


THE EFFECT OF SMALL GROUP DISCUSSION STRATEGY ON STUDENTS' READING COMPREHENSION AT GRADE X SMK S PANCA DHARMA PADANGSIDIMPUAN

## A THESIS

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

Written By:

ZAMILA FITRIANI SIREGAR
Reg. Number: 1520300041

## ENGLISH EDUCATIONDEPARTMENT

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


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## LETTER OF AGREEMENT

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Assalamu 'alaikum wr.wb.

After reading, studying and giving advice for necessary revision on the thesis belongs to Zamila Fitriani Siregar, entitled "The Effect of Small Group Discussion Strategy on Students' Reading Comprehension at Grade X SMK S Panca Dharma Padangsidimpuan". We assumed that the thesis has been acceptable to complete the assignments and fulfill the requirements for graduate degree of Education (S.Pd) in English Education Department, Tarbiyah and Teacher Training Faculty in IAIN Padangsidimpuan.

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

Wassalamu' 'alaikum wr.wb.


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## DECLARATION LETTER OF WRITING OWN THESIS

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


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#### Abstract

This research concerned about the effect of Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan. There were some problems found: 1) The students got difficulties in comprehending the text, 2) The students still got difficulties in interpreting words and some important aspects such as: main idea, generic structure and specific language features, 3) The students were less active participating in the learning process.

The kind of this research was experimental research. The population of this research was all of the tenth grade of SMK S Panca Dharma Padangsidimpuan. The total of population were 112 students. Then, the sample of the research was 2 classes, XA as experimental class that consist of 26 students and XB as control class that consist of 26 students. The data was derived from pre-test and post-test. To analyze the data, the researcher used $t$-test formula.

Based on the calculation of t-test, the researcher found that $\mathrm{t}_{\text {count }}=4.18$ and $\mathrm{t}_{\text {table }}=1.67591$. It means $\mathrm{t}_{\text {count }}>\mathrm{t}_{\text {table }}(4.18>1.67591)$. So, the researcher could concluded that Ha was accepted and Ho was rejected. There was the significant effect of using Small Group Discussion Strategy on student's reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan.


Keywords:Reading Comprehension, Difficulties in Reading, Small Group Discussion Strategy.

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#### Abstract

ABSTRAK Penelitian ini mendeskripsikan tentang pengaruh strategi Small Group Discussion untuk memahami teks naratif pada siswa kelas X SMK Swasta Panca Dharma Padangsidimpuan. Ada beberapa masalah dalam penelitian ini: 1). Siswa masih kesulitan dalam memahami teks, 2). Siswa masih kesulitan dalam menginterpretasikan kata-kata dan beberapa aspek-aspek penting seperti: ide pokok, struktur umum, bentuk spesifik bahasa, 3).Siswa kurang aktif dalam berpastisipasi didalam proses pembelajaran.

Jenis penelitian ini adalah penelitian eksperimen. Populasi dalam penelitian ini adalah seluruh siswa kelas X SMK Swasta Panca Dharma Padangsidimpuan. Total populasi adalah 112 siswa. Lalu, sampel penelitian ini adalah dua kelas, X A sebagai kelas eksperimen yang terdiri dari 26 siswa dan X B sebagai kelas kontrol yang terdiri dari 26 siswa. Data dikumpulkan melalui pre-test dan post-test. Untuk menganalisa data, peneliti menggunakan rumus t-test.

Berdasarkan perhitungan $t$-test, peneliti menemukan bahwa $\mathrm{t}_{\text {hitung }}=4.18$ dan $\mathrm{t}_{\text {table }}=$ 1.67591. Itu artinya $\mathrm{t}_{\text {hitung }}>\mathrm{t}_{\text {table }}$ (4.18>1.67591). Jadi, peneliti dapat menyimpulkan bahwa Ha diterima dan Ho ditolak. Ada pengaruh yang signifikan dari penggunaan strategi Small Group Discussion untuk memahami teks naratif pada siswa kelas X SMK Swasta Panca Dharma Padangsidimpuan.


Kata kunci: Pemahaman Membaca, Kesulitan dalam Membaca, Strategi Diskusi
Kelompok Kecil.

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## CHAPTER I

## INTRODUCTION

## A. Background of the Problem

There are four skills in a language; listening, speaking, reading and writing. The first skill is listening, it is the process of a undirectional receiving of audible symbols or an interective process as the brain act on the impulse, bringing to bear a number of different cognitive and affective mechanism. The second, speaking is an interactive process of contracting meaning that involves producing and receiving and process information. Next, reading is a receptive skills that is a transactional between a reader and a writer. And the last, writing is one of four language skils that is the way, it is native speaker to organize a peace both of speaker and written information.

Reading comprehension is reading a text by thinking while reading and connecting what the reader reads to their ideas or background knowledge in order to understand or comprehend the text. Reading comprehension means making sense of what you read and connecting the ideas in the text to what you already know. ${ }^{1}$ It also means remembering what you have read. In conclusion reading comprehension is an activity by looking a text and connecting it to reader's background knowledge in getting understanding.

[^0]Reading is one of the receptive skills in language. Receptive skills are the way of people extract meaning from discourse they see or hear. ${ }^{2}$ Based on the standard competency and the basic competities recommended by the goverment, there are some types of the text which have to be though in senior high school, they are; descriptive, narrative, and recount text.

Reading is one of language skills that has to be mastered by English learners. It is also one of the most important skills for the students. ${ }^{3}$ Reading helps students know new words. Words is the important tool in teaching language no exception in reading. For example, if student reads book about abroad language like English. From that book, if the student find words which they do not know the meaning, students will try to search the meaning by dictionary.

Reading comprehension is the way to get information from the text. The process of comprehension is needed mental and physic.Reading comprehension is also a complex process which comprises the successful or unsuccessful use of many abilities. It is a complex activity that involves both perception and thought.

Based on the explanation above, it is clear that reading is very important fo all students or human life. However, reading skill is problematic at SMK Swasta Panca Dharma either in the espect of echievement or intelligence. Based on interview between the researcher and one of the

[^1]students in SMK Swasta Panca Dharma Padangsidimpuan said that it is difficult for students to read English, the students in understanding the material and do not know what meaning from the text, It's also difficult to finding main idea from the text. ${ }^{4}$ These problems come from students, and it also heppen to another student.

First, the students do not have many vocabulary. ${ }^{5}$ For example, the teacher teaches the text that is not familiar with the students in term of topic, content, and language. Consequently, the students are bored to read the materials and they also difficulties in know the meaning of the text. Because of this problem the teacher should select suitable text to be taught in the classroom that is familiar to them until they are easy in understanding the text.

Second, based on the researcher's informal interview with some Senior High School students, in reading English text the students difficulties in interpreting words and some important aspects such as: main idea, generic structure and specific language features. Consequently, the students are bored in reading the text. ${ }^{6}$

[^2]Third, many students less active in participating in the learning process. ${ }^{7}$ The students are noisy when following the discussion in learning, until the learning process not be affective and making the other students trouble and not focus it.

From the some problems above, researcher divided two kinds of problems. They were general problem and specific problem. The general problem was the students feel reading activity is so bored, the specific problem was they are lack vocabulary; the meaning of word by word in the text is not apropriate with the whole of sentence or paragraph; the teacher never applies the strategy in teaching reading. So, the problem needs solution to get the effect of students' learning and improve their grades were below standard. English teacher should create the better Strategy that can increase students' reading comprehension.

Based on the problems above, there is strategy that can be applied in teaching reading comprehension. According to Agus, by using Small Group Discussion Strategy in the classroom is effective and comfortable in learning reading comprehension. ${ }^{8}$ According to Barker, the using of small group discussion strategy in teaching, especially reading comprehension, will enable the students to get the meaning of passage by getting information from

[^3]hisfriends and teacher. The students can share the difficulties the reading text to each other and provide themselves with the knowledge.

Based on the explanation above, the researcher interest to do the research to solve the problem about students' reading comprehension with the title: The Effect of Small Group Discussion Strategy on Students' Reading Comprehension at Grade X SMK Swasta Panca Dharma Padangsidimpuan.

## B. Identification of the Problem

Based on the title and background of the problems, the researcher identifies many problems. There are some problems in reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan such as:

1. The students do not have many vocabulary
2. The students difficulties in interpreting words and some important aspects such as: main idea, generic structure and specific language features
3. The students less active in participating in the learning process

## C. Limitation of the Problem

Based on the above has, the researcher limited the problem on the research "it is about reading strategy to used Small Group Discussion Strategy" it is used to explore the students' reading comprehension on narrative text.

## D. Formulation of the Problem

Based on the background, some problems can be formulated as follows:

1. How is students' the reading comprehension on narrative text before learning using Small Group Discussion Strategy at grade X SMK Swasta Panca Dharma Padangsidimpuan?
2. How is students' the reading comprehension on narrative text after using learning Small Group Discussion Strategy at grade of X SMK Swasta Panca Dharma Padangsidimpuan?
3. Is there any significant effect of using small group discussion strategy on students' reading comprehension on narrative text at grade X SMK Swasta Panca Dharma Padangsidimpuan?

## E. Purposes of the Research

Based on the formulation of the problem, the researcher determiners the purposes of this research as follow:

1. To know students' reading comprehension on narrative text before using learning Small Group Discussion Strategy at grade X SMK Swasta Panca Dharma Padangsidimpuan.
2. To know students' reading comprehension on narrative text after using learning Small Group Discussion Strategy at grade of X SMK Swasta Panca Dharma Padangsidimpuan.
3. To know whether there is or there is no anysignificant effect of using Small Group Discussion Strategy on students' reading comprehension on narrative text at Grade X SMK Swasta Panca Dharma Padangsidimpuan.

## F. Significances of the Research

The significances of the research is expected to be useful for:

1. Headmaster, to encourage English teachers to the best in teaching process.
2. English Teachers, to help students in reading comprehension and enlarge the quality of teaching and learning, and also can enrich the knowledge of teacher.
3. Students, to encorage the students Reading Comprehension, and solve the students' problem increasing students' reading comprehension using Small Group Discussion Strategy.
4. Researcher, to be used as a reference for the future research.

## G. Definition of the Operational Variable

To avoid misunderstanding about researcher and readers in this research, researcher gave the defenition of operational variables as the follows:

1. Small Group Discussion Strategy ( Variable X)

Small Group Discussion Strategy is learning method that gives effect for students to study more active in teaching and learning processes, because they can interact with their friends.
2. Reading Comprehension (Variable Y)

Reading comprehension is reading a text by thinking while reading andconnecting what the reader reads to their ideas or background knowledge in orderto understand or comprehend the text.It means reading
comprehension is the connection between what you are reading and what you already know.

## H. Outline of the Thesis

The outline of the research is devided into five chapters. Each chapter consist of many sub chapters with detail as follows:

The First chapter, consist of introduction; background of the problem, Identification of the problem, Limitation of the problem, Formulation of the problem, Purposes of the research, Significances of the research, Definiton of the Operational variable, and outline of the thesis.

The second chapter, consist of theoretical description, review and review of related finding, conceptual framework and hypotesis.

The third chapter, consist of the metodology of the research: kind of research time and location of research, research design, population and sample, instrument of the researcher, validity of research, reliability of research, technique of data collection, and techniques of analysis data.

The fourth chapter, consist of result of the research that about Small Group Discussion Strategy on Students' Reading Comprehension at Grade X SMK Swasta Panca Dharma Padangsidimpuan.

The fifth chapter, consist of conclusion of the research and suggestion that got the effect of using Small Group Discussion Strategy on Students' Reading Comprehension.

## CHAPTER II

## THEORETICAL REVIEW

## A. The Theoretical Description

## 1. Reading Comprehension

## a. Definition of Reading Comprehension.

Reading comprehension is the ability of readers to understand a printed material or written text to getting meaning from the writer. It is a complex process which comprises the successful or unsuccessful use of many abilities. According to Jeffries, reading comprehension is the connection between what you are reading and what you already know. ${ }^{1}$ It means the readers is should be comprehended of what they read.

Reading is a process of readers combaining information from a text and their own background knowledge to build meaning. ${ }^{2}$ It means reading is an active and interactive activityto try to understand the content of reading text.The goal of reading is comprehension. ${ }^{3}$ Richards and Schmidt says, that reading is an activity of perceiving a written text in order to understand its contents. It means reading is a process of readers combaining information from a text and tries to understand the content of reading text.

[^4]
## b. Types of Reading

According to Nunan, It is important to bear in mind that reading is not an invariant skill, that there are different typesof reading skills, which correspond to the many different purposes we have for reading. According to Wood in Agus Rahmad, there are three types of motivation, they are as follows: ${ }^{4}$

1. Skimming

The eyes run quickly, are the text to discover what is about the main idea and the gist.Thus, skimming account when the reader's looks quickly at the content page of a book,or at the chapter heading, subheading. What the reader goes to through a particularpassage such as a news paper article merely to get the gist.
2. Scanning

The readers are to look out the particular item, he or she believes in the text. Thatscanning can be done to find name, date static, or fact in writing. The eyes start quicklyat the lives of writing.
3. Intensive Reading

It is also called study reading, this involves close study of the text.Based on explanationabove, the research concludes that there are three types of reading skill. Those areessential for the students to read story or passage easily.

Based on the types of reading, the researcher concludes that students have to follow the way to get comprehend the text.

## c. Purpose of Reading Comprehension

Reading comprehension is very important, comprehension is the process by which a person understanding the meaning of written or spoken language. According to Paul S. Anderson in widyamartaya, They are six purpose of reading:

[^5]1) Reading for detail and fact is reading to know what the subjec of the text
2) Reading for main idea is reading to get the problem statement.
3) Reading for sequence of organization is reading to know each part of the text.
4) Reading for interview is reading to know what is the writer mean from the text.
5) Reading for classifying is reading to find unusual thing.
6) Reading for comparing or contest is reading to compare the way life of the text with the way life of the reader. ${ }^{5}$

So, the researcher concludes the purpose of reading are to get or find the important information, finding specific information, and to evaluate reading. It has talked above that coprehension is ability to construct the language to take the information from the text.

## d. Assessment of Reading

Assessment is a mean to measure the progress of student ability and comprehension of the material. ${ }^{6}$ Routman states in David Nunan's book that in order for reading assessment teachers should consider the following: ${ }^{7}$

[^6]1. Be throughly familiar with developmental learning processes and curriculum.
2. Articulate a philosopy of assessment and evaluation.
3. Know abou and have experience collecting, recording, interpreting and analyting multiple sources of data.
4. Be flexible and willing to try out multiple assessment procedures.
5. Be commetted to understanding and implementing an approach to evaluation that informs students and direct instuction.

There are some indicator assessing student's reading, the indicators are students able to: ${ }^{8}$

1) Identify the main idea of the text.
2) Identify the specific information of the text.
3) Identify the detail information of the text.
4) Undersanding the vocabulary from the text.

There are many strategy that can be applied in testing reading comprehension, such as : multiple choice, cloze test, gap falling, information transfer, and so on. But in this research, the researcher chooses the multiple choice strategy. Multiple choice questions are a common device for testing students' text comprehension. They allow tester to control the range of possible answers to comprehend the questions and to some extent to control the students' thought processes

[^7]when responding. ${ }^{9}$ It means multiple choice questions are the question that has some options. In the options there is one the correct answer.

## 2. Small Group Discussion Strategy

a. Definition of Small Group Discussion Strategy

Small group discussion is one of the cooperative learning techniques in which students work in groups of three or four. According to Agus, by using Small Group Discussion Strategy in the classroom is effective and comfortable in learning reading comprehension. ${ }^{10}$ According to Barker, the using of small group discussion strategy in teaching, especially reading comprehension, will enable the students to get the meaning of passage by getting information from his friends and teacher. The students can share the difficulties the reading text to each other and provide themselves with the knowledge.

According to Bormann, small group discussion is something that composed three or more people working together to do a clearly specified activity or to reach a common goal. ${ }^{11}$ It means small group is a small member of human, work together through interaction whose interdependent relationship allows them to achieve a mutual goal.

[^8]According to Sagala, group discussion team is more effective if the group consists of 3-4 students, enable students gives their opinions or ideas to other students easily. ${ }^{12}$ It means group discussion iscommunication in which people talk to one another, sharing ideas and opinions.

According to Brown, small group provides opportunities for students' initiation, for face to face, give and take, for practice in negotiation of meaning for extended conversation exchanges. It means the students are more confidence to give opinion in each of their small group or opposite tendencies exist with regard to the number of people in a group. In group discussion, two to six students are working together for a single task or different parts of a larger task. ${ }^{13}$ It means group discussion is a method or strategy working together, organizing the class and doing communicative activities in classroom.

Based on some definitions above, the researcher can concluded that small group discussion is a group that contains of three to four or five students who joined together to interact or share about the teaching learning materials to achieve the goals of learning.

[^9]
## b. The Procedures of Using Small Group Discussion Strategy

It can be concluded that, small group discussion is one of the In teaching reading comprehension, the researcher used "Small Group Discussion Strategy" as a technique to help the students to comprehend thetext easily in group. According to Barker, the using of small group discussion strategy in teaching, especially reading comprehension, will enable the students to get the meaning of passage by getting information from his friends and teacher. The students can share the difficulties the reading text to each other and provide themselves with the knowledge.

According to Cristiani and Mintohari, the procedures of Small Group Discussion Strategy in teaching learning process are providing a topic, forming groups, providing materials, encouragingstudents to discuss in group, reporting group discussion result to the othergroup, explaining the materials that is learn, and answering questions which prepared: ${ }^{14}$
a. Teacher provide a title which will be discussed.

Teacher as a facilitator to prepare the material that will bediscussed andgiven to students before the class begins.
b. Teachers guide students in forming small group discussion.

Teacher help students choose the members of the group.
Students aredivided into several groups based on small group

[^10]discussion strategy rules with three or five students within a group. The teacher made the heterogeneous group includes the characteristics of intellegence, learning motivation, gender, or different ethnic backgrounds.
c. Teacher gives the material about narrative text and the students in each group predict it.

Teacher not only provide the material, but also help students to explainwhat they should do such as after getting the material each students in group have to prediction by looking at the title of the text first to know what the text about. After they got what the text about, they can discuss their information or knowledge that related with the text.
d. The students discuss a topic in their group and teacher move around theclass. After they finished the prediction activites, they begin to discuss it withtheir members of their group respectively. In this activity the studentshave opportunity to communicate each other in order to make the group be more active and comprehending the text.

Then, the teacher should observe the group discussion to make sure that all members participate intheir own group discussion. The teacher also give limitation time when the students should finish the discussion.

After they finished in dicussion,to make sure that their prediction is true or not they read the text together. Then, each group discusses about their discussion result to another group.

After getting the discussion between members of their own group and got the information of the text, the representative of each group discuss the result of their discussion to another group. The other members in the group may debate, clarify, give opinion, and criticize the result of discussion from another group.
e. The teacher explains about the material.Teacher help students to explain in details what they have learned and the teacher may give corrections if any.
f. Finally, each student tries to answer the questions that will be prepared in the text. After discussion between groups and teacher, each student tries to answer the questions individually based on the tasks thathave been provided by the teacher.

The researcher concludes, it is better for the teacher to arrange the class to form the group, give them instruction of how to start learning until the class ends. The teacher later gives reward (score) based on the results which have done by students.

## c. The Advantages and Disadvantages of a Small Group Discussion

## 1) Advantages

The Advantages of Small Group Discussion According to Brookfield in Agus Rahmad, the advantages of Small Group Discussion Strategy are: ${ }^{15}$
a) To engage students in exploring a range of perspectives and discovering new perspectives.
b) To increase intellectual ability and to encourage active listening.
c) To increase students' interest and involvement with a topic.
d) To show students that their opinions and experiences are valued.
e) To help develop a sense of group identity.
f) To encourage democratic habits such as valuing participation, respect for others' opinions and tolerance of diversity.
g) The Students have oppportunity to responsibility apropriate their ability.
h) The Students can improve their ability to lead and be lead by.
i) Group is excellent way to discuss and work together.

## 2) Disadvantages

Disadvantages of Small Group Discussion
a). It is need a lot of time.
b). Some students in the group may do all the talking.
c). It involves less teacher involvement than other techniques.
${ }^{15}$ Agus Rahmat, p. 27.
d). The discussion can easily get off track.

The researcher concluded that small group discussion strategy has someadvantages and disadvantages which teacher should know and considerthe advantages and disadvantages of the strategy before they use orapply the strategy to their teaching and learning reading process.

## 3. Conventional Strategy

In generally, there are two kinds of teaching strategy that can be used to reading comprehension. They are conventional strategy which refers to strategy that is usually used by teacher in which the teacher asks and the students answer, and the alternative strategy develop by expert that are considered better than the conventional strategy since they emphasize on student's active participation. ${ }^{16}$ So, with the convensional strategy the students can increase their learning motivation.

Conventional Strategy is the strategy or way that used by the teacher to teach the text the students. Conventional Strategy is the strategy that used by the teacher based on mutual agrement in a school. It use the traditional way in teaching learning process.

