# ABSTRACT

**Putri, Citra Fransiska Maharani Eka**, 2015. Brainstorming Technique on *Students' Reading Comprehension Achievement (A Quasi-* Experimental Study to the the Seventh Grade Students of SMPN 1 Sawoo in Academic Year 2014/2015). A thesis, English Department Faculty of Education State Islamic College of Ponorogo (STAIN) Ponorogo. Advisor Mr. Andi Susilo, M. Pd.

Key words: Brainstorming, Reading Comprehension, Reading Achievement

Reading is one of the most important skill that students should master and develop in learning English at Junior High School. Before reading, the teachers should apply appropriates teaching technique as well as method to establish the effectiveness of reading instruction. The teachers can do a variety of pre-reading activities that build background knowledge such as brainstorming technique. Brainstorming is a technique for creating many ideas about a topic and it can be helpful in activating prior knowledge. Braisntorming prepares the students knowledge before they read the whole material. By this technique the students will be more active in reading, the reading lesson will be more interesting and later on will improve their achievement on reading comprehension.

Dealing with the explanation above, it is essential to conduct a research dealing with "Brainstorming Technique on Students' Reading Comprehension Achievement (A Quasi-Experimental Study to the Seventh Grade Students of SMPN 1 Sawoo in Academic Year 2014/2015)". The statement of the problem is "Do the students who are taught by brainstorming technique achieve better score in reading comprehension than those who are not taught by brainstorming technique".

This study employed a quasi experimental research. It was carried at SMPN 1 Sawoo in April 2015. The population of this research were the whole students of VII class consisted of 154 students. The sample was VIIE as an experiment class and VIIC as a control class which consisted of 26 students. The researcher used cluster random sampling as sampling technique. The data were taken by administrating test, interview and documentataion. To analyze data, the researcher used the formula "t" test as procedure of data analysis. There were three steps to do this research. Pre-test, treatment and post-test.

The result of data analysis showed that students' mean scores taking the test before the treatment was only 68.84. After using brainstorming technique students' scores achieved 84.19. It had be found that the comparasion value ($t_0$) between students' reading comprehension achievement who were taught using brainstorming technique and who were not was 6.01. After being consulted with 5% significance level with db=50, that was t index $t_t = 2.01$. Therefore $t_o \geq t_t$, so $H_a$: The students taught using brainstorming technique achieved a better score in reading test than the students not being taught. So, the result showed that the brainstorming technique is effective for teaching reading at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015.

# CHAPTER I

# INTRODUCTION

## A. Background of the Study

Nowadays many kinds of written materials like books, magazines, and newspapers are written in English. Therefore, It is important for students to master and develop reading skill well  because reading has become a part of our daily life.[1] Students should build their reading skills in order that they can read effectively and understand words, sentences, and finally texts. Moreover, reading is considered as one of English skills that educationally the most important thing to be mastered.

In accordance to the reality above, there are two main reasons why people read: the first is for pleasure and the second is for information.[2] If the students know that they can get pleasure from reading like reading stories in their own language, they may be able to make connection that reading in general can provide pleasure. In other hand, we read a book is to get information such as reading to learn English, or reading to get information from magazine or newspaper.  Finally, through reading we can get a lot of information, knowledge, enjoyment and even problem solution. Therefore, the ability to read the text in any form will give a great deal of advantages in our life.

---

[1] Bambang Yudi Cahyono, The Teaching of English Language Skills and English Language Components (Malang: State University of Malang Press, 2010), 42.

[2] Caroline T. Linse, "Practical English Language Teaching," Young Learners, ed. David Nunan  (New York: McGraw-Hill ESL/ELT, 2005), 71.

Beside that, the reason for reading depends very much on the purpose of reading. One of the purposes is to enable students to read and understand the text materials correctly.[3] It means that students are socialised into reading, and the motivation for learning to read is not only (or even primarily) for enjoyment or information, but because the aspiring reader wants to gain access to a 'community' of readers.

Furthermore, we know that reading skill is essential whether in the target of source language. If the students read the text in their own language, it is not really difficult for them to read it. But when they read it in a foreign language, they frequently encounter difficulties in reading. Therefore, students must comprehend their ability to read the text.

