique on Students' Reading Comprehension at Grade VIII SMP Negeri 8 Padangsidempuan

Seiring dengan hal tersebut, kami akan mengharapkan kesediaan Bapak/Ibu menjadi pembimbing I dan Pembimbing II penelitian penulisan skripsi yang dimaksud.

Demikian kami sampaikan, atas kesediaan dan kerjasama yang baik dari Bapak/Ibu, kami ucapkan terimakasih.

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