The procedures that used by the teachers at SMK Swasta Panca Dharma Padangsidimpuan in teaching learning process are: ${ }^{17}$

[^11]a. Explain the subject matter
b. Ask the students to read the text one by one
c. Ask the students to translate it
d. Identify the difficult words
e. Answering the question

## 4. Description of Narative Text

## 1. Definition of Narative Text

Narrative is kind of text which tells about events, or accuracies, which can make the reader feels that it is real. A narrative tells about something that happened in the past. ${ }^{18}$ Narrative is any written English text in which the writer wants to amuse, entertain people, and to deal with actual or vicarious experience in different way. A narrative is a piece of writing that tells a story. The story can be imaginary or based on a real incident. ${ }^{19}$ A narrative tells about something that happened in the past.

Narrative is a text which contents about a story like a story of citizen (folktale), the story of animals (fable), legend, etc. That a narrative text contains story by presenting the sequence of events and actors which are characterized as heroes or cowards. It can be concluded that narrative text is a spoken or written text to communicate a message, which is used to interpret its meaning in the story.

[^12]
## b. Social Function of Narrative Text

Narrative is kind of genre which has social function to amuse, entertain and to deal with actual or vicarious experience in different ways. Narrative deals with problematic events which lead to a crisis or a turning point of some kinds, which in turn finds a resolution. c. Types of narrative text

There are many types of narrative text, including: ${ }^{20}$

1) Romance, typically tells of two lovers who overcome difficulties to end up together.
2) Science function, use a setting involving science and technology.
3) Humor, the aims to make the audience laugh as part of retelling story.
4) Diary - novels, the text presented like diary entries.
5) Adventure, typically tells of exciting dangerous journey of experience.

## d. Generic Structure of Narrative Text

Reading is an active and interactive activityto reproduce the word mentally and vocally and tries to understand the content of reading text. Narrative text consists of generic structure that can be provided as follow:

1) Orientation

It introduces the participants of the story and informs the settings. Normally, the writer explain when the story happened and where the events is taken place.
2) Complication

[^13]It tells the rising crises of the events. It is the climax of the narrative. In the middle of the story, generally, the narrator shows the complication.Complication makes the story more interesting because the main character is prevented to reach his or her wanted. In this part, narrator brings up the issues occurred in the story. Complications are the description of real life and tell the readers that every issues or problems can be solved.

## 3) Resolution

After spelling many issues in the climax of the narrative, the narrator then tells to the readers about the resolution of issues or the problems. Resolution is the crisis which is resolved, for better or worse. A satisfying narration will give the readers the resolution of the problem or complication. Generally, the resolution is placed in the end of narration, but sometimes the narrator will place other issues or complication after he or she presents the resolution of the problem. It is used to make the story does not come to the end. In short, resolution is the ending of the story. 4) Re-orientation

Re-orientation is optional of generic structure of narrative. So reorientation is sometimes there andsometimes it isn't there in narrative text. ${ }^{21}$ It is usuallyin ending of story or closure of events.

[^14]
## e. Language Features of Narrative Text

The language features of narrative text, they are:

1) Using nouns and pronouns to identify people, animal or things involved. For example: king, princess, he, she, etc.
2) Specific participant is special characteristics object. For example: Cinderella, Aladdin, etc.
3) Using adjectives are useful to shape noun phrase.

For example: beautiful white skinned lady, etc.
4) Using time connective and conjunctions to sequence the events. For example: then, when, suddenly, etc.
5) Using adverbs and adverbial phrases to indicate place and time.

For example: here, there, at home, etc. ${ }^{22}$
So, the researcher concludes that, students have to know the generic structure and language features of narrative text in order they can understand and identify the meaning of narrative text.

## f. Example of Narrative Text

## Malin Kundang

Once upon a time, that a poor family consisting of a mother and her son named Malin Kundang. Because his father had left him, the mother must work hard to be able to raise a family. Malin was the son of the wise but a little bit naughty. When he is about to go up, Malin feel sorry for his mother who always used to work hard live it. Then Malin ask

[^15]permission for going about looking for a job in the big city. "Mom, I want to go to town. I want to work to be able to help mom here. "Malin said. "Don't leave the mother alone, son. Mom just got you here. "said the mother refused. "Let me go, mom. I pity seeing mom continued to work until now." said Malin. "Well son, but remember don't forget mom and this village when you have success there," Said the teary mother of ari's eyes.

The next day, Malin went to the big city with the use of a ship. After several years of hard work, he succeeded in the city of rantauannya.Malin is now a wealthy man who even had a number of merchant ships. And Malin had married a beautiful woman there. News about Malin who became a wealthy man to the one to his mother. The mother was very happy to hear it. He is always waiting at the beach every day, hoping the older si wayangnya eyes back and raised his mother drajat But Malin never came. One day Malin's wife asked about mother Malin and want to meet with him. Malin was not able to resist the desires of the wife of a very loved it. That the journey towards preparing Malin village using a private ship pretty great. Eventually the matter came to his village Malin, along with his wife and his men.

Hear the arrival of Malin, the mother felt very excited. she even ran to the beach to immediately see her son."What is it my son Malin, ya? This your mother, you remember "askedher mother."Malin Kundang, my son, why are you going so long without sending the news?" He said while hugging Malin Kundang.His wife, who was surprised at the fact that the old lady, smelly, filthy who embraced her husband, said: "So, the smell of old lady, this is the mother you filthy, Malin"Because of the shame, Malin Kundang soon let go of his mother's arms and pushed him to fall. "I didn't know you poor old woman," said Malin."The Foundation of the old lady had no idea myself, any just claim to be my mother." Advanced Malin snapped.

Hear the words of his children like that, the mother feels sad and angry. He did not suspect, and the very loved it turns into a childof sin. "Oh my God, if he is a true son of mine, I beg give doom him and Fox was the one she so rocks." the prayer of his mother's wrath. Shortly thereafter the wind and Thunder rumbles hit and destroy ships Malin Kundang. After that, the body of Malin Kundang is stiff and then into the rock with coral.

## B. Review of Related Findings

The are some Related findings to this research. It is talks about using small group discussion strategy. The first is Faradina Primarini Noorhaya. ${ }^{23}$ The concluding of her research, the is the significant effect of 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 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 $2.032\left(t_{0}\right.$ is higher than $\left.t_{t}, 10.270>2.032\right)$.

The second is Fibrina Hanung Suswanti. ${ }^{24}$ She concuded that, It is proven from students score in post-test both experimental class that the mean score of students in experimental class was 66.79 and the mean score of post-test was 76.25 .It canbe seen from the result of test. The average scoreincreases from 60.50 in pre-test, 64 in post-test. She conluded that his result of the data indicated that therewas a significant

[^16]difference between students' post-test in experimentalclass and controlled class.

The Third, Salsabila Rizki has done a research. She has concluded the result of hes thesis was the statistical using analysis of T-test with the significant level 0.05 and the $\mathrm{df}=35$ shows the value of t table is 1.69 while tcount is 14.538 andif they are compared the differences of both of values is 12.838. Because the tcount $=14.538$ is bigger than table $=1.69$, this means there is significant difference score of the students' reading comprehension before and after being taught by using Small Group Discussion technique.

The fourth, Nurhadi Ningsih has done a research. She has concluded the result of her research shows that there is a significant difference of students' reading comprehension ability between both experimental and control classes. It can be seen from the meanscore in the post-test of experimental class and control class. The mean score of experimental classis higher than the mean score of control class (70.85 > 51.28). It is proved by the result ofhypothesis testing through Independent samples T-Test. The significant value is lower than $\alpha 0.05(0.000<0.05)$ which means that the result of this research are considered to have significant difference. It means that small group discussion method is significantly effective for the students' reading comprehension ability inteaching learning process at SMP Negeri 3 Bantul.

The last is Agus Rahmat, he conluded that his result of the data indicated that therewas a significant difference between students' post-test in experimentalclass and controlled class. The mean score of post-test (77.3) in experimental class was greater than the mean score of post-test (71.9) in controlled class and from t-test, the researcher found that the value of $t$-test(3.176) was greater than $t$-table (2.000) at the level of significances. ${ }^{25}$ Based on the explanation above, the researcher concuded that small group discussion strategy is more effective to improve students result in learning compared with using small group discussion. In this case, the researcher did a research by using small group discussion strategy on students' reading comprehension.

## C. Conceptual Framework

Small group is a small member of human, work together through interaction whose interdependent relationship allows them to achieve a mutual goal. Group discussion team is more effective if the group consists of 3-4 students, enable students gives their opinions or ideas to other students easily. Discussion iscommunication in which people talkto one another, sharing ideas andopinions.

Reading is important skill for students. The succesful of reading comprehension depend on my fators. One of them is how the teacher thaught reading to students. Reading comprehension is mental process in

[^17]which the readers try to understand the meaning in text by interpreting what they have read in order to find the new idea that given by writers.

So, teachers must used a strategy when they are teaching reading comprehension, so that their students become understanding the book that they read. In teaching reading comprehension, the teacher can apply small group discussion strategy in the fasility of the school which can make the studens can increase their skills espesially reading.

The conceptual framework underlying the research is given in the following diagram :



Based on diagram above, small group discussion strategy is a learning strategy that use by teacher to teach narrative text. Small group discussion strategy is suitable with narrative text because this method will helps effect of small group discussion strategy on students reading comprehension at grade X of SMK Swasta Panca Dharma Padangsidimpuan

So, the researcher chose two claseses, one class as experimental clas by using small group discussion strategy and other class as control class by using conventional strategy. Moreover, researcher has compare the studentsreading result in experimental class and control class in pretest and post-test.

## D. Hypothesis

The hypothesis of this research can beformulated as follows:
a. Null hypothesis $\left(\mathrm{H}_{0}\right)$ : There is no significant effect of Small Group Discussion Strategy on students' reading comprehension.
b. Alternative hypothesis $\left(\mathrm{H}_{1}\right)$ : There is significant effect of Small Group Discussion Strategy on students' reading comprehension.

## CHAPTER III

## METHOD OF RESEARCH

## A. Research Design

This research was quantitative research which used experimental type. Experimental research was kind of research which has aim to know cause effect relationship between one variable or more to other variables. The experimental class was the class that thaugh with using small group discussion strategy as a treatment and the control class was the class that taugh with a treatment by conventional teaching . The researcher was desaign as the following:

## Table 1

Table of design instrument

| No | Group | Test | Treatment | Test |
| :--- | :--- | :--- | :--- | :--- |
| 1 | Control Class | Pre-test | Teaching by <br> using <br> conventional <br> strategy <br> Teaching bost-test <br> using small <br> group Post-test <br> discussion <br> strategy |  |

In this reseacher, researcher gave the pre-test before gave the treatment and gave the post-test after give the treatment to experiment class and control class. The researcher was design as the following:

Table 2
Experimental and control class

| No | Class | Pre-test | Treatment | Post-test |
| :--- | :--- | :---: | :---: | :---: |
| 1. | Experimental class | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| 2. | Control class | $\checkmark$ | - | $\checkmark$ |

## B. Location and Schedule of Research

The place of the research in SMKSwasta Panca Dharma Padangsidimpuan, that is located Silandit Padangsidimpuan. The research start from March 2019 until November 2019.

## C. Population and Sample

## 1. Population

In this research, The populationis whole of the students which are used as the subject of research in the research. The researcher takes an experiment in the grade X SMK Swasta Panca Dharma Padangsidimpuan. Thus, the population amounted to 112 students.

## Table 3

For more details can be table below :

| No | Class | Number of Students |
| :--- | :--- | :--- |
| 1 | X A | 26 |
| 2 | X B | 26 |
| 3 | X C | 30 |
| 4 | X D | 30 |
|  | Total | 112 |

## 2. Sample

In this research, the researcher used random sampling. The basic characteristic of simple random sampling was that all members of the population have an equal and independent change of being included in the random sample. Therefore, the researcher took two classes that have similar characteristics. The smilar characteristis means the students' score having some competence and taught by the same teacher. The researcher chooses two classes. The researcher choose XA consist of 26 students and XB consists of 26 students. Therefore, total samples were 52 students.

Table 4
Sample of the research

| Experimental Class | Control Class |
| :--- | :--- |
| $\mathrm{XA}=26$ | $\mathrm{XB}=26$ |

## D. Instrument of Research

The test that used in this research was multiple choice test that consist of four option a,b,c,d. The researcher has made 30 questions of pre test and 30 questions of post test to validate. As the result, there are 22 valid questions for pre and post test. Then the researcher took 20 question for each pre-test and post-test. This test was given to experimental class and control class.

## E. The Validity and Reliability Instrument

1. Validity

Validity is the most important quality of a test. It is degree wich a test measures what it is supposed to measure consequently pemitts appropriate interpretation of the score. ${ }^{1}$ So, it can be concluded validity is measure for determining the good result.

Students' reading comprehension was known by their expressed thinking, telling idea and sense. So, indicators reading comprehension were:

Table 5
The Indicator Reading Comprehension on pre test

| No | Indicators Pre-Test | Items | Number of <br> items | Score | Total <br> score |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Able to identify <br> purpose of the text | 3 | $1,9,20$ | 4 | 20 |
| 2 | Able to identify <br> structure of the text | 3 | $2,3,5$ | 4 | 20 |
| 3 | Able to identify <br> specific information | 12 | $6,7,8,11,1213$ <br> $, 14,15,16,17$, <br> 18,19 | 4 | 20 |
| 4 | Able to identify <br> Understand <br> vocabulary | 2 | 4,10, | 4 | 20 |
| Total |  | 20 |  |  | 100 |

[^18]Table 6
The Indicator Reading Comprehension on post test

| No | Indicators Pre-Test | Items | Number of items | Score | Total <br> score |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Able to identify <br> purpose of the text | 3 | $5,11,16$ | 4 | 20 |
| 2 | Able to identify <br> structure of the text | 2 | 19,20 | 4 | 20 |
| 3 | Able to identify <br> specific information of <br> the text | 10 | $1,2,3,4,6,8,9$ <br> $10,14,15,17$ | 4 | 20 |
| 4 | Able to identify <br> understand vocabulary | 4 | $7,12,13,18$ | 4 | 20 |
| Total |  | 20 |  |  | 100 |

Based on indicators of reading above, the students should able to identify the purpose of the text, the specific information of the text, detail information of the text and able to get the meaning of the text in reading (it can beword or sentence). These indicators had been an escort for a teacher in assessing students' reading comprehension. So do researcher who want to research in a reading class.

In this research, the researcher used item validity to get the validity of instrumentation. Item validity was a part of the test as a totality to measure the test by items, before validity the test consists of 60 questions of multiple choice questions that divided into two groups. They are 30 for pre-test and 30 for post-test.

To know the validity of each question have been refer to list $r$ product moment with $r_{\mathrm{t}}$ in $5 \%$ significant: 0,388 and $1 \%$ significant: 0,496.

So, if $r_{\text {count }}>t_{\text {table }}$ the test is classified valid. To get the validity of the test, researcher uses the formula of product moment:

$$
\mathrm{R}_{\mathrm{pbi}}=\frac{M p-M t}{S D t} \sqrt{\frac{p}{q}}
$$

Where:
$\mathrm{r}_{\mathrm{pbi}}$ : coefisien item validity
$\mathrm{M}_{\mathrm{p}}$ : mean score of the total score
$\mathrm{SD}_{\mathrm{t}}$ :Standard Derivation 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

Another requirement is also important for a researcher is reliability. A research instrument is said to have a high reliabiity value, if the tests are made to have consistent results in a measure that would be measured. The researcher uses formula K-R 20:

$$
\mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{S t 2-\Sigma \quad p q}{S t 2}\right)
$$

Where:
$\mathrm{R}_{11}$ : Reliability of the instrument
$\mathrm{N} \quad$ : Total of question
$\mathrm{St}^{2} \quad:$ Varians total
P : Proporsi Subject who is right answer (1)
Q : Proporsi Subject who is wrong answer (0

The reliability of the characteristic of a good test refers to consistency of the measurement. In this research, test reliability is do using formulation KR-20. The test is reliable if $\mathrm{r}_{\text {count }}>\mathrm{r}_{\text {table }}$.

## 1. Procedures of the Research

To get the data from the students, the researcher collected by giving test. They are pre-test, treatment and post-test.
a. Pre test

1. The researcher prepared the test 20 item
2. The researcher distributed the paper of the students of experimental class and control class.
3. The researcher explained what students to do.
4. The researcher giving time
5. The students answered the quention.
6. Collected their paper to researcher.
7. The researcher checked the answer of students and found the mean scores of control and experimental class.
b. Treatment

After pre-test administrate, a treatment was given to students. Control group is though Convensional Strategy, and
experimental group is through by applying Small Group Discussion Strategy.
c. Post-test

After giving treatment, the Researcher conducts a post-test which the same test with the pre-test, and has conducted in the previous of the research. This post-test is the final test in the research, especially measuring the treatment, whether is significant or not. After conducting the post-test, the researcher analyzed the data. And researcher found out the effect of Small Group Discussion Strategy in experimental class. The researcher has some procedures. They were:

1. The researcher prepared the test 20 item
2. The researcher distributed the paper of the students of experimental class and control class.
3. The researcher explained what students to do.
4. The researcher giving time
5. The students answered the quention.
6. Collected their paper to researcher.
7. The researcher checked the answer of students and found the mean scores of control and experimental class.

## 2. Techniques of Data Analysis

To analyze the data, the researcher use " t " test. " T " test is one of statistic examine the difference two variable. The analysis of data is done to find out the ability of the two groups that have divided in to experimental and control class. After, the researcher got the data; it has been enter in frequency table with the formula as follows:

The formula of test " t " is as follows:

$$
T t=\frac{M_{1}-M_{2}}{\sqrt{\left(\frac{\Sigma X_{1}+\Sigma X_{2}^{2}}{n_{1}+n_{2}-2}\right)\left(\frac{1}{n_{1}}+\frac{1}{n_{2}}\right)}}
$$

T : The value which the statistical significance
$M_{1}$ : The average score of the experiment class
$\mathrm{M}_{2}$ : The average score of the control class
$\mathrm{X}_{1}{ }^{2}$ : Deviation of the experiment class
$\mathrm{X}_{2}{ }^{2}$ : Deviation of the control class
$\mathrm{n}_{1} \quad$ : Number of experiment class
$\mathrm{n}_{2} \quad$ :Number of control class
if $t$-test is higher than $\mathrm{t}_{\text {table }}$, the researcher can conclude that ha is accepted and ho is rejected, it means that there is significant effect of using Small Group Discussion Strategy on students' reading comprehension at grade $X$ SMK Swasta Panca Dharma Padangsidipuan. If $\mathrm{t}_{\text {test }}$ is lower that $\mathrm{t}_{\text {table }}$ the researcher can conclude that ha is rejected and ho is accepted. It means that there is no
significant effect without using Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan. Before the researcher analysis the data using statistical parametric, the data should be tested to know homogeneity variance and the normal distribution data. The homegeny varience is analyzed by using F formula. ${ }^{2}$

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

The normal distribution data is analyzed by using Chi Square Formula.

$$
\mathrm{x}^{2}=\sum\left(\frac{f o-f h}{f h}\right)
$$

Where:

$$
\begin{aligned}
& x^{2}=\text { value of chi-square } \\
& f_{o}=\text { observed frequency } \\
& f_{h}=\text { expected frequency }
\end{aligned}
$$

[^19]
## CHAPTER IV

## DATA ANALYSIS

As mentioned in earlier chapter, in order to find out the effect of using Small Group Discussion on students' reading comprehension, the researcher had calculated the data using pre-test and post-test. The researcher used the formulation of T-test to test the hypothesis. Next, the researcher described the data as follow:

## A. The Description of Data

1. The Description of Data before Using Small Group Discussion

## Strategy

## a. Score of Pre-test Experimental Class

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

Table 7
The Score of Experimental Class in Pre-test

| Total | 1310 |
| :---: | :---: |
| Highest score | 70 |
| Lowest score | 30 |
| Mean | 49.79 |
| Median | 55.75 |
| Modus | 58.9 |
| Range | 40 |
| Interval | 7 |
| Standard deviation | 11.69 |
| Variants | 289.84 |

Based on the above table the total score of experimental class in pre-test was 1310 , mean was 49.79 , standard deviation was 11.69 , variants was 289.84 , median was 55.75 , range was 40 , modus was 58.9, interval was 7 . The researcher got the highest score was 70 and the lowest score was 30 . It can be seen on appendix 16 and 17 .

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

Table 8
Frequency Distribution of Students' Score

| No | Interval | Frequency | Percentages |
| :---: | :---: | :---: | :---: |
| 1 | $30-36$ | 6 | $23.07 \%$ |
| 2 | $37-36$ | 4 | $15.38 \%$ |
| 3 | $47-53$ | 3 | $11.53 \%$ |
| 4 | $54-60$ | 9 | $34.61 \%$ |
| 5 | $61-67$ | 0 | $0 \%$ |
| 6 | $68-74$ | 4 | $15.38 \%$ |
| $i=7$ |  |  | 26 |

From the table above, the students' score in class interval between 30 - 36 was 6 students (23.07\%), class interval between $37-$ 36 was 4 students ( $15.38 \%$ ), class interval between $47-53$ was 3 students (11.53\%), class interval between $54-60$ was 9 students ( $34.61 \%$ ), class interval between $61-67$ was 0 students ( $0 \%$ ), and the last class interval between 68-74 was 4 students ( $15.38 \%$ ) .

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


From the histogram of students' score of experimental class in pre test shown that the lowest interval $30-36$ was 6 students and highest interval $68-74$ was only 4 students. Histogram also shown that the highest frequency in interval $54-60$ was 9 students.