Reading comprehension is fundamental for English foreign learners in getting information and knowledge. Students should have mastery on reading skill. Good achievement in reading is important for the students. Students will get information and ideas which can enrich their vocabulary and ideas. In order to produce good reading ability, students needs to use appropriate method/strategies in learning reading.

Reading comprehension strategy is a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension.[4] Teachers should teach ELLs the exact language that

---

[3] D. Nunan, Language Teaching Methodology: Textbook for Teachers (British: Library Cataloguing in Publication Data, 1991), 72.

[4] Danielle S. Mcnamara, Reading Comprehension Strategies: Theories, Interventions, and Technologies (USA: Library of Congress Cataloging in Publication Data, 2006), 6-7.

they will need to talk about what they have read. It is widely asserted that it is highly motivating to essentially tell students.[5]

When reading, students usually make use of background knowledge, vocabulary, grammatical knowledge, and experience with the text. Reading the texts also provides opportunities to study language: vocabulary, grammar, punctuation, and the way we construct sentences, paragraphs and texts.[6] Finally, good reading texts can introduce interesting topics, stimulate discussion, excite imaginative responses and they can improve their reading comprehension ability to read the text.

In teaching reading comprehension, there are three stages that should be done: pre-reading, whilst-reading, and post-reading.[7] Pre-reading stage is activities before reading or before students read a text to build word and background knowledge to improve students' abilities and remember material presented in textbooks. This step is intended to trigger students' comprehension of the text. The teachers normally work on general aspects of the topic to elicit what students already know about the topic and make them ready for the new information.

Before reading, the teachers are also suggested to motivate students through activities that may increase their interest (book talks, dramatic readings, or displays of art related to the text), making the text relevant to students in some ways. It is also important to activate students' background knowledge to the

---

[5] Judie Haynes and Debbie Zacarian, Teaching English Language Learners: Acroos the Content Areas (USA: ASCD, 2010), 73-74.

[6] Jeremy Harmer, How to Teach English (Malaysia: VVP, 1998), 68.

[7] Bambang, The Teaching English Language Skills and English Language Components, 56.

content of the text by discussing what students will read and what they already know about its topic and about the text organization. Students, with some help from the teachers may establish a purpose for reading, identify and discuss difficult words, phrases, and concepts in the text, preview the text (by surveying the title, illustrations, and unusual text structures) to make predictions about its content, think, talk, and write about the topic of the text.

Whilst-reading stage is used to encourage students to be flexible, active readers also to promote a dialogue between the reader and the writer. In the whilst-reading/during reading stage, the teachers can generate appropriate strategies to help students in comprehending the text. Therefore, the stage is mostly dominated with discussions and activities that match students' interest so as to help the teachers gear the activities toward achieving the purpose.

Furthermore, post-reading stage is the last of reading comprehensions and often in the form of questions that follow a text, used to test understanding. In this stage, the students should be able to evaluate the text as a whole to respond to it from a more or less personal point of view. The teachers can conduct such activities such as scanning question, summarizing, learner's purpose, and following-up.

In order to facilitate students' in comprehension the text, the teachers should apply appropriate teaching technique as well as method to establish the effectiveness of reading instruction. It will make easier and enjoyable for students receive the lesson. Because the students' ability to comprehend the content of reading material depends in part on their knowledge about the topic of the reading

selection. So, to increase students' potential comprehension, the teachers can do a variety of pre-reading activities that build background knowledge. In reality it can increase the students' activeness, reading comprehension and achievement. The students are not only easy to understand and remember the materials, but also have a fun classroom.

Among the three stages of teaching reading, pre-reading activity is often neglected or less intensified taught by teachers. This step is mostly taken for granted in the process of teaching reading. This fenomena is also happend in the process of teaching reading at SMPN 1 Sawoo. The result of preliminary study conducted at this school by using interview with the English teacher on 20th April 2015 refill that the teacher less paid attention to involve the students in pre-reading activities. It can be found when the teacher not allowed the students to brainstorm their idea before they read the text. The students difficulties in reading and they also low of vocabularies. The students often forget some materials that the teacher has explained, and the students didn't understand the meaning of the text.