## b. Score of Pre-Test Control Class

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

Table 9
The Score of Control Class in Pre-test

| Total | 1050 |
| :---: | :---: |
| Highest score | 65 |
| Lowest score | 15 |
| Mean | 45.22 |
| Median | 41.5 |
| Modus | 43.9 |
| Range | 50 |
| Interval | 8 |
| Standard deviation | 11.04 |
| Variants | 194.84 |

Based on the above table the total score of control class in pretest was 1050 mean was 45.22 , standard deviation was 11.04 , variants was 194.84 , median was 41.5 , range was 50 , modus was 43.9 , interval was 8 . The researcher got the highest score was 65 and the lowest score was 15 . It can be seen on appendix 16 and 17.

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

Table 10
Frequency Distribution of Students' Score

| No | Interval | Frequency | Percentages |
| :---: | :---: | :---: | :---: |
| 1 | $15-23$ | 4 | $15.38 \%$ |
| 2 | $24-31$ | 4 | $15.38 \%$ |
| 3 | $32-39$ | 3 | $11.53 \%$ |
| 4 | $40-47$ | 8 | $30.76 \%$ |
| 5 | $48-55$ | 2 | $7.69 \%$ |
| 6 | $56-63$ | 3 | $11.53 \%$ |
| 7 | $64-71$ | 2 | $7.69 \%$ |
|  | $i=8$ | 26 | $100 \%$ |

From the table above, the students' score in class interval between 15 - 23 was 4 students ( $15.38 \%$ ), class interval between 24 31 was 4 students ( $15.38 \%$ ), class interval between $32-39$ was 3 students ( $11.53 \%$ ), class interval between $40-47$ was 8 students (30.76\%), class interval between 48 - 55 was 2 students ( $7.69 \%$ ),class interval between $56-63$ was 3 students (11.53\%), and the last class interval between $64-71$ was 2 students ( $7.69 \%$ ).

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


From the histogram of students' score of control class in pre test shown that the lowest interval $15-23$ was 4 students and highest interval $64-71$ was only 2 students. Histogram also shown that the highest frequency in interval $40-47$ was 8 students.

## 2. The Description of Data After Using Small Group Discussion

## Strategy

## a. Score of Post-Test Experimental Class

In post-test of experimental class, the researcher calculated the result that had been gotten by the students in answering the question (test) after the researcher did the treatment by using Small Group Discussion Strategy. 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 | 2120 |
| :---: | :---: |
| Highest score | 95 |
| Lowest score | 65 |
| Mean | 90.4 |
| Median | 85.3 |
| Modus | 87.5 |
| Range | 30 |
| Interval | 5 |
| Standard deviation | 7.45 |
| Variants | -454.84 |

Based on the above table the total score of experiment class in post-test was 2120 , mean was 90.4 standard deviation was 7.45 , variants was -454.84 , median was 85.3 , range was 30 , modus was 87.5, interval was 5. The researcher got the highest score was 95 and the lowest score was 65 . It can be seen on appendix 20 and 21.

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

Table 12
Frequency Distribution of Students' Score

| No | Interval | Frequency | Percentages |
| :---: | :---: | :---: | :---: |
| 1 | $65-69$ | 3 | $11.53 \%$ |
| 2 | $70-74$ | 3 | $11.53 \%$ |
| 3 | $75-79$ | 3 | $11.53 \%$ |
| 4 | $80-89$ | 6 | $23.07 \%$ |
| 5 | $90-94$ | 4 | $15.38 \%$ |
| 6 | $95-99$ | 4 | $15.38 \%$ |
| $i=5$ |  |  |  |

From the table above, the students' score in class interval between 65 - 69 was 3 students ( $11.53 \%$ ), class interval between 70 74 was 3 students ( $11.53 \%$ ), class interval between $75-79$ was 3 students ( $11.53 \%$ ), class interval between $80-89$ was 6 students (23.07\%),class interval between $90-94$ was 4 students ( $15.38 \%$ ), and the last class interval between $95-99$ was 4 students ( $15.38 \%$ ).

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


From the histogram of students' score of experimental class in post test shown that the lowest interval $65-69$ was 3 students and highest interval 95 - 99 was only 4 students. Histogram also shown that the highest frequency in interval $85-89$ was 6 students.

## b. Score of Post-Test Control Class

In post-test of control class, the researcher calculated the result that had been gotten by the students in answering the question (test) after the researcher taught the reading comprehension by using 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 | 1685 |
| :--- | :---: |
| Highest score | 80 |
| Lowest score | 40 |
| Mean | 76.5 |
| Median | 67.5 |
| Modus | 69.8 |
| Range | 40 |
| Interval | 7 |
| Standard deviation | 8.82 |
| Variants | 123.84 |

Based on the above table the total score of control class in posttest was 1685 , mean was 76.5 , standard deviation was 8.82 , variants was 123.84 , median was 67.8 , range was 40 , modus was 69.8 , interval was 7. The researcher got the highest score was 80 and the lowest score was 40 . It can be seen on appendix 20 and 21 . Then, the computed of the frequency distribution of the students' score of control class can be applied into table frequency distribution as follow:

Table 14
Frequency Distribution of Students' Score

| No | Interval | Frequency | Percentages |
| :---: | :---: | :---: | :---: |
| 1 | $40-46$ | 3 | $11.53 \%$ |
| 2 | $47-53$ | 3 | $11.53 \%$ |
| 3 | $54-60$ | 3 | $11.53 \%$ |
| 4 | $61-66$ | 3 | $11.53 \%$ |
| 5 | $67-73$ | 10 | $38.46 \%$ |
| 6 | $74-80$ | 4 | $15.38 \%$ |
| $i=7$ |  | 26 | $100 \%$ |

From the table above, the students' score in class interval between 40 - 46 was 3 students ( $11.53 \%$ ), class interval between 47 53 was 3 students ( $11.53 \%$ ), class interval between $54-60$ was 3 students (11.53\%), class interval between 61 - 66was 3 students (11.53\%), class interval between $67-73$ was 10 students ( $38.46 \%$ ), and the last class interval between $74-80$ was 4 students ( $15.36 \%$ )

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


From the histogram of students' score of control class in post test shown that the lowest interval $40-46$ was 3 students and highest interval $74-80$ was 4 students. Histogram also shown that the highest frequency in interval $67-73$ was 10 students.

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

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

## Class

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

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

| Description | Pre-Test | Post-Test |
| :---: | :---: | :---: |
| Total | 1310 | 2120 |
| Highest score | 75 | 95 |
| Lowest score | 35 | 65 |
| Mean | 49.79 | 90.4 |
| Median | 55.75 | 85.3 |
| Modus | 58.9 | 87.5 |
| Range | 40 | 30 |
| Interval | 7 | 5 |
| Standard deviation | 11.69 | 7.45 |
| Variants | 289.84 | 454.84 |

Based on students' answers in experimental of pre-test and posttest, the researcher has calculated the students' score and most of students both of classes were low in reading. Experimental class consisted of 26 students (XA). The lowest score in pre-test was 35 whereas the highest score was 70 and the lowest score in post-test was 65 whereas the highest score was 95 .

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


From the histogram above, Pre-test frequency of students' score from 35 up to 45 was $7 ; 46$ up to 56 was 10; 57 up to 67 was 2 ; and 68 up to 78 was 7 students. In post-test, the frequency of students' score from 57 up to 67 was 2 ; 68 up to 78 was 3 ; and 79 up to 89 was 13 ; and 90 up to 100 was 8 students. The histogram shows that the highest interval (90-100) was 8 students and the lowest interval (35-45) was 7 students. So the students' scores of experimental class in posttest was higher than pre-test.

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

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

Table 16
The Comparison Data of Control Class
in Pre-test and Post-Test

| Description | Pre-Test | Post-Test |
| :---: | :---: | :---: |
| Total | 1050 | 1685 |
| Highest score | 65 | 80 |
| Lowest score | 15 | 40 |
| Mean | 45.22 | 76.5 |
| Median | 41.5 | 67.5 |
| Modus | 43.9 | 69.8 |
| Range | 50 | 40 |
| Interval | 8 | 7 |
| Standard deviation | 11.04 | 8.82 |
| Variants | 194.84 | 123.84 |

Based on students' answers in control class of pre-test and posttest has calculated the students' score and most of students both of classes were low in reading. Control class consisted of 26 students (XB). The lowest score in pre-test was 15 whereas the highest score was 65 and the lowest score in post-test was 40 whereas the highest score was 80 .

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


From the histogram above, Post-test frequency of students' score from 15 up to 28 was $8 ; 29$ up to 42 was $3 ; 43$ up to 56 was 11 ; and 57 up to 70 was 6 students. In post-test, the frequency of students' score from 29 up to 42 was $3 ; 43$ up to 56 was $3 ; 57$ up to 70 was 8 and 71 up to 84 was 12 students.
c. Comparison between Experimental and Control Class in Post-Test

Based on students' answers in post-test in experimental and control class, the researcher has calculated the students' score and most of students both of classes increased. Experimental classconsisted of 26 students (XA), the lowest score was 65 whereas the highest score was 95 . Then, most of students got raising score and their score increased very significant. Control classconsisted of 26 students (XB), the lowest score was 40 whereas the highest score was 80 . Students' score increased too but not significant.

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


From histogram above, in experimental class, the frequency of students' score from 60 up to 69 was $2 ; 70$ up to 79 was $3 ; 80$ up to 89 was 13 and 90 up to 99 was 8 students. In control class, the frequency of students' score from 40 up to 49 was $5 ; 50$ up to 59 was $5 ; 60$ up to 69 was $4 ; 70$ up to 79 was 7 ; and 80 up to 89 was 5 students.

## B. Technique of Data Analysis

1. Requirement Test
a. Normality and Homogeneity Pre-Test
1) Normality of Experimental Class and Control Class in PreTest

Table 17
Normality and Homogeneity in Pre-Test

| Class | Normality <br> Test |  | Homogeneity <br> Test |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | $\mathrm{x}_{\text {count }}$ | $\mathrm{x}_{\text {table }}$ | $\mathrm{f}_{\text {count }}$ | $\mathrm{f}_{\text {table }}$ |
| Experiment Class | -5.25 | 11.070 | $1.48<2.71$ |  |
| Control Class | -9.42 | 11.070 |  |  |

Based on the above table researcher calculation, the score of experimental class $\mathrm{Lo}=-5.25<\mathrm{Lt}=11.070$ with $\mathrm{n}=26$ and control class $\mathrm{Lo}=-9.42<\mathrm{Lt}=11.070$ with $\mathrm{n}=26$, and real level $\alpha 0.05$. Cause Lo< Lt in the both class. $\mathrm{So}, \mathrm{H}_{\mathrm{a}}$ was accepted. It means that experimental class and control class were distributed normal. It can be seen in appendix 16 and 17.
2) Homogeneity of Experimental Class and Control class in PreTest

The coefficient of $\mathrm{F}_{\text {count }}=1.48$ was compared with $\mathrm{F}_{\text {table }}$. Where $\mathrm{F}_{\text {table }}$ was determined at real $\alpha 0.05$, and the different numerator $\mathrm{dk}=\mathrm{n}-1=26-1=25$ and denominator $\mathrm{dk} \mathrm{n}-1=26-1=$ 25. So, by using the list of critical value at F distribution is got $\mathrm{F}_{0.05}$ $=2.71$. It showed that $\mathrm{F}_{\text {count }} 1.48<\mathrm{F}_{\text {table }} 2.71$.

So, the researcher concluded that the variant from the data of the Students' Reading comprehension at SMK Swasta Panca Dharma Padangsidimpuan by experimental class and control class was homogenous. The calculation can be seen on the appendix 17.

## b. Normality and Homogeneity Post-Test

1) Normality of Experimental Class and Control class in PostTest

Table 18
Normality and Homogeneity in Post-Test

| Class | Normality <br> Test |  | Homogeneity <br> Test |  |
| :--- | :---: | :---: | :---: | :---: |
|  | $\mathrm{x}_{\text {count }}$ | $\mathrm{x}_{\text {table }}$ | $\mathrm{f}_{\text {count }}$ | $\mathrm{f}_{\text {table }}$ |
| ExperimentalClass | -6.58 | 11.070 | $-0.27<2.71$ |  |
| Control Class | -10.05 | 11.070 |  |  |

Based on the table above researcher calculation, the score of experiment class Lo $=-6.58<\mathrm{Lt}=11.070$ with $\mathrm{n}=26$ and control class $\mathrm{Lo}=-10.05<\mathrm{Lt}=11.070$ with $\mathrm{n}=26$, and real level $\alpha 0.05$. Cause $\mathrm{Lo}<\mathrm{Lt}$ in the both class. $\mathrm{So}, \mathrm{H}_{\mathrm{a}}$ was accepted. It means that experimental class and Control class were distributed normal. It can be seen in appendix 20 and 21.

## 2) Homogeneity of Experimental Class and Control class in Posttest

The coefficient of $\mathrm{F}_{\text {count }}=-0.27$ was compared with $\mathrm{F}_{\text {table }}$. Where $\mathrm{F}_{\text {table }}$ was determined at real $\alpha 0.05$, and the different numerator $\mathrm{dk}=\mathrm{n}-1=26-1=25$ and denominator $\mathrm{dk} \mathrm{n}-1=26-1=$
25. So, by using the list of critical value at F distribution is got $\mathrm{F}_{0.05}=2.71$. It showed that $\mathrm{F}_{\text {count }}-0.27<\mathrm{F}_{\text {table }} 2.66$. So, the researcher concluded that the variant from the data of the Students' Reading comprehension at SMK Swasta Panca Dharma Padangsidimpuan by experimental class and Control class was homogenous. The calculation can be seen on the appendix 21.

## 2. Hypothesis Test

After calculating the data of post-test, researcher found that posttest result of experimental class and control class is normal and homogenous. Based on the result, researcher used parametric test by using T-test to analyze the hypothesis. Hypothesis alternative $\left(\mathrm{H}_{\mathrm{a}}\right)$ of the research was "There isthe significant effect of using Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan". Hyphotesis null (Ho) of the research was "There is no significant effect of using Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan". Ha is accepted if $\mathrm{t}_{\text {count }}$ is higher than $\mathrm{t}_{\text {table }}$. In this case, the researcher found that $\mathrm{t}_{\text {count }}>\mathrm{t}_{\text {table }}$ which means that there was the significant effect of using Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan. The calculation can be seen on the appendix 23.

Table 19
Result of T-test from the Both Averages

| Pre-test |  |  | Post-test |  |  |  |
| :--- | :--- | :--- | :--- | :---: | :---: | :---: |
| $\mathrm{t}_{\text {count }}$ | $\mathrm{t}_{\text {table }}$ | $\mathrm{t}_{\text {count }}$ | $\mathrm{t}_{\text {table }}$ |  |  |  |
| 45.7 | 1.67591 | 4.18 | 1.67591 |  |  |  |

$\mathrm{H}_{\mathrm{a}}: \mu_{1}>\mu_{2}$
Where:
$\mathrm{H}_{\mathrm{a}}: \mu_{1}>\mu_{2}$ "There was the significant effectof using Small Group Discussion Strategy on students' reading comprehension at grade X students of SMK Swasta Panca Dharma Padangsidimpuan".

Based on researcher calculation, researcher found that $t_{\text {count }} 4.18$ while $\mathrm{t}_{\text {table }} 1.67591$ with opportunity $(1-\alpha)=1-5 \%=95 \%$ anddk $=n_{1}+n_{2}-2$ $=26+26-2=50$. Cause $\mathrm{t}_{\text {count }}>\mathrm{t}_{\text {table }}(4.18>1.67591)$, it means that hypothesis $H_{a}$ was accepted and $H_{0}$ was rejected. So, there was the significant effect of using Small Group Discussion Strategy on students' reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan".

## C. Discussion

The researcher discussed the result of this research. Based on the result of the data analysis the researcher get the researcher found that the mean score of students' reading comprehension before using Small Group Discussion was 45.7 and after using Small Group Discussion was 4.18. It means there was the effect of using Small Group Discussion Strategy on reading comprehension.

The result above supported the previous research by some researchers. The first is Faradina Primarini Noorhaya Sari from English Education Study Program Language and Art Education Departement Teach Training and Education Faculty Lampung University. ${ }^{1}$ The concluding of her research, the is the significant effect of 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 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 $2.032\left(t_{0}\right.$ is higher than $t_{t}, 10.270>2.032$ ). From this research can conclude that there is significant effect of small group discussion in reading class on readimg comprehansion.

The second is Fibrina Hanung Suswanti from Education Deparment of Teacher Training and Education Faculty Sebelas Maret University Surakarta. ${ }^{2}$ She concuded 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 that the mean score of students in experimental class was 66.79 and the mean score of post-test was 76.25 .It can be seen from the result oftest. The

[^20]average scoreincreases from 60.50 in pre-test, 64 in post-test. She conluded that his result of the data indicated that therewas a significant difference between students' post-test in experimentalclass and controlled class.

The Third, Salsabila Rizki has done a research. ${ }^{3}$ She has concluded the result of hes thesis was the statistical using analysis of T-test with the significant level 0.05 and the $\mathrm{df}=35$ shows the value of table is 1.69 while tcount is 14.538 andif they are compared the differences of both of values is 12.838. Because the tcount $=14.538$ is bigger than table $=1.69$, the alternative hypothesis (Ha) that states there is significant difference score of thestudents' reading comprehension by using Small Group Discussion technique is accepted, while the null hypothesis $(\mathrm{Ho})$ that states there is no significant difference score of the students' reading comprehension by using Small Group Discussion technique is rejected. This means there is significant difference score of the students' reading comprehension before and after being taught by using Small Group Discussion technique.

[^21]The fourth, Nurhadi Ningsih has done a research. ${ }^{4}$ She has concluded the result of her research shows that there is a significant difference of students' readingcomprehension ability between both experimental and control classes. It can be seen from the meanscore in the post-test of experimental class and control class. The mean score of experimental classis higher than the mean score of control class (70.85 > 51.28). It is proved by the result ofhypothesis testing through Independent samples T-Test. The significant value is lower than $\alpha 0.05(0.000<0.05)$ which means that the result of this research are considered to have significantdifference. It means that small groupdiscussion method is significantly effective for the students' reading comprehension ability inteaching learning process at SMP Negeri 3 Bantul.

The last is Agus Rahmat, he conluded that his result of the data indicated that there was a significant difference between students' post-test in experimentalclass and controlled class. ${ }^{5}$ The mean score of post-test (77.3) inexperimental class was greater than the mean score of post-test (71.9) incontrolled class and from t-test, the researcher found that the value of $t$-test(3.176) was greater than $t$-table (2.000) at the level of significances. It means that this is a significant difference between the result of the students'pre-test and post-test.

[^22]Based on the explanation above, the researcher concluded Based on the result, the researcher has got the effect of Small on students' reading comprehension. Fibrina Hanung Suswanti, found that $\mathrm{t}_{\text {count }}=(70.85$ > 51.28). The researcher also found that $\mathrm{t}_{\text {count }}$ is higher than $\mathrm{t}_{\text {table }}$ where $\mathrm{t}_{\text {count }}$ was 4.18 and $\mathrm{t}_{\text {table }}$ was $1.67591(8.03>1.67591)$. It can be seen among the researcher that the using of Small Group Discussion Strategy gave the effect to students' reading comprehension especially at grade X Students of SMK S Panca Dharma Padangsidimpuan.

It means the theory has been proved where the students able to comprehend the reading material. Therefore, Small Group Discussion Strategy has given the significant effect to the research that has been done by the researcher or the other researcher who mentioned in related finding and Small Group Discussion Strategy is highly effective to help the English teacher in teaching learning process especially in reading comprehension.

## D. Threats of the Research

The researcher found the threats of the research as follows:

1. The students were not serious in answering the pre-test and post-test. Some of them still were cheating. It made the answer of the test was not pure because they did not do it by themselves.
2. The students were noisy while the learning process. They were not concentrating in following the learning process. Some of them talked to their friends and some of them did something outside the teacher's rule.
3. The learning implementation is not effective because of the limited time.

## CHAPTER V

## CONCLUSION AND SUGGESTION

## A. Conclusion

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

1. Students'reading comprehension at grade X SMK Swasta Panca Dharma Padangsidimpuan before using Small Group Discussion Strategy were still low. It can be seen from the students' mean score of pre-test was 49.79 in experimental class and 45.22 in control class. And after using Small Group Discussion Strategy had higher score. It can be seen from the students' mean score of pre-test was 90.4 in experimental class and 76.5 in control class.
2. The students' ability of the grade $X$ students at SMK Swasta Panca Dharma Padangdimpuan on Student's Reading Comprehension by using Small Group Discussion Strategy had higher score. It can be seen from the students' score of post-test, the higher score of post-test using Small Group Discussion Strategy (experiment class) is 95 and the lowest score is 65 .
3. It is found that $t_{\text {count }}$ was higher than $t_{\text {table }} 4.18>1.67591$ which means $H_{a}$ was accepted. Hence, there was significant effect of using Small Group Discussion Strategy on Student Reading Comprehension at grade X students SMK Swasta Panca Dharma Padangsidimpuan.

## B. Suggestion

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

1. For the English teacher, it is hoped to use Small Group Discussion Strategy in teaching reading narrative text. This research and others proved that Small Group Discussion Strategy was effective to be applied in classroom.
2. For the students, it is hoped to use Small Group Discussion Strategy because it can make them to be able to comprehend the text.
3. For the next researcher, this research can help the other researcher who will conduct further research in the same topic. The other researcher can get the information from this experimental research, even do a comparison between this research and another with the similar variable.
4. For the English lecturer, it is hoped to teach this technique so that the university students who will become teachers can apply this strategy while they are teaching reading narrative text.

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## CURRICULUM VITAE

1. Identity

| Name | $:$ Zamila Fitriani Siregar |
| :--- | :--- |
| Registration Number | $: 1520300041$ |
| Place/Date of Birth | $:$ Gunungtua, Februari /18/1997 |
| Sex | $:$ Famale |
| Religion | $:$ Moslem |
| Address | $:$ Gunungtua, Kab. Padang Lawas Utara |

2. Parents Name

| 1. Father's name | : Haris Muda Siregar |
| :--- | :--- |
| 2. Mother's name | : Nurhawani Simamora |

3. Educational background:
4. Graduated from Primary School 101110 Gunungtua in 2009
5. Graduated from MTS Darussalam Gunungtua in 2012
6. Graduated from MAS Darussalam Gunungtua in 2015
7. University student in IAIN Padangsidimpuan in 2015

## Appendix 1

## Experimental Class

RENCANA PELAKSANAAN PEMBELAJARAN
(RPP)
Sekolah
: SMK SWASTA PANCA DHARMA

Mata Pelajaran : Bahasa Inggris
Kelas/Semester : XI/Ganjil
Alokasi Waktu : $2 \times 45$ Menit

## A. Kompetensi Inti

- KI 1 dan KI 2 : Menghayati dan mengamalkan ajaran agama yang dianutnya. Menghayati dan mengamalkan perilaku jujur, disiplin, santun, peduli (gotong royong, kerjasama, toleran, damai), bertanggung jawab, responsif, dan pro-aktif dalam berinteraksi secara efektif sesuai dengan perkembangan anak di lingkungan, keluarga, sekolah, masyarakat dan lingkungan alam sekitar, bangsa, negara, kawasan regional, dan kawasan internasional".
- KI 3 : Memahami, menerapkan, dan menganalisis pengetahuan faktual, konseptual, prosedural, dan metakognitif berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya, dan humaniora dengan wawasan kemanusiaan, kebangsaan, kenegaraan, dan peradaban terkait penyebab fenomena dan kejadian, serta menerapkan pengetahuan
prosedural pada bidang kajian yang spesifik sesuai dengan bakat dan minatnya untuk memecahkan masalah
- KI 4: Mengolah, menalar, dan menyaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, bertindak secara efektif dan kreatif, serta mampu menggunakan metode sesuai kaidah keilmuan


## B. Kompetensi Dasar dan Indikator Pencapaian Kompetensi

1. Kompetensi Dasar: - Mampu memahami text yang sedang dipelajari dengan benar
2. Indikator: - Mampu mengidentifikasi informasi yang tersimpan dalam text, mengidentifikasi tema atau topic, mengidentifikasi main idea, memahami vocabulary dan dapat memberikan kesimpulan text

## C. Tujuan Pembelajaran

Setelah mengikuti proses pembelajaran, peserta didik diharapkan dapat:

- Siswa mampu memahami text dengan baik dengan bantuan metode yang diberikan oleh guru


## E. Metode Pembelajaran

1) Metode Pembelajaran : Small Group Discussion Strategy

## F. Media Pembelajaran

## 1. Media

- Worksheet atau lembar kerja (siswa)
- Buku paket


## 2. Alat/Bahan

- Spidol, papan tulis
G. Sumber Belajar : Buku yang berkaitan


## H. Langkah-Langkah Pembelajaran

| 1 | Pertemuan Ke-1 (2 x 45 Menit) |
| :---: | :---: |
| Kegiatan Pendahuluan (10 Menit) |  |
| Guru : |  |
| Orientasi |  |
| $\bullet$ | Melakukan pembukaan dengan salam pembuka, memanjatkan syukur kepada Tuhan YME dan berdoa untuk memulai pembelajaran |
| $\bullet$ | Memeriksa kehadiran peserta didik sebagai sikap disiplin |
| $\bullet$ | Menyiapkan fisik dan psikis peserta didik dalam mengawali kegiatan pembelajaran. |
| $\bullet$ | Memperkenalkan diri pada siswa dan menyampaikan maksud kedatangan ke dalam kelas |
| Motivasi |  |
| $\bullet$ | Memberikan gambaran tentang manfaat mempelajari pelajaran yang akan dipelajari dalam kehidupan sehari-hari. |
| Pemberian Acuan |  |
| $\bullet$ | Memberitahukan materi pelajaran yang akan dibahas pada pertemuan saat itu. |
| $\bullet$ | Memberitahukan tentang kompetensi inti, kompetensi dasar, indikator, |


| pada pertemuan yang berlangsung |  |
| :---: | :---: |
| -Menjela <br> langkah | an mekanisme pelaksanaan pengalaman belajar sesuai dengan <br> gkah pembelajaran. |
| Kegiatan Inti ( 70 Menit ) |  |
| Kegiatan Pembelajaran |  |
| Stimulation (stimullasi/ pemberian rangsangan) | - Peserta didik diberi motivasi atau rangsangan untuk memusatkan perhatian pada topik materi yang akan diajarkan dengan cara memberikan siswa text dan membaca text tersebut dengan metode diskusi. <br> - Guru menjelaskan apa isi yang terkandung dalam text <br> - Guru menulis komponen dari Inquiry Method pada papan tulis <br> - Siswa bekerja sendiri atau tidak berkelompok <br> - Guru memberikan siswa lembar kerja dan meminta siswa untuk menjawab lembar kerja tersebut <br> - Guru membantu dan memandu siswa menjawab lembar kerja dengan menggunakan Inquiry Method satu per satu |
| Catatan : Selama pembelajaran, guru mengamati sikap siswa dalam pembelajaran yang meliputi sikap: nasionalisme, disiplin, rasa percaya diri, berperilaku jujur, tangguh menghadapi masalah tanggungjawab, rasa ingin tahu, peduli lingkungan |  |


| Keg | atan Penutup (10 Menit) |
| :---: | :---: |
| Peserta didik : |  |
|  | Membuat resume (CREATIVITY) dengan bimbingan guru tentang point-point penting yang muncul dalam kegiatan pembelajaran yang baru dilakukan. |
| $\bullet$ | Mengumpulkan lembar kerja yang telah dikerjakan |
| Guru : |  |
| $\bullet$ | Meminta siswa untuk mengulang dan mempraktekan Inquiry Learning Method di rumah agar lebih memudahkan siswa dalam pembelajaran berikutnya |
|  | Menutup kelas atau mengakhiri pembelajaran dengan salam |
| 2 | Pertemuan Ke-2 (2 x 45 Menit) |
| Kegiatan Pendahuluan (10 Menit) |  |
| Guru : |  |
| Orientasi |  |
| $\bullet$ | Melakukan pembukaan dengan salam pembuka, memanjatkan syukur kepada Tuhan YME dan berdoa untuk memulai pembelajaran |
| $\bullet$ | Memeriksa kehadiran peserta didik sebagai sikap disiplin |
| $\bullet$ | Menyiapkan fisik dan psikis peserta didik dalam mengawali kegiatan pembelajaran. |
| Aperpepsi |  |
| $\bullet$ | Mengaitkan materi/tema/kegiatan pembelajaran yang akan dilakukan dengan pengalaman peserta didik dengan materi/tema/kegiatan |


| sebelumnya |  |
| :---: | :---: |
| Mengingatkan kembali materi prasyarat dengan bertanya. |  |
| Motivasi |  |
| Memberikan gambaran tentang manfaat mempelajari pelajaran yang akan dipelajari dalam kehidupan sehari-hari. |  |
| Pemberian Acuan |  |
| Memberitahukan materi pelajaran yang akan dibahas pada pertemuan saat itu. |  |
| Memberitahukan tentang kompetensi inti, kompetensi dasar, indikator, dan KKM pada pertemuan yang berlangsung |  |
| - $\begin{array}{ll}\text { Menjela } \\ \text { langkah }\end{array}$ | an mekanisme pelaksanaan pengalaman belajar sesuai dengan ngkah pembelajaran. |
| Kegiatan Inti ( 70 Menit) |  |
| Kegiatan Pembelajaran |  |
| Stimulation (stimullasi/ pemberian rangsangan) | - Peserta didik diberi motivasi atau rangsangan untuk memusatkan perhatian pada topik materi yang akan diajarkan dengan cara memberikan siswa text dan membaca text tersebut bersama-sama. <br> - Guru menjelaskan apa isi yang terkandung dalam text <br> - Guru menulis komponen dari Inqiry Learning Method pada papan tulis <br> - Siswa bekerja sendiri atau tidak berkelompok |


|  |  | - Guru memberikan siswa lembar kerja dan meminta siswa untuk menjawab lembar kerja tersebut <br> - Guru membantu dan memandu siswa menjawab lembar <br> kerja dengan menggunakan Inquiry Learning Method satu per satu |
| :---: | :---: | :---: |
| Catatan : Selama pembelajaran, guru mengamati sikap siswa dalam pembelajaran yang meliputi sikap: nasionalisme, disiplin, rasa percaya diri, berperilaku jujur, tangguh menghadapi masalah tanggungjawab, rasa ingin tahu, peduli lingkungan |  |  |
| Kegiatan Penutup (10 Menit) |  |  |
| Peserta didik : |  |  |
| $\bullet$ | Membuat <br> point-poin <br> baru dilak | resume (CREATIVITY) dengan bimbingan guru tentang penting yang muncul dalam kegiatan pembelajaran yang kan. |
| Guru : |  |  |
| $\bullet$ | Peserta projek/pro | didik yang selesai mengerjakan tugas <br> uk/portofolio/unjuk kerja dengan benar diberi penghargaan |
|  | Menyimp | kan pembelajaran dari pertemuan pertama dan kedua |
| $\bullet$ | Menutup | au mengakhiri pembelajaran dengan salam |

H. Penilaian : The Amount of Correct Answer in Completion

| Sub Indikator Pencapaian Kompetensi | Teknik Penilaian | Bentuk Instrument | Instrument Soal |
| :---: | :---: | :---: | :---: |
| 1. Identifying Topic Sentence <br> 2. Identifying Main Idea <br> 3. Identifying Specific Information <br> 4. Identifying Vocabulary <br> 5. Identifying Conclusion | Tes Tulisan | Multiple Choice | Multiple Choice Question (choose the best answer by crossing (x) a, b, c, or d) |

Mengetahui,

Validator
Padangsidimpuan,
2019

Peneliti

Zainuddin, M.Hum

## Zamila Fitriani Siregar

NIM. 1520300041

## APPENDIX 3

## Instrument for Pre-test

## Name:

## Class:

Petunjuk: Read the text, then choose the best answer by crossing (x) a, b, c, or d!
This text for question number 1 to 4

The Princess and the Pea
Once upon a time there was a prince he wanted to get himself a princess, but she had to be real princess. So he traveled all over the world to find one, but in every case something was the matter. There were lots of princess, but he could never quite make out whether they were real or not. So he came home feeling very unhappy, for really wanted to find a true princess.

One evening a terrible storm came; lightening flashed, thunder rolled, and the rain poured down in torrents-it was simply awful! suddenly there was a knock at the city gate, and the old king went out to answer it.

There was a princess standing outside, but what a sight the rain and the bad weather had made of her ! The water streamed down her hair and her clothes, and yet she said she was a real princess.
"It won't take long to find that out," thought the old Queen. Without saying anything, she went into bed chamber, took off all the bedclothes, and places one pea on the bottom boards of the bed. Then she took twenty mattresses and put them on top of the pea, and after that she put twenty feather-pillows on top of the mattresses.

That was where the princess was to spend the night.
In the morning they asked her how she had slept.
"Oh, dreadfully! said the princess. "I hardly slept a wink all night. Whatever could have been in the bed ? I was lying on something so hard that I'm black and blue all over."

So of course they could see that she was a real princess, since she had felt the pea through twenty mattresses and twenty feather-pillows. No one but a real princess could have such a tender skin as that.

So the prince took her for his wife, and they lived happily ever after.

1. What is the purpose of the text ?
a. to inform about princess and the pea
b. to describe the story of the princess and the pea
c. to give information that the prince looked for the real princess
d. to amuse the reader with the story of the princess and the pea
2. What kind of the text is it?
a. report
b. recount
c. narrative
d. descriptive
3. What is the dominant structure used in the text?
a. the simple present tense
b. the simple past tense
c. the present continuous tense
d. passive voice
4. No one but a real princess could have such a tender skin as that. The SYNONYM of 'tender' is ...
a. hard
b. light
c. weak
d. soft

Read the text, then choose the best answer to each questions.
This text is for No 5 - 10
Once upon a time, there was an old woman who lived in a very old hut near a forest with her only daughter. The daughter's name is Misna. She is beautiful but she had envious heart.

One day she saw girl of her age passing by her hut. The girl was joining her father hunting. She dressed in beautiful cloth. His father's assistants respected her. Misna could not sleep when she was remembering this. She was very angry with her condition. She hated her hopeless mother.

In the morning she shouted at her mother. She wanted her mother to buy the most beautiful gown in the markets for her. Of course her mother could not afford it. Then she cried and cried. She did not want to eat anything. Her mother was very sad. She decided to sell a piece of land, the only valuable thing that she had. She bought her beloved daughter a very beautiful dress.

Misna admired herself. She wanted to show everybody that she was a very beautiful girl. She asked her mother to bring her to another village. Along the way, she smiled to everyone. People in the village thought that she was a princess. They gave her a high respect and invited her to have meal in their house. Misna enjoyed this and told everybody that she was princess and mother was maid. Her mother was very sad but she kept her felling deep in the heart.

On the way home Misna met a handsome prince. He was interested in her and wanted to marry her. Misna told the prince that her mother had died and father went married to another woman. She was having a long trip with her loyal maid. Listening to this, her mother was very upset. She cried loudly Misna was very angry to her and told her to be away from her.

Suddenly there was a heavy rain accompanied with big thunders. Everyone run away to save themselves. Misna was very afraid. She cried. Her mother wanted to help her but she did not want to at that time a big thunder hit her to dead.
5. What is the type of the text?
a. Procedure
b. Descriptive
c. Narrative
d. News item
6. When did she ask her mother a beautiful dress?
a. After she saw another girl with beautiful dress
b. on the way home she met a handsome prince
c. after her mother sold a piece of her land
d. when a heavy rain and big thunders came
7. How could her mother buy her a beautiful dress?
a. from her saving
b. by asking her relative some money
c. by robbed a bank
d. by selling the only land she had
8. What made her mother cried aloud?
a. she told everyone that she was her maid
b. she told the prince that her mother had died
c. she told the prince that she was her maid
d. she wanted her mother to buy the most beautiful gown
9. What happened at last?
a. Misna got married to a prince
b. Misna was wet in rain
c. Her mother bought her the most beautiful gown
d. A thunder hit Misna to dead
10. She is beautiful but she had envious heart

What is the synonym of the underlined word?
a. Ambigious
b. Jealous
c. Fierce
d. Festive

Read the text, then choose the best choice to each questions.
This text is for No $11-17$

## SANGKURIANG

A long time ago, the ancient land of Sunda was ruled by a king and queen who had but a single daughter. Her name was Dayang Sumbi. She was beautiful and clever but also pampered and spolited.

One day as she was weaving in her pavilion, she became moody and distracted, which caused her to keep dropping her shuttle on the floor. Once when it fell she exclaimed she would marry the one who gave it back to her. At that very moment her dog Tumang, a
demigod possessing magic powers, came up to her with the shuttle in his mouth. Dayang Sumbi had to marry him.

They lived happily together, and Dayang Sumbi gave birth to a baby boy, human in appearance but endowed with his father's magic powers. She named him Sangkuriang. As the boy grew up, he was always guarded by the faithful dog Tumang, whom he knew only as a companion and not as his father, Sangkuriang became handsome and brave.

One day his mother asked him to go hunting with the dog and bring her venison for a feast. After hunting all day without success, Sangkuriang worried about facing his mother empty-handed. Desperate, he took an arrow and shot the dog. He returned home and handed over the meat to his pleased mother. Soon after the feast, however, Dayang Sumbi questioned her son about the absence of Tumang. At first he evaded her queries but finally told her what had happened. She was horrified and struck her son so hard on the temple that he collapsed. For that, the old king banished his daughter from the court and she was made to roam around the kingdom. Sangkuriang recovered with a large scar on his temple, and he too left the court to wander about the world.

Years later, Sangkuriang met a beautiful woman and instantly fell in love with her. It was his own mother-they did not recognize each other. He pro posed to her and she agreed to marry him. On the day before the wedding, as she was caressing her fiancee's hair, Dayang Sumbi detected the scar on the temple. Horror struck her, for she was about to marry her own son, Sangkuriang. Without revealing the whole truth to him, she tried unsuccessfully to dissuade him. Desperate to avoid the marriage, she set conditions she thought impossible to meet. Sangkuriang had to make a lake that filled the whole valpley and build a boat for the couple to sail in, all before dawn.

Sangkuriang started to work. His love gave him extraordinary strength, and he used his magic powers to summon the spirits to help him. With boulders and mud they dammed the river in the valley and the water rose and began to form a lake. In the early morning hours he chopped down a huge tree in the forest and began hollowing it out to make a boat. When Dayang Sumbi saw that he was about to accomplish what she has thought impossible, she called on the gods to bring the sun up early and thwart Sangkuriang.

The cock crowed, the sun rose much earlier than usual, and Sangkuriang realized he had been deceived. In a fit of fury he caused Dayang Sumbi and kicked the half-finished boat back into the forest. There it lies upside down today, forming the mountain Tangkuban Perahu (Upturned Boat). Not far away is the stump of the tree Sangkuriang had felled, now called Bukit Tinggi. The dam Sangkuriang had built caused the valley to become a lake, where both Sangkuriang and Dayang Sumbi drowned themselves. They were never heard of again.
11. Who was Dayang Sumbi's husband ?
a. The King
b. Sangkuriang
c. Tumang
d. Her fiancee
12. Why did she marry her dog, Tumang ? because...
a. She exclaimed to marry one who gave it back her shuttle
b. It was a companion Sangkuriang
c. She fell in love with it
d. It was a demigod possessing magic powers
13. Why did Sangkuriang kill his dog? because....
a . He took an arraw and shot the dog
b. He wanted to take Tumang's powers
c. Sangkuriang loved Dayang Sumbi
d. He worried about facing his mother empty-handed
14. What did Dayang Sumbi do after she knew about Tumang ?
a. She married Sangkuriang
b. She struck her son so hard
c. She exclaimed she would marry him
d. She kicked the half-finished boat back into the forest
15. Why did Dayang Sumbi avoid to marry Sangkuriang ? because .....
a. Sangkuriang had shot her dog
b. She didn't love him
c. Dayang Sumbi elected the scar on her fiancee's head
d. Sangkuriang was not a king
16. What did Sangkuriang have to do to mary Dayang Sumbi ?
a. He had to make a lake and built a boat before dawn
b. He had to make a lake and built a temple after dawn
c. He had to make a palace and built a boat before dawn
d. He had to make a lake and built a boat before evening
17. What did Sangkuriang do after he realized that he had been deceived ?
a. He took an arrow and shot Dayang Sumbi
b. He struck Dayang Sumbi
c. He Chopped down a huge tree in the forest
d. He Cursed Dayang Sumbi and kicked the half-finished boat back into the forest.

Read the text, then choose the best choice to each questions.

## A Woman and the Wolves

A long time ago, very few people lived in the New Territories. There were only a few villages. If the people wanted to go from one village to another, they often had to pass through wild and unsafe forest.

One day, a farmer's young wife went to the next village to visit her own mother and brother. She brought along her baby son. When it was time for her to leave, her brother said " it is getting dark. Let my son, Ah Tim go with you though the forest."

So Ah Tim led the way and the young woman followed behind, carrying her baby. When they were in the forest, suddenly they saw a group of wolves. They began to run to avoid the danger, but Ah Tim kicked against a stone and fell down. At once the wolves caught him. The young woman cried to the wolves, " please eat my own son instead." Then, she put her baby son on the ground in front of the wolves and took her nephew away.

Everyone understood that this was because the woman was very good and kind. She had offered her own son's life to save her nephew.

They ran back to the house and called for help. All men in the village fetched thick sticks and went back with her into the forest. When they got there, they saw something very strange. Instead of eating the woman's baby the wolves were playing with him.
18. What separated between one village to another a long time ago in the New Territories ?
a. Another village
b. Mountains
c. Forests
d. Hills ve. Towers and logs
19. Who was Ah Tim?
a. The young woman's brother
b. The young woman's son
c. The young woman's brother and nephew
d. The young woman's brother's son
20. What is the purpose of the writer by writing the story above ?
a. To describe the danger of the villages
b. To entertain the readers of the story
c. To tell the villagers' relationship
d. To explain how important a relative is

## APPENDIX 4

## Instrument for Post-test

## Name:

Class:

Petunjuk: Read the text, then choose the best answer by crossing (x) a, b, c, or d!
This questions for No 1-10

## Malin Kundang

Once upon a time, that a poor family consisting of a mother and her son named Malin Kundang. Because his father had left him, the mother must work hard to be able to raise a family.Malin was the son of the wise but a little bit naughty. When he is about to go up, Malin feel sorry for his mother who always used to work hard live it.