To overcome this problems, teachers are suggested to applied pre-reading activities. They are many pre-reading strategies such as brainstorming, sequencing picture, encouraging the use of dictionary, discussing text type, and predicting the title.[8] From this types of pre-reading activities, Brainstorming technique is very popular and provide benefit much for the students in reading as it is stated by

---

[8] Nurman Antoni, "Exploring EFL Teachers' Strategies in Teaching Reading Comprehension", Available of http://jurnal.upi.edu/file/5-Nurman_Antoni.pdf. retrieved on 19 Nov 2014.

Wallace.[9] This may take the form of giving the class a particular key word or key concept, or it may be a newspaper headline or book title. Students are then invited to call out words and concepts they personally associate with the keyword or words provided by the teacher.

Brainstorming is a technique for creating many ideas about a topic and it can to be helpful in activating prior knowledge. In this activity, students are invited to call out words, knowledge and experience that relevant to the text, relevant language and an expectation meaning. It is mainly the staring point of most of the pre-reading prior knowledge activation strategies. Through this technique, the students are likely to bring all what is in their brain which they may think it is linked to the text's topic. This technique is basically at the core of the process of activating the students already existing schemas.

Brainstorming prepare the students background knowledge before they read the whole material, because the schema would help the reader get better comprehension. And by this technique the students will be more active in reading, the reading lesson will be more interesting and later on will increase their achievement on reading comprehension.

From the facts above, the researcher attempts to investigate the achievement in reading comprehension between students who are taught by using brainstorming technique and who are not taught by using brainstorming technique at the seventh grade of SMPN 1 Sawoo. It is interested in conducting this study because pre-reading activities has not received attention and is often overlooked

---

[9] Perviz Ajideh, "Schema–theory Based Considerations on Pre-reading Activities in ESP Textbooks", The Asian EFL Journal. Teaching Articles. November 2006 Vol 16.

by the teachers. At this school, in practically brainstorming technique has never been applied in teaching reading. Hence, it is essential to conduct this study under the title "Brainstorming technique on students' reading comprehension achievement (a quasi-experimental study to the seventh grade students of SMPN 1 Sawoo in academic year 2014/2015)".

## B. Limitation of the Study

To avoid a deviation of the discussion, this study focus on some concern identified as follow:

1. The subject of the study is the seventh grade students of SMPN 1 Sawoo in academic year 2014/2015.

2. The object of this study is the effectiveness of brainstorming technique on the students' reading comprehension achievement.

3. Brainstorming technique is going to be applied in pre-reading activities.

4. The students' reading comprehension achievement refers to the students' score in reading comprehension test.

## C. Statement of the Problem

Regarding to the background of the study, the statement of the problem is formulated into:

"Do the students who are taught by brainstorming technique achieve better score in reading comprehension than those who are not taught by brainstorming technique at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015".

**D. Objective of the Study**

Related to the statement of the problem above, the objective of this study is described as follows:

"To investigate the difference achievement in reading comprehension between students who are taught by using brainstorming technique and who are not taught by using brainstorming technique at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015."

**E. Significance of the Study**

The result of the study is expected to be able to give contribution in education aspect especially in teaching and learning process like theoritically and practically. The contribution as follow:

1. Theoritically

The result of this study is strengthen the existing theory on the application of Brainstorming technique in teaching pre-reading ativities. And also expected to give treasure in improve quality of education especially in teaching English reading ability.

2. Practically

a. English Teacher

This research is very usefull for the teachers especially for those who are teaching English. This research will be one of the simplest technique to create attractive and active class in English language especially in reading. Besides, the teacher can motivate student for learning English.

b. Students

By using brainstorming technique, the students are expected to pay closer attention to the events and information in the text and are able to break the text down to notice subtitles of plot, action, and resolution. They can encourage to access background knowledge before reading and it can create enjoyable and meaningful learning. As the result, the students are able to increase four language skills, especially for reading skill.

c. Future Researchers

The researcher believes that this writing is still far from perfect. There are many weaknesses that found in this thesis. This researcher hopes that this writing can be "frame of thought" or the starting point for the other researchers to find out the perfect of the study.

**F. Organization of the Thesis**

In order to ease the reader understanding this study, the research report is arranged systematically in which each has interconnection to others. It is highlighted in detail as follows:

Chapter I is the introduction that explains about the whole content of thesis. They are background of the study, limitation of the study, statement of the problem, objectives of the study, significance of the study, and organization of the thesis.