Then Malin ask permission for going about looking for a job in the big city. "Mom, I want to go to town. I want to work to be able to help mom here. "pinta Malin. "Don't leave the mother alone, son. Mom just got you here. "said the mother refused. "Let me go, mom. I pity seeing mom continued to work until now." said Malin. "Well son, but remember don't forget mom and this village when you have success there," Said the teary mother of ari's eyes.

The next day, Malin went to the big city with the use of a ship. After several years of hard work, he succeeded in the city of rantauannya.Malin is now a wealthy man who even had a number of merchant ships. And Malin had married a beautiful woman there. News about Malin who became a wealthy man to the one to his mother. The mother was very happy to hear it. He is always waiting at the beach every day, hoping the older si wayangnya eyes back and raised his mother. drajat But Malin never came.

One day istiri Malin asked about mother Malin and want to meet with him. Malin was not able to resist the desires of the wife of a very loved it. That the journey towards preparing Malin village using a private ship pretty great. Eventually the matter came to his village Malin, along with his wife and his men.

Hear the arrival of Malin, the mother felt very excited. she even ran to the beach to immediately see her son."What is it my son Malin, ya? This your mother, you remember "askedher mother."Malin Kundang, my son, why are you going so long without sending the news?" He said while hugging Malin Kundang.

His wife, who was surprised at the fact that the old lady, smelly, filthy who embraced her husband, said:"So, the smell of old lady, this is the mother you filthy, Malin"Because of the shame, Malin Kundang soon let go of his mother's arms and pushed him to fall.
"I didn't know you poor old woman," said Malin.
"The Foundation of the old lady had no idea myself, any just claim to be my mother." Advanced Malin snapped.Hear the words of his children like that, the mother feels sad and angry. He did not suspect, and the very disayanginya turns into a childof $\sin$. "Oh my God, if he is a true son of mine, I beg give doom him and Fox was the one she so rocks." the prayer of his mother's wrath. Shortly thereafter the wind and Thunder rumbles hit
and destroy ships Malin Kundang. After that, the body of Malin Kundang is stiff and then into the rock with coral.
1.Who is Malin?
a. A son who love his mother
b.A son who care with his mother
c. A son who betray his mother
d. A son who always with his mother
2. What Malin's mother does to malin?
a.Leave malin alone
b.accompany malin until the end of the time
c.Curse malin into a rock
d.apologize malin
3.Where malin meets his mother?
a.In his home
b.in a beach
c.In cafe
d.in a station
4.What malin's wife does?
a.Care with malin's mom
b.Love malin's mom
c.Did not care with malin's mom
d.Talk to malin's mom
5.What do you learn from the story of Malin Kundang?
a.Never be a cruel son/daughter
b.Leave our old mom
c.give our mom money
d.Meet our mom
6.What malin said to his mom before he went to the city?
a.Malin never be back
b.He promises to be back
c.He will forget his mom
d.He will give his mom much money
7.How many actors in the story of Malin Kundang?
a.Three actors
b.Two actors
c.One actor
d.Nothing
8.Where the story comes from?
a.Jakarta
b.West sumatera
c.South sumatera
d.North Smatera
9.Who is the main actor of that story?
a.Malin kundang
b.Malin's mom
c.Malin's wife
d.Malin's society
10.Why malin meets his mom?
a.He misses his mom
b.He will give much money to his mom
c.He accept a request from his wife
d.He wants hug his mom

Read the text, then choose the best choice to each questions. This questions for no 21-24
The old witch locked Hansel in a cage and set Gretel to clean the house. She planned to eat them both. Each night the children cried and begged the witch to let them go.
Meanwhile, at home, their stepmother was beginning to wish she had never tried to get rid of the children. "I must find them," she said and set off into the forest.
Many hours later, when her feet were tired from walking and her lips were dry from thirst, she came to the cottage belonging to the witch. The stepmother peeped through the window. Her heart cried out when she saw the two children.

She picked up the broom leaning against the door and crept inside. The witch was putting some stew in the oven when the stepmother gave her an almighty push. The witch fell into the oven and the stepmother shut the door.
'Children, I have come to save you,' she said hugging them tightly. I have done a dreadful thing.

I hope in time you will forgive me. Let me take you home and become a family again. They returned to their home and the stepmother became the best mother anyone could wish to have, and of course they lived happily ever after!
11. The story is about...
a. two children went to school for the first time
b. a witch who is really kind
c. a father who begged a witch for money
d. a stepmother who saved her children from a witch
12. Which statement is FALSE about the witch?
a. she locked hansel in a cage
b. she planned to eat hansel \& gretel
c. she fell into the ocean
d. she hated the children
13. "The witch fell into the oven and the stepmother shut the door." (Paragraph 4). The underlined word "shut" can be replaced by the word...
a. marked
b. painted
c. opened
d. closed
14. How did the stepmother find her children?
a. she walked into the forest
b. she got tired and met her children
c. she peeped through the window of the witch's cottage
d. she fell into the cliff

Read the text, then choose the best choice to each questions. This questions for no 25-28
A man in Puerto Rico had a wonderful parrot. There was no other parrot like it. It was very, very smart. This parrot would say any word-except one. He would not say the name of the town where he was born. The name of the town was Catano.
The man tried to teach the parrot to say Catano. But the bird would not say the word. At first the man was very nice, but then he got angry. "You are a stupid bird! Why can't you say the word? Say Catano, or I will kill you!" but the parrot would not say it. Then the man got to so angry that the shouted over and over, "Say Catano, or I'll kill you!" but the bird wouldn't talk.

One day after trying for many hours to make the bird say Catano, the man got very angry. He picked up the bird and threw him into the chicken house. "You are more stupid than the chickens. Soon I will eat them, and I will eat you, too." In the chicken house there are four old chickens. They were for Sunday's dinner. The man put the parrot in the chicken house and left. The next day the man came back to the chicken house. He opened the door and stopped. He was very surprised at what he saw! He saw three dead chickens on the floor. The parrot was screaming at the fourth chicken, "Say Catano, or I'll kill you!
15. Where does the story take place?
a. indonesia
b. brazil
c. puerto rico
d. new york
16. From the text we learn that...
a. we have to follow others
b. we have to respect pet owner
c. we have to imitate others
d. we are not allowed to force others
17. Which statement is false according to the text?
a. catano was the name of the city where the parrot came from
b. the man got angry at the parrot
c. the parrot couldn't say catano
d. the man killed the parrot
18. "It was very, very smart". The underlined word "It "refers to...
a. the chicken
b. the man
c. the catano
d. the bird

Read the text, then choose the best choice to each questions. This questions for no 29-30
Once upon a time there lived a little girl named Snow White. She lived with her aunt and uncle because her parents were dead. 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.
19. What type of the text is used by the writer?
a. narrative
b. report
c. anecdote
d. comparative
20. To tell the plot, the writers uses...
a. a rhetorical question and an exclamation
b. time sequences
c. contrastive evidences
d. past tense

## APPENDIX 5

Key Answer for Pre Test

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

## Key Answer for Post Test

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

## Appendix 7

Calculation of the formulation $\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$ in Pre-Test

## A. Calculation of Pre-Test

1. Mean score from score total $\left(\mathbf{M}_{\mathrm{t}}\right)$

$$
\begin{aligned}
& \mathrm{M}_{\mathrm{t}}=\frac{\sum x_{t}}{N} \\
& \mathrm{M}_{\mathrm{t}}=\frac{338}{25}=13.52
\end{aligned}
$$

2. Standard Deviation $\left(\mathbf{S D}_{\mathbf{t}}\right)$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=\sqrt{\frac{\sum X_{t^{2}}}{N}-\left(\frac{\sum x_{t}}{N}\right)^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{\frac{4882}{25}-\left(\frac{338}{25}\right)^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{195.28-13.32^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{195.28-182.7904} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{12.4896}=3.5340
\end{aligned}
$$

3. Mean Score ( $\mathbf{M}_{\mathrm{p}}$ )

## Item 1

$\mathrm{M}_{\mathrm{pl}=}=\frac{\text { total score of students' } \text { score that true item answer }}{n 1}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+16+13+15+13+16+8+10+9+11+17+12+13+13}{17}$
$\mathrm{M}_{\mathrm{pl}}=\frac{238}{17}=14$

## Item 2

$\mathrm{M}_{\mathrm{pl}=} \frac{\text { total score of students' } \text { score that true item answer }}{n 2}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+26+16+15+12+10+9+16+14+17+11+17+13+13}{14}$
$\mathrm{M}_{\mathrm{pl}}=\frac{203}{14}=14.5$

## Item 3

$\mathrm{M}_{\mathrm{pl} 1} \frac{\text { total score of students' } \text { score that true item answer }}{n 3}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+16+15+12+14+17+11+12+13}{18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{182}{12}=15.16$

## Item 4

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 4}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+26+15+12+13+16+8+10+9+17}{10}$
$\mathrm{M}_{\mathrm{pl}}=\frac{141}{10}=14.1$

## Item 5

$\mathrm{M}_{\mathrm{pl} 1}=\frac{\text { total score of students'score that true item answer }}{n 5}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+17+13+12+16+14+10+17+10}{9}$
$\mathrm{M}_{\mathrm{pl}}=\frac{124}{9}=13.77$

## Item 6

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 6}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+17+13+13+17+17+10}{7}$
$\mathrm{M}_{\mathrm{pl}}=\frac{113}{7}=16.14$

## Item 7

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 7}$
$\mathrm{M}_{\mathrm{pl}=} \frac{26+13+15+12+14+8+17+17+10+13+13}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{158}{11}=14.36$

## Item 8

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 8}$
$\mathrm{M}_{\mathrm{pl}=} \frac{14+26+16+13+12+16+8+17+12+13+13}{11}$
$M_{p l}=\frac{160}{11}=14.54$

## Item 9

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 9}$
$\mathrm{M}_{\mathrm{pl}=}=\frac{26+13+12+13+12+16+14+10+17+11+10+11+13+13}{14}$
$M_{p l}=\frac{192}{14}=13.72$

## Item 10

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 10}$
$\mathrm{M}_{\mathrm{pl}=} \frac{15+26+17+16+13+13+15+12+13+12+16+14+17+11+17+12+10+11+13+13}{20}$
$\mathrm{M}_{\mathrm{pl}}=\frac{286}{20}=14.3$

## Item 11

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+17+13+11+17+17+11}{7}$
$\mathrm{M}_{\mathrm{pl}}=\frac{112}{7}=16$

## Item 12

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 12}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+17+16+13+12+16+14+11+17+17+11}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{170}{11}=15.45$

## Item 13

$\mathrm{M}_{\mathrm{pl} 1}=\frac{\text { total score of students'score that true item answer }}{n 13}$ $14++15+26+17+16+13+13+15+12+12+9+11+11+17+13$
$\mathrm{M}_{\mathrm{pl}}=\longrightarrow 15$
$\mathrm{M}_{\mathrm{pl}}=\frac{214}{15}=14.25$

## Item 14

$\mathrm{M}_{\mathrm{pl} 1} \frac{\text { total score of students'score that true item answer }}{n 14}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+15+16+11}{4}$
$\mathrm{M}_{\mathrm{pl}}=\frac{254}{4}=14.25$

## Item 15

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 15}$
$\mathrm{M}_{\mathrm{pl}=} \frac{15+13+11+12+11}{5}$
$\mathrm{M}_{\mathrm{pl}}=\frac{62}{5}=12.4$

## Item 16

$\mathrm{M}_{\mathrm{pl}=} \frac{\text { total score of students'score that true item answer }}{n 16}$
$\mathrm{M}_{\mathrm{pl}=} \frac{15+26+13+13+13+12+9+11+17+17+13}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{159}{11}=14.45$

## Item 17

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 17}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+26+13+13+15+13+11+17}{8}$
$\mathrm{M}_{\mathrm{pl}}=\frac{123}{8}=15.37$

## Item 18

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+16+15+12+12+16+11+17+11+17+13+13}{15}$
$M_{p l}=\frac{225}{15}=15$

## Item 19

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 19}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+26+16+13+13+15+8+9+11+11+17+10+11+13}{14}$
$\mathrm{M}_{\mathrm{pl}}=\frac{187}{14}=13.35$

## Item 20

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 20}$
$\mathrm{M}_{\mathrm{pl}=} \frac{26+12+16+9+11+17+17+12+10+13}{10}$
$M_{p l}=\frac{143}{10}=14.3$

## Item 21

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 21}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+26+17+16+17+12+13}{7}$
$M_{p l}=\frac{115}{7}=16.42$

## Item 22

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 22}$
$\mathrm{M}_{\mathrm{pl}=} \frac{14+26+17+16+16+14+8+12+11}{9}$
$M_{p l}=\frac{134}{9}=14.88$

## Item 23

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' } \text { score that true item answer }}{n 23}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+13+12+11+17+11+17+11}{8}$
$\mathrm{M}_{\mathrm{pl}}=\frac{118}{8}=14.75$

## Item 24

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 24}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+13+13+15+13+16+14+10+17+12+11}{14}$
$\mathrm{M}_{\mathrm{pl}}=\frac{206}{14}=14.71$

## Item 25

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 25}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+16+8+13+13}{8}$
$\mathrm{M}_{\mathrm{pl}}=\frac{122}{8}=15.25$

## Item 26

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true itemanswer }}{n 26}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+26+17+16+12+13+16+14+10+11+17+11+12+10+11+13}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{224}{16}=14$

## Item 27

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students' score that true item answer }}{n 27}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+26+17+16+13+13+12+13+16+14+10+12+11+13+13}{15}$
$\mathrm{M}_{\mathrm{pl}}=\frac{213}{15}=14.2$

## Item 28

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 28}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+26+13+15+12+14+12}{7}$
$\mathrm{M}_{\mathrm{pl}}=\frac{106}{7}=15.14$

## Item 29

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 29}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+16+13+13+15+12+14+10+9+17+13}{11}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{158}{11}=14.36
$$

## Item 30

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { total score of students'score that true item answer }}{n 25}$
$\mathrm{M}_{\mathrm{pl}}=\frac{14+15+26+17+16+13+15+12+13+12+16+14+8+10+9+11+12+11}{18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{224}{18}=13.55$
4. Calculation of the formulation $\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$

## Item 1

$$
\begin{aligned}
& \mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{14-13,5}{3.53} \sqrt{\frac{0.7}{0.3}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{0.5}{3.53} \sqrt{2.5} \\
& \mathrm{r}_{\mathrm{pbi}}=0.141 \times 1.58=0,22278
\end{aligned}
$$

## Item 2

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.5-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.283 \times 1.38=0.3909$

## Item 3

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{15.16-13.5}{3.53} \sqrt{\frac{0.7}{0.3}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.66}{3.53} \sqrt{2.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.470 \times 1.66=0.7802$

## Item 4

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.85-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{3.36}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.668 \times 0.883=0.58984$

## Item 5

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{19.36-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{5.86}{3.53} \sqrt{1.6}$
$r_{p b i}=1.66 \times 1.054=1.7496$

## Item 6

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{16.14-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{2.64}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.747 \times 0.883=0.6596$

## Item 7

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.38-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$r_{p b i}=\frac{1.04}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.294 \times 1.024=0.3010$

## Item 8

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.54-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.04}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.294 \times 1.024=0.3010$

## Item 9

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{13.72-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.22}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.062 \times 1.389=86.118$

## Item 10

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.3-13.5}{3.53} \sqrt{\frac{0.8}{0.2}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.8}{3.53} \sqrt{4.47}$
$\mathrm{r}_{\mathrm{pbi}}=0.226 \times 2.114=0.477763$

## Item 11

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{16-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{2.5}{3.53} \sqrt{0.782}$
$\mathrm{r}_{\mathrm{pbi}}=0.708 \times 0.884=-0.176$

## Item 12

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.45-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.95}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.552 \times 1.024=-0.56524$

## Item 13

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.25-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.75}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.212 \times 1.38=0.29256$

## Item 14

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.25-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.75}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.212 \times 1.38=0.29256$

## Item 15

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{12.4-13.5}{3.53} \sqrt{\frac{0.2}{0.8}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{-1.1}{3.53} \sqrt{0.55}$
$\mathrm{r}_{\mathrm{pbi}}=-0.311 \times 0.741=-0.23045$

## Item 16

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.45-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.95}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.269 \times 1.024=0.27545$

## Item 17

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.37-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.87}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.529 \times 0.88=0.46552$

## Item 18

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{15-13.5}{3.53} \sqrt{\frac{0.7}{0.3}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.5}{3.53} \sqrt{2.33}$
$r_{p b i}=0.424 \times 1.52=0.64448$

## Item 19

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{13.35-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$r_{p b i}=\frac{-0.15}{3.53} \sqrt{1.93}$
$r_{p b i}=-0.042 \times 1.38=-0.05796$

## Item 20

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{14.3-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$r_{\mathrm{pbi}}=\frac{0.8}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.22 \times 1.024=0.22528$

## Item 21

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{16.42-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$r_{p b i}=\frac{2.63}{3.53} \sqrt{0.78}$
$r_{p b i}=0.745 \times 0.88=0.6556$

## Item 22

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.88-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$r_{p b i}=\frac{1.38}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.390 \times 1.38=0.5382$

## Item 23

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{14.75-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.25}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.354 \times 0.883=0.31258$

## Item 24

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{14.71-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.21}{3.53} \sqrt{1.93}$
$r_{p b i}=0.342 \times 1.38=0.47196$

## Item 25

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.25-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.75}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.495 \times 0.883=0.43708$

## Item 26

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.5}{3.53} \sqrt{1.0} 5$
$\mathrm{r}_{\mathrm{pbi}}=-0.141 \times 1.024=0.14438$

## Item 27

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.2-13.5}{3.53} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.7}{3.53} \sqrt{1.93}$
$\mathrm{r}_{\mathrm{pbi}}=0.198 \times 1.38=0.27324$

## Item 28

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.14-13.5}{3.53} \sqrt{\frac{0.3}{0.7}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.64}{3.53} \sqrt{0.78}$
$\mathrm{r}_{\mathrm{pbi}}=0.464 \times 0.883=0.40971$

## Item 29

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{14.36-13.5}{3.53} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.86}{3.53} \sqrt{1.05}$
$\mathrm{r}_{\mathrm{pbi}}=0.243 \times 1.024=0.24883$

## Item 30

$$
\begin{aligned}
& \mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{13.55-13.5}{3.53} \sqrt{\frac{0.7}{0.3}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{0.05}{3.53} \sqrt{2.78} \\
& \mathrm{r}_{\mathrm{pbi}}=0.014 \times 1.667=0.02333
\end{aligned}
$$

## Appendix 8

Table Validity of Pre-test

| No | $\mathrm{M}_{\mathrm{p}}$ | $\mathrm{M}_{\mathrm{t}}$ | $\mathrm{SD}_{\mathrm{t}}$ | P | Q | $\mathrm{r}_{\mathrm{pbi}}=\frac{\mathrm{m}_{\mathrm{p}-\mathrm{M}_{\mathrm{t}}}}{\mathrm{SD}_{\mathrm{t}}} \sqrt{\frac{\mathrm{p}}{\mathrm{q}}}$ | $\begin{gathered} r_{t} \text { on } 5 \% \\ \text { significant } \end{gathered}$ | Interpretation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 14 | 13.5 | 3.53 | 0.7 | 0.3 | 0.235 | 0.396 | Invalid |
| 2. | 14.5 | 13.5 | 3.53 | 0.6 | 0.4 | 0.390 | 0.396 | Invalid |
| 3. | 15.16 | 13.5 | 3.53 | 0.5 | 0.5 | 0.78 | 0.396 | Valid |
| 4. | 15.86 | 13.5 | 3.53 | 0.7 | 0.3 | 0.589 | 0.396 | Valid |
| 5. | 19.36 | 13.5 | 3.53 | 0.4 | 0.6 | 1.749 | 0.396 | Valid |
| 6. | 16.14 | 13.5 | 3.53 | 0.3 | 0.7 | 0.659 | 0.396 | Valid |
| 7. | 15.86 | 13.5 | 3.53 | 0.7 | 0.3 | 0.589 | 0.396 | Valid |
| 8. | 15.16 | 13.5 | 3.53 | 0.5 | 0.5 | 0.78 | 0.396 | Valid |
| 9. | 16.14 | 13.5 | 3.53 | 0.3 | 0.7 | 0.659 | 0.396 | Valid |
| 10. | 14.5 | 13.5 | 3.53 | 0.8 | 0.2 | 0.477 | 0.396 | Valid |
| 11. | 16 | 13.5 | 3.53 | 0.3 | 0.7 | -0.176 | 0.396 | Invalid |
| 12. | 15.45 | 13.5 | 3.53 | 0.4 | 0.6 | 0.565 | 0.396 | Valid |
| 13. | 16.14 | 13.5 | 3.53 | 0.3 | 0.7 | 0.659 | 0.396 | Valid |
| 14. | 18.14 | 13.5 | 3.53 | 0.3 | 0.7 | 1.160 | 0.396 | Valid |
| 15. | 12.4 | 13.5 | 3.53 | 0.2 | 0.8 | -0.230 | 0.396 | Invalid |
| 16. | 14.6 | 13.5 | 3.53 | 0.8 | 0.2 | 0.666 | 0.396 | Valid |
| 17. | 15.37 | 13.5 | 3.53 | 0.3 | 0.7 | 0.465 | 0.396 | Valid |
| 18. | 15 | 13.5 | 3.53 | 0.6 | 0.4 | 0.644 | 0.396 | Valid |
| 19. | 13.35 | 13.5 | 3.53 | 0.6 | 0.4 | -0.0579 | 0.396 | Invalid |
| 20. | 14.3 | 13.5 | 3.53 | 0.4 | 0.6 | 0.2252 | 0.396 | Invalid |


| 21. | 16.42 | 13.5 | 3.53 | 0.3 | 0.7 | 0.6556 | 0.396 | Valid |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22. | 14.88 | 13.5 | 3.53 | 0.4 | 0.6 | 0.528 | 0.396 | Valid |
| 23. | 14.5 | 13.5 | 3.53 | 0.8 | 0.2 | 0.588 | 0.396 | Valid |
| 24. | 14.71 | 13.5 | 3.53 | 0.6 | 0.4 | 0.471 | 0.396 | Valid |
| 25. | 15.25 | 13.5 | 3.53 | 0.3 | 0.7 | 0.4370 | 0.396 | Valid |
| 26. | 14.6 | 13.5 | 3.53 | 0.4 | 0.6 | 0.528 | 0.396 | Valid |
| 27. | 14.5 | 13.5 | 3.53 | 0.6 | 0.4 | 0.588 | 0.396 | Valid |
| 28. | 15.14 | 13.5 | 3.53 | 0.3 | 0.7 | 0.4097 | 0.396 | Valid |
| 29. | 14.36 | 13.5 | 3.53 | 0.4 | 0.6 | 0.2488 | 0.396 | Invalid |
| 30. | 13.55 | 13.5 | 3.53 | 0.7 | 0.3 | 0.0233 | 0.396 | Invalid |

## Appendix 9

Reliable of Pre Test

| NO | NAMA | Item |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 1 | APN | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| 2 | AR | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | AYDH | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4 | AZ | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |
| 5 | JLY | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 6 | MLA | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7 | ML | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 8 | MR | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 9 | MSP | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | MHYM | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11 | MZ | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 12 | RN | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 13 | RH | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 14 | RA | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 15 | RSP | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 16 | ST | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 17 | SR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 |
| 18 | SRD | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |


| 19 | SLZ | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | SD | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 21 | UMP | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 22 | PL | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| 23 | YN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 24 | YH | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 25 | ZD | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
|  | $\mathrm{~N}=25$ | 17 | 14 | 12 | 10 | 8 | 7 | 11 | 12 | 12 | 20 | 8 | 10 | 16 | 4 | 8 | 11 | 9 | 15 | 10 | 12 | 8 | 15 | 8 | 14 |
|  | p | 0,7 |  | 0,5 | 0,4 | 0,3 | 0,3 | 0,4 | 0,5 | 0,5 | 0,8 | 0,3 | 0,4 | 0,6 | 0,2 | 0,3 | 0,4 | 0,4 | 0,6 | 0,4 | 0,5 | 0,3 | 0,6 | 0,3 | 0,6 |
|  | q | 0,3 | 0,6 | 0,5 | 0,6 | 0,7 | 0,7 | 0,6 | 0,5 | 0,5 | 0,2 | 0,7 | 0,6 | 0,4 | 0,8 | 0,7 | 0,6 | 0,6 | 0,4 | 0,6 | 0,5 | 0,7 | 0,4 | 0,7 | 0,4 |
|  | p.q | 0,22 | 0,4 | 0,4 | 0,2 | 0,2 | 0,2 | 0,25 | 0,25 | 0,25 | 0,16 | 0,22 | 0,2 | 0,2 | 0,13 | 0,22 | 0,2 | 0,23 | 0,24 | 0,24 | 0,25 | 0,2 | 0,1 | 0,22 | 0,2 |

## Appendix 10

## Reliability of Pre Test

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

$$
\begin{aligned}
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{s_{t^{2}}-\sum p q}{s_{t^{2}}}\right) \\
& \mathrm{N}=25
\end{aligned}
$$

$$
\sum \mathrm{Xt}=338
$$

$$
\sum \mathrm{Xt}^{2}=4882
$$

$$
\sum \mathrm{pq}=5.16
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=\sum \mathrm{Xt}^{2}-\left(\frac{\sum \mathrm{xt}}{N}\right)^{2}
$$

$$
=4882-\left(\frac{338}{25}\right)^{2}=4882-13.52^{2}=4882-182.7904=4699.2096
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=\frac{\sum \mathrm{Xt} 2}{N}=\frac{4699.2096}{25}
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=187.968
$$

$$
\mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{s_{t^{2}}-\sum p q}{s_{t^{2}}}\right)
$$

$$
\mathrm{R}_{11}=\left(\frac{25}{25-1}\right)\left(\frac{187.968-5.16}{187.968}\right)=\left(\frac{25}{24}\right)\left(\frac{182.808}{187.968}\right)
$$

$$
=(1.04)(0.99)
$$

$$
=1.03\left(\mathrm{r}_{11}>0.70=\text { reliable }\right)
$$

## Appendix 12

Calculation of the formulation $\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$ in Post-Test
B. Calculation of Post-Test

1. Mean score from score total $\left(M_{t}\right)$

$$
\begin{aligned}
& \mathrm{M}_{\mathrm{t}}=\frac{\sum X_{\mathrm{t}}}{N} \\
& \mathrm{M}_{\mathrm{t}}=\frac{393}{25}=15.72
\end{aligned}
$$

2. Standard Deviation $\left(S D_{t}\right)$

$$
\begin{aligned}
& \mathrm{SD}_{\mathrm{t}}=\sqrt{\frac{\sum X_{\mathrm{t}^{2}}}{N}-\left(\frac{\sum x_{\mathrm{t}}}{N}\right)^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{\frac{7413}{25}-\left(\frac{393}{25}\right)^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{296.52-15.72^{2}} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{296.52-247.11} \\
& \mathrm{SD}_{\mathrm{t}}=\sqrt{49.40}=7
\end{aligned}
$$

3. Mean Score $\left(M_{p}\right)$

## Item 1

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 1}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+19+25+10+24+23+20+26+20+20+13+18+6+23+24}{15}$
$\mathrm{M}_{\mathrm{pl}}=\frac{286}{15}=19.06$

## Item 2

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 2}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+19+25+10+24+23+20+26+20+20+13+18+6+23+2}{15}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{286}{15}=19.06
$$

## Item 3

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 3}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+19+25+23+24+23+20+26+24+23+20}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{242}{11}=22$

## Item 4

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 4}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+19+25+23+24+23+20+26+24+23+20}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{242}{11}=22$

## Item 5

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 5}$
$\mathrm{M}_{\mathrm{pl}}=\frac{13+19+25+10+23+24+20+26+6+23+24}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{213}{11}=19.36$

## Item 6

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 6}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 7

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 7}$
$\mathrm{M}_{\mathrm{pl}}=\frac{10+23+24+17+7+6+24}{7}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{111}{7}=15.85
$$

## Item 8

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 8}$
$\mathrm{M}_{\mathrm{pl}}=\frac{26+17+7+18+24}{5}$
$\mathrm{M}_{\mathrm{pl}}=\frac{82}{5}=16.4$

## Item 9

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 9}$
$\mathrm{M}_{\mathrm{pl}}=\frac{12+23+14+23}{4}$
$\mathrm{M}_{\mathrm{pl}}=\frac{72}{4}=18$

## Item 10

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 10}$
$\mathrm{M}_{\mathrm{pl}=} \frac{15+12+25+23+26}{5}$
$\mathrm{M}_{\mathrm{pl}}=\frac{101}{5}=20.2$

## Item 11

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 12

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 12}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+13+19+12+25+23+24+23+24+20+20+10+7+23+24+20+26+17}{18}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{345}{18}=19.16
$$

## Item 13

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 13}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+13+19+12+25+23+24+23+24+20+20+10+7+23+24+20+26+17}{18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{345}{18}=19.16$

## Item 14

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 14}$
$\mathrm{M}_{\mathrm{pl}=} \frac{5+13+19+12+25+23+24+23+24+20+20+10+7+23+24+20+26+17}{18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{345}{18}=19.16$

## Item 15

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 15}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 16

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 17

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 17}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20
$$

## Item 18

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 18}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 19

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 19}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+13+19+25+23+24+23+14+20+26+17+20+20+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{320}{16}=20$

## Item 20

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 20}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+12+25+10+23+26+17+20+20+10+5+18+23+24+24+23}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{295}{16}=18.43$

## Item 21

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 21}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+12+25+10+23+26+17+20+20+10+5+18+23+24+24+23}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{295}{16}=18.43$

## Item 22

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents' scorethattrueitemanswer }}{n 22}$
$\mathrm{M}_{\mathrm{pl}}$
$\underline{15+11+19+3+12+25+10+24+23+14+23+20+26+17+20+20+10+5+18+6+23+5+24}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{363}{23}=15.78
$$

## Item 23

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 23}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+11+19+3+12+25+10+24+23+14+20+26+20+20+10+5+18+7+23+5+24}{21}$
$\mathrm{M}_{\mathrm{pl}}=\frac{331}{21}=15.76$

## Item 24

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 24}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+11+3+12+24+23+14+20+26+20+7+18+25+5}{14}$
$\mathrm{M}_{\mathrm{pl}}=\frac{246}{14}=17.57$

## Item 25

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 25}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+25+10+23+24+23+26+20+18+5+24}{11}$
$\mathrm{M}_{\mathrm{pl}}=\frac{190}{11}=17.27$

## Item 26

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 26}$
$\mathrm{M}_{\mathrm{pl}=} \frac{15+12+25+10+23+24+23+26+17+20+20+10+5+18+23+24}{16}$
$\mathrm{M}_{\mathrm{pl}}=\frac{295}{16}=18.43$

## Item 27

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 27}$
$\mathrm{M}_{\mathrm{pl}=} \frac{19+25+20+26+23}{5}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{113}{5}=22.6
$$

## Item 28

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 28}$
$\mathrm{M}_{\mathrm{pl}}=\frac{11+19+3+12+25+23+24+23+20+26+17+20+10+18+23+5+24}{17}$
$\mathrm{M}_{\mathrm{pl}}=\frac{303}{17}=17.82$

## Item 29

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 29}$
$\mathrm{M}_{\mathrm{pl}}=\frac{13+23+20+36}{4}$
$\mathrm{M}_{\mathrm{pl}}=\frac{92}{4}=23$

## Item 30

$\mathrm{M}_{\mathrm{pl}}=\frac{\text { totalscoreofstudents'scorethattrueitemanswer }}{n 30}$
$\mathrm{M}_{\mathrm{pl}}=\frac{15+19+25+10+24+23+20+26+20+20+13+18+6+23+24}{15}$

$$
\mathrm{M}_{\mathrm{pl}}=\frac{286}{15}=19.06
$$

4. Calculation of the formulation $\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$

$$
\mathrm{r}_{\mathrm{pbi}}=0.897 \times 0.81=0.726
$$

## Item 1

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{19.06-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{3.34}{7} \sqrt{1.5}$
$r_{p b i}=0.477 \times 1.22=0.5819$

## Item 2

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{19.06-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$r_{p b i}=\frac{3.34}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.477 \times 1.22=0.5819$

## Item 5

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{19.36-15.72}{7} \sqrt{\frac{0.4}{0.6}}$
$r_{\mathrm{pbi}}=\frac{3.64}{7} \sqrt{0.6}$
$\mathrm{r}_{\mathrm{pbi}}=0.52 \times 0.81=0.4212$

## Item 6

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745$

## Item 7

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.85-15.72}{7} \sqrt{\frac{0.3}{0.7}}$
$r_{\mathrm{pbi}}=\frac{0.13}{7} \sqrt{0.42}$
$\mathrm{r}_{\mathrm{pbi}}=0.0185 \times 0.65=0.0120$

## Item 8

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{16.4-15.72}{7} \sqrt{\frac{0.2}{0.8}}$
$r_{\mathrm{pbi}}=\frac{0.68}{7} \sqrt{0.25}$
$\mathrm{r}_{\mathrm{pbi}}=0.097 \times 0.5=0.0485$

## Item 9

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{18-15.72}{7} \sqrt{\frac{0.2}{0.8}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{2.28}{7} \sqrt{0.25}$
$\mathrm{r}_{\mathrm{pbi}}=0.32 \times 0.5=0.16$

## Item 10

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20.2-15.72}{7} \sqrt{\frac{0.2}{0.8}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.48}{2} \sqrt{0.25}$
$\mathrm{r}_{\mathrm{pbi}}=0.64 \times 0.5=0.32$

## Item 11

$$
\begin{aligned}
& \mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{20-15.72}{7} \sqrt{\frac{06}{0.4}} \\
& \mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5} \\
& \mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745
\end{aligned}
$$

## Item 12

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{19.16-15.72}{7} \sqrt{\frac{0.7}{0.3}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{3.44}{7} \sqrt{2.33}$

## Item 13

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{19.16-15.72}{7} \sqrt{\frac{0.7}{0.3}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{3.44}{7} \sqrt{2.33}$
$\mathrm{r}_{\mathrm{pbi}}=0.491 \times 1.5=0.7365$

## Item 14

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{19.16-15.72}{7} \sqrt{\frac{0.7}{0.3}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{3.44}{7} \sqrt{2.33}$
$\mathrm{r}_{\mathrm{pbi}}=0.491 \times 1.5=0.7365$

## Item 15

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745$

## Item 16

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745$

## Item 17

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20-15.724}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745$

## Item 18

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{20-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{4.28}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.611 \times 1.22=0.745$
$\mathrm{r}_{\mathrm{pbi}}=\frac{2.71}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.38 \times 1.22=0.4636$

## Item 21

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{18.43-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{2.71}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.38 \times 1.22=0.4636$

## Item 22

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.78-15.72}{7} \sqrt{\frac{0.9}{0.1}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.06}{7} \sqrt{9}$
$\mathrm{r}_{\mathrm{pbi}}=0.0085 \times 3=0.0255$

## Item 23

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{15.76-15.72}{7} \sqrt{\frac{0.8}{0.2}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{0.04}{7} \sqrt{4}$
$\mathrm{r}_{\mathrm{pbi}}=0.005 \times 2=0.01$

## Item 24

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{17.57-15.72}{7} \sqrt{\frac{0.6}{0.4}}$

$$
\begin{array}{ll}
\mathrm{r}_{\mathrm{pbi}}=\frac{1.85}{7} \sqrt{1.5} & \mathrm{r}_{\mathrm{pbi}}=\frac{2.1}{7} \sqrt{2.32} \\
\mathrm{r}_{\mathrm{pbi}}=0.264 \times 1.22=0.322 & \mathrm{r}_{\mathrm{pbi}}=0.3 \times 1.5=0.45
\end{array}
$$

## Item 25

$\mathrm{r}_{\mathrm{pbi}}=\frac{\mathrm{M}_{\mathrm{p}-\mathrm{M}_{\mathrm{t}}}}{\mathrm{SD}_{\mathrm{t}}} \sqrt{\frac{\mathrm{p}}{\mathrm{q}}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{17.27-15.72}{7} \sqrt{\frac{0.4}{0.6}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{1.55}{7} \sqrt{0.6}$
$r_{p b i}=0.221 \times 0.816=0.180$

## Item 26

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{18.43-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$r_{\mathrm{pbi}}=\frac{2.71}{7} \sqrt{1.5}$
$\mathrm{r}_{\mathrm{pbi}}=0.38 \times 1.22=0.4636$

## Item 29

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{23-15.72}{7} \sqrt{\frac{0.2}{0.8}}$
$r_{p b i}=\frac{7.28}{7} \sqrt{0.25}$
$\mathrm{r}_{\mathrm{pbi}}=1.04 \times 0.5=0.52$

## Item 30

$r_{p b i}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{p b i}=\frac{19.06-15.72}{7} \sqrt{\frac{0.6}{0.4}}$
$r_{\mathrm{pbi}}=\frac{3.34}{7} \sqrt{0.6}$
$\mathrm{r}_{\mathrm{pbi}}=0.477 \times 0.816=0.389$

## Item 27

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$\mathrm{r}_{\mathrm{pbi}}=\frac{22.6-15.72}{7} \sqrt{\frac{0.2}{0.8}}$
$r_{\mathrm{pbi}}=\frac{6.88}{7} \sqrt{0.25}$
$\mathrm{r}_{\mathrm{pbi}}=0.98 \times 0.5=0.49$

## Item 28

$\mathrm{r}_{\mathrm{pbi}}=\frac{M_{p-M_{t}}}{S D_{t}} \sqrt{\frac{p}{q}}$
$r_{\mathrm{pbi}}=\frac{17.82-15.72}{7} \sqrt{\frac{0.7}{0.3}}$

## Appendix 13

Table Validity of Post-test

| No | $\mathrm{M}_{\mathrm{p}}$ | $\mathrm{M}_{\mathrm{t}}$ | $\mathrm{SD}_{\mathrm{t}}$ | p | Q | $\mathrm{r}_{\mathrm{pbi}}=\frac{\mathrm{M}_{\mathrm{p}-\mathrm{M}_{\mathrm{t}}}}{\mathrm{SD}_{\mathrm{t}}} \sqrt{\frac{\mathrm{p}}{\mathrm{q}}}$ | $r_{t} \text { on } 5 \%$ <br> significant | Interpretation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 19.06 | 15.72 | 7 | 0.6 | 0.4 | 0.5819 | 0.396 | Valid |
| 2. | 19.06 | 15.72 | 7 | 0.6 | 0.4 | 0.5819 | 0.396 | Valid |
| 3. | 22 | 15.72 | 7 | 0.4 | 0.6 | 0.726 | 0.396 | Valid |
| 4. | 22 | 15.72 | 7 | 0.4 | 0.6 | 0.726 | 0.396 | Valid |
| 5. | 19.36 | 15.72 | 7 | 0.4 | 0.6 | 0.412 | 0.396 | Valid |
| 6. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 7. | 15.85 | 15.72 | 7 | 0.3 | 0.7 | 0.0120 | 0.396 | Invalid |
| 8. | 16.4 | 15.72 | 7 | 0.2 | 0.8 | 0.045 | 0.396 | Invalid |
| 9. | 18 | 15.72 | 7 | 0.2 | 0.8 | 0.16 | 0.396 | Invalid |
| 10. | 20.2 | 15.72 | 7 | 0.2 | 0.8 | 0.32 | 0.396 | Invalid |
| 11. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 12. | 19.16 | 15.72 | 7 | 0.7 | 0.3 | 0.7365 | 0.396 | Valid |
| 13. | 19.16 | 15.72 | 7 | 0.7 | 0.3 | 0.7365 | 0.396 | Valid |
| 14. | 19.16 | 15.72 | 7 | 0.7 | 0.3 | 0.7365 | 0.396 | Valid |
| 15. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 16. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 17. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 18. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 19. | 20 | 15.72 | 7 | 0.6 | 0.4 | 0.745 | 0.396 | Valid |
| 20. | 18.43 | 15.72 | 7 | 0.6 | 0.4 | 0.4636 | 0.396 | Valid |


| 21. | 18.43 | 15.72 | 7 | 0.6 | 0.4 | 0.4636 | 0.396 | Valid |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22. | 15.78 | 15.72 | 7 | 0.9 | 0.1 | 0.0255 | 0.396 | Invalid |
| 23. | 15.76 | 15.72 | 7 | 0.8 | 0.2 | 0.01 | 0.396 | Invalid |
| 24. | 17.57 | 15.72 | 7 | 0.6 | 0.4 | 0.322 | 0.396 | Invalid |
| 25. | 17.27 | 15.72 | 7 | 0.4 | 0.6 | 0.180 | 0.396 | Invalid |
| 26. | 18.43 | 15.72 | 7 | 0.6 | 0.4 | 0.4636 | 0.396 | Valid |
| 27. | 22.6 | 15.72 | 7 | 0.2 | 0.8 | 0.49 | 0.396 | Valid |
| 28. | 17.82 | 15.72 | 7 | 0.7 | 0.3 | 0.45 | 0.396 | Valid |
| 29. | 23 | 15.72 | 7 | 0.2 | 0.8 | 0.52 | 0.396 | Valid |
| 30. | 19.06 | 15.72 | 7 | 0.6 | 0.4 | 0.389 | 0.396 | Invalid |

## Appendix 15

## Reliability of Post Test

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

$$
\begin{aligned}
& \mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{s_{t^{2}}-\sum p q}{s_{t^{2}}}\right) \\
& \mathrm{N}=25 \\
& \sum \mathrm{Xt}=393 \\
& \sum \mathrm{Xt}^{2}=7413
\end{aligned}
$$

$$
\sum \mathrm{pq}=6.23
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=\sum \mathrm{Xt}^{2}-\left(\frac{\sum \mathrm{xt}}{N}\right)^{2}
$$

$$
=7413-\left(\frac{393}{25}\right)^{2}=7413-15.72^{2}=7413-247.11=7165.89
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=\frac{\sum \mathrm{Xt} 2}{N}=\frac{7165.89}{25}
$$

$$
\mathrm{S}_{\mathrm{t}}^{2}=286.6356
$$

$$
\mathrm{R}_{11}=\left(\frac{n}{n-1}\right)\left(\frac{s_{t^{2}}-\sum p q}{s_{t^{2}}}\right)
$$

$$
\mathrm{R}_{11}=\left(\frac{25}{25-1}\right)\left(\frac{286.6356-6.23}{286.6356}\right)=\left(\frac{25}{24}\right)\left(\frac{280.4}{286.6356}\right)
$$

$$
=(1.04)(0.99) \quad=1.03\left(r_{11}>0.70=\text { reliable }\right)
$$

## Appendix 16

## RESULT OF NORMALITY TEST IN PRE TEST

## RESULT OF THE NORMALITY TEST OF XA IN PRE-TEST

1. The score of XA class in pre test from low score to high score:

2. High $=70$

Low $=30$
Range = High - Low

$$
=70-30
$$

$$
=40
$$

3. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (26) \\
& =1+3,3(1,41) \\
& =1+4,65 \\
& =5.65 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { totalofclass }} \quad=\frac{40}{6}=7$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $30-36$ | 6 | 33 | +2 | 12 | 4 | 24 |
| $37-46$ | 4 | 41.5 | +1 | 8 | 1 | 4 |
| $47-53$ | 3 | $\mathbf{5 0}$ | 0 | 0 | 0 | 0 |
| $54-60$ | 9 | 57 | -1 | -9 | 1 | 9 |
| $61-67$ | 0 | 64 | -2 | 0 | 4 | 0 |
| $68-74$ | 4 | 71 | -3 | -12 | 9 | 36 |
| $i=7$ | 26 | - | - | -1 | - | 73 |

$M x=M^{1}+i \frac{\Sigma f x^{1}}{N}$

$$
\begin{aligned}
& =50+7\left(\frac{-1}{26}\right) \\
& =50+7(-0.03) \\
& =50+(-0.21) \\
& =49.79
\end{aligned}
$$

$$
\begin{aligned}
\mathrm{SD}_{\mathrm{t}}=i & \sqrt{\frac{\sum f x^{\prime 2}}{n}-\left(\frac{\sum f x \prime}{n}\right)^{2}} \\
& =7 \sqrt{\frac{73}{26}-\left(\frac{-1}{26}\right)^{2}} \\
& =7 \sqrt{2.80-(-0,03)^{2}} \\
& =7 \sqrt{2.80-0.0009} \\
& =7 \sqrt{2.79} \\
& =7 \times 1.67=11.69
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real <br> Upper <br> Limit | Z - Score | Limit of <br> Large of the <br> Area | Large of <br> area | $\mathrm{f}_{\mathrm{h}}$ | $\mathrm{f}_{0}$ | $\underline{\left(\mathrm{f}_{0}-\mathrm{f}_{\mathrm{h}}\right)}$ <br> $\mathrm{f}_{\mathrm{h}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $68-74$ | 74.5 | 2.11 | 0,4826 | 0.04 | 1.04 | 4 | 2.84 |
| $61-67$ | 67.5 | 1.51 | 0.4345 | 0.11 | 2.86 | 0 | -1 |
| $54-60$ | 60.5 | 0.91 | 0.3186 | 0.19 | 4.94 | 9 | 0.82 |
| $47-53$ | 53.5 | 0,31 | 0.1217 | 0.01 | 0.26 | 3 | 10.53 |
| $37-46$ | 46.5 | -0.28 | 0.1103 | -0.26 | -6.76 | 4 | -14.15 |
| $30-36$ | 36.5 | -1.13 | 0.3708 | $-0,07$ | -1.82 | 6 | -4.29 |
|  | 30.5 | -1.65 | 0.4505 |  |  |  |  |

Based on the table above, the reseracher found that $\mathrm{x}^{2}$ count $=-5.25$ while $\mathrm{x}_{\text {table }}^{2}=$, cause $\mathrm{x}^{2}{ }_{\text {count }}<\mathrm{x}_{\text {table }}^{2}(-5.25<11.070)$ with degree of freedom ( dk ) $=6-1=5$ and significant level $\alpha=5 \%$. So distribution of XA class (pre-test) is normal.
6. Median

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $30-36$ | 6 | 6 |
| 2 | $37-46$ | 4 | 10 |
| 3 | $47-53$ | 3 | 13 |
| 4 | $\mathbf{5 4 - 6 0}$ | 9 | 22 |
| 5 | $61-67$ | 0 | 22 |
| 6 | $68-74$ | 4 | 26 |

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

$$
\begin{array}{ll}
\mathrm{Bb} & =53.5 \\
\mathrm{~F} & =12 \mathrm{~s} \\
\mathrm{fm} & =4 \\
\mathrm{i} & =9 \\
\mathrm{n} & =26 \mathrm{~S} \\
1 / 2 \mathrm{n} & =13 \mathrm{~S}
\end{array}
$$

So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right) \\
& =53.5+9\left(\frac{13-12}{4}\right)
\end{aligned}
$$

$$
=53.5+9(0,25)
$$

$$
=53.5+2.25
$$

$$
=55.75
$$

7. Modus

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $30-36$ | 6 | 6 |
| 2 | $37-46$ | 4 | 10 |
| 3 | $43-53$ | 3 | 13 |
| 4 | $\mathbf{5 4 - 6 0}$ | 9 | 22 |


| 5 | $61-67$ | 0 | 22 |
| :--- | :--- | :--- | :--- |
| 6 | $68-74$ | 4 | 26 |

$\mathrm{M}_{\mathrm{o}} \quad=L+\frac{d_{1}}{d_{1}+d_{2}} i$
$\mathrm{L}=53.5$
$\mathrm{d}_{1}=6$
$\mathrm{d}_{2}=4$
i $=9$
So,

$$
\begin{aligned}
\mathrm{M}_{\mathrm{o}} & =53.5+\frac{6}{6+4} 9 \\
& =53.5+0.6(9) \\
& =53.5+5.4 \\
& =58.9
\end{aligned}
$$

## RESULT OF THE NORMALITY TEST OF XB IN PRE-TEST

1. The score of XB class in pre test from low score to high score:

| 15 | 15 | 20 | 20 | 25 | 25 | 30 | 30 | 35 | 35 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 35 | 40 | 40 | 40 | 40 | 40 | 45 | 45 | 50 | 50 |
| 60 | 60 | 60 | 65 | 65 | 65 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

2. High $=65$

Low $=15$
Range = High - Low
$=65-15$
$=50$
3. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (26) \\
& =1+3,3(1,41) \\
& =1+4.65 \\
& =5.65 \\
& =6
\end{aligned}
$$

4. Length of Classes $=\frac{\text { range }}{\text { totalofclass }}=\frac{50}{6}=8,33=8$
5. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $15-23$ | 4 | 18.5 | +3 | 12 | 9 | 36 |
| $24-31$ | 4 | 26.5 | +2 | 8 | 4 | 8 |
| $32-39$ | 3 | 34.5 | +1 | 3 | 1 | 3 |
| $40-47$ | 8 | $\mathbf{4 2 . 5}$ | 0 | 0 | 0 | 0 |
| $48-49$ | 2 | 50.5 | -1 | -2 | 1 | 4 |
| $56-63$ | 3 | 58.5 | -2 | -6 | 4 | 8 |
| $64-71$ | 2 | 66.5 | -3 | -6 | 9 | 9 |
| $i=8$ | 26 | - | - | 9 | - | 68 |

$$
\begin{aligned}
M x & =M^{1}+i \frac{\Sigma f x^{1}}{N} \\
& =42.5+8\left(\frac{9}{26}\right) \\
& =42.5+8(0.34) \\
& =42.5+(2.72) \\
& =45.22
\end{aligned}
$$

$$
\mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\sum f x^{2}}{n}-\left(\frac{\sum f x \prime}{n}\right)^{2}}
$$

$$
=8 \sqrt{\frac{68}{26}-\left(\frac{9}{26}\right)^{2}}
$$

$$
=8 \sqrt{2.61-(0.34)^{2}}
$$

$$
=8 \sqrt{2.61-0.68}
$$

$$
=8 \sqrt{1.93}
$$

$$
=8 \times 1.38=11.04
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real <br> Upper | Z-Score | Limit of <br> Large of the | Large of <br> area | $f_{h}$ | $f_{0}$ | $\frac{\left(f_{0}-f_{h}\right)}{f_{h}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |


|  | Limit |  | Area |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $64-71$ | 71.5 | 2.38 | 0.4913 | 0.04 | 1.04 | 2 | -0.03 |
| $56-63$ | 63.5 | 1.65 | 0.4505 | 0.12 | 3.12 | 3 | -0.35 |
| $48-55$ | 55.5 | 0.92 | 0.3212 | 0.24 | 6.24 | 2 | -0.35 |
| $40-47$ | 47.5 | 0.20 | 0.0793 | -0.11 | -2.86 | 8 | -4.17 |
| $32-39$ | 39.5 | -0.51 | 0.1950 | -0.19 | -4.94 | 3 | -1.60 |
| $24-31$ | 31.5 | -1.24 | 0.3925 | -0.08 | -2.08 | 4 | -2.92 |
| $15-23$ | 23.5 | -1.96 | 0.4750 |  |  | 4 |  |
|  | 14.5 |  |  |  |  |  |  |

Based on the table above, the reseacher found that $\mathrm{x}^{2}$ count $=-9.42$ while $\mathrm{x}_{\text {table }}^{2}=$, cause $\mathrm{x}^{2}{ }_{\text {count }}<\mathrm{x}_{\text {table }}^{2}(-9.42<11.070)$ with degree of freedom (dk) $=6-1=5$ and significant level $\alpha=5 \%$. So distribution of XB class (pre-test) is normal.
6. Median

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $15-23$ | 4 | 4 |
| 2 | $24-31$ | 4 | 8 |
| 3 | $32-39$ | 3 | 11 |
| 4 | $\mathbf{4 0}-\mathbf{4 7}$ | 8 | 19 |
| 5 | $48-55$ | 2 | 21 |
| 6 | $56-63$ | 3 | 24 |
| 7 | $64-71$ | 2 | 26 |

Position of Me in the interval of classes is number 4, that:
$\mathrm{Bb}=39.5$
$\mathrm{F}=11$
$\mathrm{fm}=8$
i $=8$
$\mathrm{n}=26$
$1 / 2 \mathrm{n}=13$
So :

$$
\begin{aligned}
\mathrm{Me} & =\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right) \\
& =39.5+8\left(\frac{13-11}{8}\right)
\end{aligned}
$$

$=39.5+8$ (0.25)
$=39.5+2$
$=41.5$
7. Modus

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $15-23$ | 4 | 4 |
| 2 | $24-31$ | 4 | 8 |
| 3 | $32-39$ | 3 | 11 |
| 4 | $\mathbf{4 0}-\mathbf{4 7}$ | 8 | 19 |
| 5 | $48-55$ | 2 | 21 |
| 6 | $56-63$ | 3 | 24 |
| 7 | $64-71$ | 2 | 26 |

$\mathrm{M}_{\mathrm{o}} \quad=L+\frac{d_{1}}{d_{1}+d_{2}} i$
$\mathrm{L}=39.5$
$\mathrm{d}_{1}=5$
$\mathrm{d}_{2}=4$
i $=8$
So,
$\mathrm{M}_{\mathrm{o}} \quad=39.5+\frac{5}{5+4} 8$
$=39.5+0.55(8)$
$=39.5+4.4$
$=43.9$

## Appendix 17

## HOMOGENEITY TEST (PRE-TEST)

Calculation of parameter to get variant of the first class as experimental class sample and variant of the second class as experimental class sample are used homogeneity test by using formula:
$S^{2}=\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)}$
Hypotheses:
$\mathrm{H}_{0} \quad: \delta_{1}^{2}=\delta_{2}^{2}$
$\mathrm{H}_{1} \quad: \delta_{1}^{2} \neq \delta_{2}^{2}$
A. Variant of the XA class is:

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1. | 30 | 900 |
| 2. | 30 | 900 |
| 3. | 30 | 900 |
| 4. | 35 | 1225 |
| 5. | 35 | 1225 |
| 6. | 35 | 1225 |
| 7. | 40 | 1600 |
| 8. | 40 | 1600 |
| 9. | 45 | 2025 |
| 10. | 45 | 2025 |
| 11. | 50 | 3500 |
| 12. | 50 | 3500 |
| 13. | 50 | 3500 |
| 14. | 55 | 3025 |
| 15. | 55 | 3025 |
| 16. | 55 | 3025 |
| 17. | 55 | 3025 |
| 18. | 55 | 3025 |
| 19. | 60 | 3600 |
| 20. | 60 | 3600 |
| 21. | 60 | 3600 |
| 22. | 60 | 3600 |
| 23. | 70 | 4900 |
| 24. | 70 | 4900 |
| 25. | 70 | 4900 |
| 26. | 70 | 4900 |
| Total | 1310 | 73250 |
|  |  |  |

n $=26$
$\sum x i=1310$
$\sum_{x i} 2=73250$
So:

$$
\begin{aligned}
S^{2} & =\frac{n \sum x i^{2}-\left(\sum x i\right)}{n(n-1)} \\
& =\frac{26(73250)-(1310)^{2}}{26(26-1)} \\
& =\frac{1904500-1716100}{26(25)} \\
& =\frac{188400}{650} \\
& =289.84
\end{aligned}
$$

B. Variant of the XB class is:

| NO | Xi | $\mathbf{X i}{ }^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 1. | 15 | 225 |
| 2. | 15 | 225 |
| 3. | 20 | 400 |
| 4. | 20 | 400 |
| 5. | 25 | 625 |
| 6. | 25 | 625 |
| 7. | 30 | 900 |
| 8. | 30 | 900 |
| 9. | 35 | 1225 |
| 10. | 35 | 1225 |
| 11. | 35 | 1225 |
| 12. | 40 | 1600 |
| 13. | 40 | 1600 |
| 14. | 40 | 1600 |
| 15. | 40 | 1600 |
| 16. | 40 | 1600 |
| 17. | 45 | 2025 |
| 18. | 45 | 2025 |
| 19. | 50 | 2500 |
| 20. | 50 | 2500 |
| 21. | 60 | 3600 |
| 22. | 60 | 3600 |
| 23. | 60 | 3600 |
| 24. | 65 | 4225 |
| 25. | 65 | 4225 |
| 26. | 65 | 4225 |
| Total | 1050 | 47275 |

$$
\begin{aligned}
& \mathrm{N}=26 \\
& \sum x i=1050
\end{aligned}
$$

$$
\sum_{x i} 2=47275
$$

So:

$$
\begin{aligned}
S^{2} & =\frac{n \Sigma x i^{2}-\left(\sum x i\right)}{n(n-1)} \\
& =\frac{26(47275)-(1050)^{2}}{26(26-1)} \\
& =\frac{1229150-1102500}{26(25)} \\
& =\frac{126650}{650} \\
& =194.84
\end{aligned}
$$

The Formula was used to test the hypothesis was:

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

XA and XB :

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

So:

$$
\begin{aligned}
\mathrm{F}= & \frac{289.84}{194.84} \\
& =1.48
\end{aligned}
$$

After doing the calculation, researcher found that $\mathrm{F}_{\text {count }}=1.48$. It had been compared to $\mathrm{F}_{\text {table }}$ with $\alpha 5 \%$ and dk numerator and deminator were same ( $\mathrm{n}_{1}$ and $\mathrm{n}_{2}=$ $26 ; \mathrm{dk}=26-1=25$ ). From the distribution list F , researcher found that $\mathrm{F}_{\text {table }}=2.71$, so $\mathrm{F}_{\text {count }}<\mathrm{F}_{\text {table }}(1.48<2.71)$. It could be concluded that there is no difference variant between the XA class and XB class. It means that the variant is homogenous.

## Appendix 18

## RESULT OF NORMALITY TEST IN POST TEST

## RESULT OF THE NORMALITY TEST OF XA IN POST-TEST

8. The score of XA class in post test from low score to high score:

| 65 | 65 | 65 | 70 | 70 | 70 | 75 | 75 | 75 | 80 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 80 | 80 | 85 | 85 | 85 | 85 | 85 | 85 | 90 | 90 |
| 90 | 90 | 95 | 95 | 95 | 95 |  |  |  |  |

9. High $=95$

Low $=65$
Range = High - Low

$$
=95-65
$$

$$
=30
$$

10. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (26) \\
& =1+3,3(1,41) \\
& =1+4,65 \\
& =5.65 \\
& =6
\end{aligned}
$$

11. Length of Classes $=\frac{\text { range }}{\text { totalofclass }}=\frac{30}{6}=5$
12. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{\mathbf{2}}$ | $\mathrm{fx}^{\mathbf{2}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $65-69$ | 3 | 67 | +4 | 12 | 16 | 48 |
| $70-74$ | 3 | 72 | +3 | 9 | 9 | 27 |
| $75-79$ | 3 | 77 | +2 | 6 | 4 | 12 |
| $80-84$ | 3 | 82 | +1 | 3 | 1 | 3 |
| $85-89$ | 6 | $\mathbf{8 7}$ | 0 | 0 | 0 | 0 |
| $90-94$ | 4 | 92 | -1 | -4 | 1 | 4 |
| $95-99$ | 4 | 97 | -2 | -8 | 4 | 16 |
| $i=5$ | 26 | - | - | 18 | - | 94 |

$M x=M^{1}+i \frac{\Sigma f x^{1}}{N}$
$=87+5\left(\frac{18}{26}\right)$
$=87+5(0.69)$

$$
\begin{aligned}
& =87+(3.45) \\
& =90.4
\end{aligned}
$$

$$
\begin{aligned}
\mathrm{SD}_{\mathrm{t}}=i & \sqrt{\frac{\sum f x^{\prime}}{n}-\left(\frac{\sum f x^{\prime}}{n}\right)^{2}} \\
& =5 \sqrt{\frac{94}{26}-\left(\frac{18}{26}\right)^{2}} \\
& =5 \sqrt{3.61-(0.69)^{2}} \\
& =5 \sqrt{3.61-1.38} \\
& =5 \sqrt{2.23} \\
& =5 \times 1.49=7.45
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real <br> Upper <br> Limit | Z-Score | Limit of <br> Large of the <br> Area | Large of <br> area | $\mathrm{f}_{\mathrm{h}}$ | $\mathrm{f}_{0}$ | $\left(\mathrm{f}_{0}-\mathrm{f}_{\mathrm{h}}\right)$ <br> $\mathrm{f}_{\mathrm{h}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $95-99$ | 99.5 | 1.22 | 0.3888 | 0.18 | 4.68 | 4 | -0.13 |
| $90-94$ | 94.5 | 0.55 | 0.2088 | 0.16 | 4.16 | 4 | 0.03 |
| $85-89$ | 89.5 | -0.12 | 0.0478 | -0.23 | -5.98 | 6 | -2.00 |
| $80-84$ | 84.5 | -0.79 | 0.2852 | -0.14 | -3.64 | 3 | -1.82 |
| $75-79$ | 79.5 | -1.46 | 0.4279 | -0.05 | -1.3 | 3 | -3.30 |
| $70-74$ | 74.5 | -2.13 | 0.4834 | 0.07 | 1.82 | 3 | 0.64 |
| $65-69$ | 69.5 | -2.80 | 0.4074 |  |  | 3 |  |

Based on the table above, the reseracher found that $\mathrm{x}^{2}$ count $=-6.58$ while $\mathrm{x}_{\text {table }}^{2}=$, cause $\mathrm{x}^{2}$ count $<\mathrm{x}_{\text {table }}^{2}(-6.58<11.070)$ with degree of freedom $(\mathrm{dk})=6-1=5$ and significant level $\alpha=5 \%$. So distribution of XA class (post-test) is normal.
13. Median

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $65-69$ | 3 | 3 |
| 2 | $70-74$ | 3 | 6 |
| 3 | $75-79$ | 3 | 9 |
| 4 | $80-84$ | 3 | 12 |
| 5 | $\mathbf{8 5}-\mathbf{8 9}$ | 6 | 18 |
| 6 | $90-94$ | 4 | 22 |
| 7 | $95-99$ | 4 | 26 |

Position of Me in the interval of classes is number 5, that:
$\mathrm{Bb}=84.5$
$\mathrm{F} \quad=12$
$\mathrm{fm}=6$
i $\quad=6$
$\mathrm{n}=26$
$1 / 2 \mathrm{n}=13$
So :
$\mathrm{Me} \quad=\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right)$
$=84.5+5\left(\frac{13-12}{6}\right)$
$=84.5+5(0.16)$
$=84.5+0.8$
$=85.3$
14. Modus

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $65-69$ | 3 | 3 |
| 2 | $70-74$ | 3 | 6 |
| 3 | $75-79$ | 3 | 9 |
| 4 | $80-84$ | 3 | 12 |
| 5 | $\mathbf{8 5}-\mathbf{8 9}$ | 6 | 18 |
| 6 | $90-94$ | 4 | 22 |
|  | $95-99$ | 4 | 26 |

$\mathrm{M}_{\mathrm{o}}=L+\frac{d_{1}}{d_{1}+d_{2}} i$
$\mathrm{L}=84.5$
$\mathrm{d}_{1}=3$
$\mathrm{d}_{2} \quad=2$
i $=12$
So,
$\mathrm{M}_{\mathrm{o}} \quad=84.5+\frac{3}{3+2} 5$
$=84.5+0.6(5)$
$=84.5+3$
$=87.5$

## RESULT OF THE NORMALITY TEST OF XB IN POST -TEST

8. The score of XB class in pre test from low score to high score:

| 45 | 45 | 45 | 50 | 50 | 50 | 60 | 60 | 60 | 65 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 65 | 65 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| 70 | 70 | 80 | 80 | 80 | 80 |  |  |  |  |

9. High $=80$

Low $=40$
Range = High - Low

$$
\begin{aligned}
& =80-40 \\
& =40
\end{aligned}
$$

10. Total of Classes $=1+3,3 \log (\mathrm{n})$

$$
\begin{aligned}
& =1+3,3 \log (26) \\
& =1+3,3(1,41) \\
& =1+4.65 \\
& =5.65 \\
& =6
\end{aligned}
$$

11. Length of Classes $=\frac{\text { range }}{\text { totalofclass }}=\frac{40}{6}=6.66=7$
12. Mean

| Interval Class | F | X | x | fx | $\mathrm{x}^{2}$ | $\mathrm{fx}^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $40-46$ | 3 | 43 | +4 | 12 | 16 | 48 |
| $47-53$ | 3 | 50 | +3 | 9 | 9 | 27 |
| $54-60$ | 3 | 57 | +2 | 6 | 4 | 12 |
| $61-66$ | 3 | 63.5 | +1 | 3 | 1 | 3 |
| $67-73$ | 10 | $\mathbf{7 0}$ | 0 | 0 | 0 | 0 |
| $74-80$ | 4 | 77 | -1 | -4 | 1 | 4 |
| $i=7$ | 26 | - | - | 26 | - | 94 |

$M x=M^{1}+i \frac{\Sigma f x^{1}}{N}$

$$
\begin{aligned}
& =69.5+7\left(\frac{26}{26}\right) \\
& =69.5+7(1) \\
& =69.5+(7) \\
& =76.5
\end{aligned}
$$

$\mathrm{SD}_{\mathrm{t}}=i \sqrt{\frac{\sum f x^{\prime}{ }^{2}}{n}-\left(\frac{\sum f x^{\prime}}{n}\right)^{2}}$

$$
\begin{aligned}
& =7 \sqrt{\frac{94}{26}-\left(\frac{26}{26}\right)^{2}} \\
& =7 \sqrt{3.61-(1)^{2}} \\
& =7 \sqrt{3.61-2} \\
& =7 \sqrt{1.61} \\
& =7 \times 1.26=8.82
\end{aligned}
$$

Table of Normality Data Test with Chi Kuadrad Formula

| Interval <br> of Score | Real <br> Upper <br> Limit | Z-Score | Limit of <br> Large of the <br> Area | Large of <br> area | $\mathrm{f}_{\mathrm{h}}$ | $\mathrm{f}_{0}$ | $\frac{\left(\mathrm{f}_{0}-\mathrm{f}_{\mathrm{h}}\right)}{\mathrm{f}_{\mathrm{h}}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $74-80$ | 80.5 | 1.02 | 0.3461 | 0.21 | 5.46 | 4 | -0.26 |
| $67-73$ | 73.5 | -0.34 | 0.1331 | -0.23 | -5.98 | 10 | -2.67 |
| $61-66$ | 66.5 | -1.13 | 0.3708 | -0.09 | -2.34 | 3 | -2.28 |
| $54-60$ | 60.5 | -1.81 | 0.4649 | -0.03 | -0.78 | 3 | -4.84 |
| $47-53$ | 53.5 | -2.60 | 0.4953 | -0.00 | 0 | 3 | 0 |
| $40-46$ | 46.5 | -3.40 | 0.4997 | -0.00 | 0 | 3 | 0 |
|  | 39.5 | -3.90 | 0.5000 |  |  |  |  |

Based on the table above, the reseracher found that $\mathrm{x}^{2}$ count $=-10.05$ while $\mathrm{x}_{\text {table }}^{2}=$, cause $\mathrm{x}^{2}{ }_{\text {count }}<\mathrm{x}_{\text {table }}^{2}(-10.05<11.070)$ with degree of freedom $(\mathrm{dk})=6-1=5$ and significant level $\alpha=5 \%$. So distribution of XB class (post-test) is normal.
13. Median

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $40-46$ | 3 | 3 |
| 2 | $47-53$ | 3 | 6 |
| 3 | $54-60$ | 3 | 9 |
| 4 | $61-66$ | 3 | 12 |
| 5 | $\mathbf{6 7 - 7 3}$ | 10 | 22 |
| 6 | $74-80$ | 4 | 26 |

Position of Me in the interval of classes is number 5, that:
$\mathrm{Bb}=66.5$
$\mathrm{F}=12$
$\mathrm{fm}=10$
i $=10$
$\mathrm{n} \quad=26$
$1 / 2 \mathrm{n}=13$
So :
$\mathrm{Me}=\mathrm{Bb}+\mathrm{i}\left(\frac{n / 2-F}{f m}\right)$
$=66.5+10\left(\frac{13-12}{10}\right)$
$=66.5+10(0.1)$
$=66.5+1$
$=67.5$
14. Modus

| No | Interval | F | Fk |
| :---: | :---: | :---: | :---: |
| 1 | $40-46$ | 3 | 3 |
| 2 | $47-53$ | 3 | 6 |
| 3 | $54-60$ | 3 | 9 |
| 4 | $61-66$ | 3 | 12 |
| 5 | $\mathbf{6 7 - 7 3}$ | 10 | 22 |
| 6 | $74-80$ | 4 | 26 |

$\mathrm{M}_{\mathrm{o}} \quad=L+\frac{d_{1}}{d_{1}+d_{2}} i$
$\mathrm{L}=66.5$
$\mathrm{d}_{1}=3$
$\mathrm{d}_{2}=6$
i $=12$
So,
$M_{o}=66.5+\frac{3}{3+6} 10$
$=66.5+0.33$ (10)
$=66.5+3.3$
$=69.8$

## Appendix 19

## HOMOGENEITY TEST (POST-TEST)

Calculation of parameter to get variant of the first class as experimental class sample and variant of the second class as experimental class sample are used homogeneity test by using formula:
$S^{2}=\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)}$
Hypotheses:
$\mathrm{H}_{0} \quad: \delta_{1}^{2}=\delta_{2}^{2}$
$\mathrm{H}_{1} \quad: \delta_{1}^{2} \neq \delta_{2}^{2}$
C. Variant of the XA class is:

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 27. | 65 | 4225 |
| 28. | 65 | 4225 |
| 29. | 65 | 4225 |
| 30. | 70 | 4900 |
| 31. | 70 | 4900 |
| 32. | 70 | 4900 |
| 33. | 75 | 6400 |
| 34. | 75 | 6400 |
| 35. | 75 | 6400 |
| 36. | 80 | 5625 |
| 37. | 80 | 5625 |
| 38. | 80 | 5625 |
| 39. | 85 | 7225 |
| 40. | 85 | 7225 |
| 41. | 85 | 7225 |
| 42. | 85 | 7225 |
| 43. | 85 | 7225 |
| 44. | 85 | 7225 |
| 45. | 90 | 8100 |
| 46. | 90 | 8100 |
| 47. | 90 | 8100 |
| 48. | 90 | 8100 |
| 49. | 95 | 9025 |
| 50. | 95 | 9025 |
| 51. | 95 | 9025 |
| 52. | 95 | 9025 |
| Total | 2120 | 168075 |
|  |  |  |
|  |  |  |

n $=26$
$\sum x i=2120$
$\sum_{X i} 2=168075$
So:

$$
\begin{aligned}
S^{2} & =\frac{n \Sigma x i^{2}-\left(\sum x i\right)}{n(n-1)} \\
& =\frac{26(168075)-(2120)^{2}}{26(26-1)} \\
& =\frac{4369950-4494400}{26(25)} \\
& =\frac{124450}{650} \\
& =191.46
\end{aligned}
$$

D. Variant of the XB class is:

| $\mathbf{N O}$ | $\mathbf{X i}$ | $\mathbf{X i}^{\mathbf{2}}$ |
| :---: | :---: | :---: |
| 27. | 45 | 2025 |
| 28. | 45 | 2025 |
| 29. | 45 | 2025 |
| 30. | 50 | 2500 |
| 31. | 50 | 2500 |
| 32. | 50 | 2500 |
| 33. | 60 | 3600 |
| 34. | 60 | 3600 |
| 35. | 60 | 3600 |
| 36. | 65 | 4225 |
| 37. | 65 | 4225 |
| 38. | 65 | 4225 |
| 39. | 70 | 4900 |
| 40. | 70 | 4900 |
| 41. | 70 | 4900 |
| 42. | 70 | 4900 |
| 43. | 70 | 4900 |
| 44. | 70 | 4900 |
| 45. | 70 | 4900 |
| 46. | 70 | 4900 |
| 47. | 70 | 4900 |
| 48. | 70 | 4900 |
| 49. | 80 | 6400 |
| 50. | 80 | 6400 |
| 51. | 80 | 6400 |
| 52. | 80 | 6400 |
| Total | 1680 | 111650 |

$$
\begin{aligned}
& \mathrm{N}=26 \\
& \sum x i=1680
\end{aligned}
$$

$$
\sum_{x i} 2=111650
$$

So:

$$
\begin{aligned}
S^{2} & =\frac{n \Sigma x i^{2}-(\Sigma x i)}{n(n-1)} \\
& =\frac{26(111650)-(1680)^{2}}{26(26-1)} \\
& =\frac{2902900-2822400}{26(25)} \\
& =\frac{80500}{650} \\
& =123.84
\end{aligned}
$$

The Formula was used to test the hypothesis was:

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

XA and XB :

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

So:

$$
\begin{aligned}
F & =\frac{123.84}{-454.84} \\
& =-0.27
\end{aligned}
$$

After doing the calculation, researcher found that $\mathrm{F}_{\text {count }}=-0.27$. It had been compared to $\mathrm{F}_{\text {table }}$ with $\alpha 5 \%$ and dk numerator and deminator were same ( $\mathrm{n}_{1}$ and $\mathrm{n}_{2}=$ $26 ; \mathrm{dk}=26-1=25$ ). From the distribution list F , researcher found that $\mathrm{F}_{\text {table }}=2.71$, so $\mathrm{F}_{\text {count }}<\mathrm{F}_{\text {table }}(-0.27<2.71)$. It could be concluded that there is no difference variant between the XA class and XB class. It means that the variant is homogenous.

## Appendix 20

## Score of Experimental Class and Control Class

## Pre Test

a. Pre Test Score of Experimental Class

| No | The Initial Name <br> Of Students (N) | Pre Test |
| :---: | :--- | :---: |
| 1 | AH | 30 |
| 2 | AF | 55 |
| 3 | AN | 45 |
| 4 | AAJ | 55 |
| 5 | DS | 30 |
| 6 | DN | 35 |
| 7 | EM | 35 |
| 8 | ER | 35 |
| 9 | HWN | 30 |
| 10 | II | 40 |
| 11 | IM | 50 |
| 12 | JT | 45 |
| 13 | MAS | 55 |
| 14 | MA | 55 |
| 15 | MAL | 40 |
| 16 | NAK | 55 |
| 17 | NAS | 50 |
| 18 | NYS | 50 |
| 19 | PMK | 70 |
| 20 | PD | 60 |
| 21 | RF | 70 |
| 22 | RS | 60 |
| 23 | VM | 70 |
| 24 | WF | 70 |
| 25 | ISS | 60 |
| 26 | FH | 60 |
|  |  | $\mathbf{1 3 1 0}$ |

## b. Pre Test Score of Control Class

| No | The Initial Name <br> Of Students (N) | Pre-Test |
| :---: | :--- | :---: |
| 1 | ACS | 25 |
| 2 | AAL | 25 |
| 3 | DA | 50 |
| 4 | FNH | 30 |
| 5 | HS | 20 |
| 6 | KJP | 15 |
| 7 | KH | 35 |
| 8 | LMH | 20 |
| 9 | MAD | 30 |
| 10 | ML | 40 |
| 11 | MH | 35 |
| 12 | NFS | 35 |
| 13 | PLW | 15 |
| 14 | PL | 65 |
| 15 | PAS | 45 |
| 16 | PYH | 60 |
| 17 | RH | 60 |
| 18 | RM | 50 |
| 19 | RSS | 65 |
| 20 | RZ | 45 |
| 21 | SMA | 40 |
| 22 | SMK | 40 |
| 23 | SH | 65 |
| 24 | SHP | 60 |
| 25 | SLN | 40 |
| 26 | YAN | 40 |
|  |  | $\mathbf{1 0 5 0}$ |

## Appendix 21

## Score of Experimental Class and Control Class

Post Test
a. Score of Experimental Class Post Test (after Using Small Group Discussion)

| No | The Initial Name <br> Of Students (N) | Post Test |
| :---: | :--- | :---: |
| 1 | AH | 65 |
| 2 | AF | 80 |
| 3 | AN | 75 |
| 4 | AAJ | 75 |
| 5 | DS | 95 |
| 6 | DN | 75 |
| 7 | EM | 85 |
| 8 | ER | 85 |
| 9 | HWN | 90 |
| 10 | II | 70 |
| 11 | IM | 70 |
| 12 | JT | 80 |
| 13 | MAS | 65 |
| 14 | MA | 85 |
| 15 | MAL | 70 |
| 16 | NAK | 85 |
| 17 | NAS | 80 |
| 18 | NYS | 85 |
| 19 | PMK | 85 |
| 20 | PD | 95 |
| 21 | RF | 90 |
| 22 | RS | 65 |
| 23 | VM | 95 |
| 24 | WF | 90 |
| 25 | ISS | 95 |
| 26 | FH | 90 |
|  |  | $\mathbf{2 1 2 0}$ |
|  |  |  |

## b. Post Test Score of Control Class

| No | The Initial Name <br> Of Students (N) | Post-Test |
| :---: | :--- | :---: |
| 1 | ACS | 40 |
| 2 | AAL | 70 |
| 3 | DA | 75 |
| 4 | FNH | 40 |
| 5 | HS | 60 |
| 6 | KJP | 60 |
| 7 | KH | 50 |
| 8 | LMH | 80 |
| 9 | MAD | 50 |
| 10 | ML | 70 |
| 11 | MH | 65 |
| 12 | NFS | 65 |
| 13 | PWL | 65 |
| 14 | PL | 50 |
| 15 | PAS | 40 |
| 16 | PYH | 70 |
| 17 | RH | 75 |
| 18 | RM | 70 |
| 19 | RSS | 70 |
| 20 | RZ | 75 |
| 21 | SMA | 70 |
| 22 | SMK | 75 |
| 23 | SH | 80 |
| 24 | SHP | 80 |
| 25 | SLN | 80 |
| 26 | YAN | 60 |
|  |  | $\mathbf{1 6 8 5}$ |

## Appendix 22

## T-test of the Both Averages in Pre-Test

The formula was used to analyse homogeneity test of the both averages was t-test, that:
$T t=\frac{X_{1}-X_{2}}{\sqrt{\left(\frac{\left(n_{1}-1\right) s_{1}^{2}+\left(n_{2}-1\right) s_{2}^{2}}{n_{1}+n_{2}-2}\right)\left(\frac{1}{n_{1}}+\frac{1}{n_{2}}\right)}}$
$T t=\frac{49.79-45.22}{\sqrt{\left(\frac{(26-1) 289.84+(26-1) 194.84}{26+26-2}\right)\left(\frac{1}{26}+\frac{1}{26}\right)}}$
$T t=\frac{4.57}{\sqrt{\left(\frac{25(289.84)+25(194.84)}{50}\right)\left(\frac{2}{26}\right)}}$
$T t=\frac{4.57}{\sqrt{\left(\frac{7.246+4.871}{50}\right)(0.07)}}$
$T t=\frac{4.57}{\sqrt{(0.24)(0.07)}}$
$T t=\frac{4.57}{\sqrt{0.01}}$
$T t=\frac{4.57}{0.1}$
$T t=45.7$

Based on researcher calculation result of homogeneity test of the both averages, researcher found that $\mathrm{t}_{\text {count }}=45.7$ with opportunity $(1-\alpha)=1-5 \%=95 \%$ and $d \mathrm{k}=\mathrm{n}_{1}+\mathrm{n}_{2}-$ $2=26+26-2=50, \mathrm{t}_{\text {table }}=1.67591$. So, $\mathrm{t}_{\text {count }}<\mathrm{t}_{\text {table }}(45.7<1.67591)$ and $\mathrm{H}_{0}$ is accepted, it means no difference the average between the first class as experimental class and the second class as control class in this research.

## Appendix 23

## T-test of the Both Averages in Post-Test

The formula was used to analyse homogeneity test of the both averages was t-test, that:
$T t=\frac{X_{1}-X_{2}}{\sqrt{\left(\frac{\left(n_{1}-1\right) s_{1}^{2}+\left(n_{2}-1\right) s_{2}^{2}}{n_{1}+n_{2}-2}\right)\left(\frac{1}{n_{1}}+\frac{1}{n_{2}}\right)}}$
$T t=\frac{90.4-76.5}{\sqrt{\left(\frac{(26-1) 191.46+(26-1) 123.84}{26+26-2}\right)\left(\frac{1}{26}+\frac{1}{26}\right)}}$
$T t=\frac{13.9}{\sqrt{\left(\frac{25(191.46)+25(123.84)}{50}\right)\left(\frac{2}{26}\right)}}$
$T t=\frac{13.9}{\sqrt{\left(\frac{4786+3096}{50}\right)(0.07)}}$
$T t=\frac{13.9}{\sqrt{(157.64)(0.07)}}$
$T t=\frac{13.9}{\sqrt{11.03}}$
$T t=\frac{13.9}{3.32}$
$T t=4.18$
Based on researcher calculation result of homogeneity test of the both averages, researcher found that $\mathrm{t}_{\text {count }}=4.18$ with opportunity $(1-\alpha)=1-5 \%=95 \%$ and $d k=n_{1}+n_{2}-$ $2=26+26-2=50, \quad \mathrm{t}_{\text {table }}=1.67591$. So, $\mathrm{t}_{\text {count }}>\mathrm{t}_{\text {table }}(4.18>1.67591)$ and $\mathrm{H}_{\mathrm{a}}$ is accepted, it means there was the difference average between the first class as experimental class and the second class as control class in this research.

## KEMI NTI RIAN AGAMA RIPUIII IK INDONE 3 IA INSIITHI AOAMA IRI AM NE- 2F: II I'AUANGSIDIMPUAN FAKGII IAT: I ARHHYAII IAN II MU KIEGURUAN




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Demikian disampaikan, atas kesediann dan kerjasama yang baik dari Bapak/Ibu kami neapham terima kasih.

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Hal : Izin Penelitian
Penyelesaian Skripsi.

Yth. Kepala SMKS Panca Dharma Padangsidimpuan
Kota Padangsidimpuan

Dengan hormat, bersama ini kami sampaikan bahwa :

| Nama | : Zamila Fitriani Siregar |
| :--- | :--- |
| NIM | $: 1520300041$ |
| Program Studi | : Tadris/Pendidikan Bahasa Inggris |
| Fakultas | : Tarbiyah dan Ilmu Keguruan |
| Alamat | : Perumahan Sidimpuan Indah Lestari |
| adalah Mahasiswa Fakultas Tarbiyah dan Ilmu Keguruan IAIN Padangsidimpuan yang |  |
| sedang menyelesaikan Skripsi dengan Judul "The Effect of Small Group Discussion |  |
| Strategy on Students' Reading Comprehension at Grade X SMKS Panca Dharma |  |
| Padangsidimpuan". |  |

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

Demikian disampaikan, atas kerja sama yang baik diucapkan terimakasih.


# YAYASAN PENDIDIKAN PANCA DHARMA (YPPD) SMK SWASTA PANCA DHARMA <br> (Bisnis dan Manajemen /Tehnologi Informasi dan Komunikasi) <br> Jalan Tapian Nauli No. 35063424065 Kel Aek Tampang Padangsidimpuan <br> NDS : 5307180201 NSS: $\mathbf{3 4 4 0 7 1 0 0 1 0 0 5}$ NPSN : 10212568 STATUS TERAKREDITASI" A " 

SURAT KETERANGAN<br>Nomor :4409/I05.20/SMK.PD.07/PL/2019

ang bertanda tangan dibawah ini Kepala SMK SWASTA PANCA DHARMA Padangsidimpuan penerangkan :

| N a m a | : ZAMILA FITRIANI SIREGAR |
| :--- | :--- |
| N I M | $: 1520300041$ |
| Jurusan | $:$ Tadris / Pendidikan Bahasa Inggris |
| Jenjang | : SI |

dalah benar nama tersebut diatas telah melaksanakan Penelitian di SMK wasta Panca Dharma Padangsidimpuan untuk Penyusunan Skripsi dengan idul
The Effect of Small Group Discussion Strategy on Students, Reading omprehension at Grade $X$ SMK Swasta Panca Dharma adangsidimpuan".
esuai dengan surat Institut Agama Islam Negeri Padangsidimpuan Nomor -/591/In.14/E/TL.00/10/2019.
emikian surat keterangan ini diberikan untık dapat dipergunakan sebaga ana mestinya atas perhatiannya diucapkan terimakasih.



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