Chapter II presents review of related literature consists of theoretical analysis, previous research finding, theoretical framework, and hypothesis. The

theoretical analysis covers some discussions such as reading: definition of reading, component of reading, reading comprehension, students' reading comprehension achievement, factor that influence students' reading comprehension achievement; reading technique: parts of reading skill, kind of reading skill, the effectiveness of using braistorming technique: definition of braistorming, types of braistorming, the adventages of braistorming, the process of brainstorming in teaching reading comprehension**.**

Chapter III deals with research method; this chapter explains about research design; population and sample; instrument of data collection; technique of data collection; and technique of data analysis.

Chapter IV gives interpretation of research result; this chapter contains of research location; data description; data analysis; discussion and interpretation.

Chapter V presents conclusion: this chapter consist of conclusions and recommendations.

# CHAPTER II

# REVIEW OF RELATED LITERATURES

The review of related literature includes of theoretical background, previous research finding, theoretical framework and hypothesis.

## A. Theoretical Background

## 5. Reading

Reading is something many of us take for granted. We read with what appears to be little effort and little planning. And it is remarkable that so much of the world's population can read. They can read basic forms, read advertisements, read newspapers, and use basic reading skills in their work and daily lives when needed.[10] So, it is also important to recognize that many people around the world read in more than one language. We read something while sitting, others while walking, and others while driving. Reading is not done in a vacuum. It is done within a social context.

## a. Definition of Reading

Reading is a set of skills that involves making sense and deriving meaning from the printed word or symbols and how this ability is used to recognize, understand and interpret words. In order to read, we must be able to decode (sound out) the printed words and also comprehend what we read.[11] Therefore,

---

[10] William Grabe, Reading in a Second Language Moving from Theory to Practice (New York: Cambridge University Press, 2009), 1s.

[11] Caroline T. Linse, "Practical English Language Teaching," Young Learners, ed. David Nunan (New York: McGraw-Hill ESL/ELT, 2005), 69.

reading ability is important for students to analyse and comprehend some text that written in English.

Reading is a dynamic process in which the text elements interact with other factors outside the text: in this case most particularly with the reader's knowledge of the experiential content of the text.[12] It means that the interaction between the reader and the text is more important and relevant than identifying and recalling the actual content of the text. In short, reading is not a linear process, but it is a dynamic activity.

Tarigan states that reading is a process carried out and used by a reader to acquire message that is conveyed by a writer through words or symbols, and the meaning of the words could be seen and known by reader.[13] Finally, reading process can carried out well.

From the definition above, it can be concluded that reading is a process of understanding and picking the meaning of words, ideas, concept and information from the text. Further more, it is said that reading is a process of communication from the writer to the reader.

## b. Components of Reading

Reading is an astoundingly complex cognitive process. While we often think of reading as one singular act, our brains are actually engaging in a number

---

[12] David Nunan, Language Teaching Methodology a Textbook for Teachers (Sydney: Pearson Education Limited, 2000), 70.

[13] Susmiarti, "Improving Students Reading Compreension Through Round Robin Brainstorming Technique (A Classroom Action Research at Eighth Grade Students of SMP Negeri 1 Cilongok in Academic Year 2011/2012)", Undergraduate Theses from JHPTUMP, University of Muhammadiyah, Purwkerto, 2012. (digilib@ump.ac.id). Available at http://digilib.ump.ac.id/gdl.php?mod=browse&op=read&id=jhptump-a-susmiarti-600. Retrieved on 6 March 2015.

of tasks simultaneously each time we sit down with a book. There are five aspects to the process of reading: phonics, phonemic awareness, vocabulary, reading comprehension, and fluency.[14]

1) Phonics

Phonics is the connection between sounds and letter symbols. It is also the combination of these sound-symbol connections to create words. Without phonics, words are simply a bunch of squiggles and lines on a page. Phonics through spelling focuses on connecting sounds with letters in writing. All of the approaches can be taught and used independently or in combination to help young leaders learn to identify new words.

2) Phonemic Awareness

Phonemic awareness is closely related to phonics because both involve the connection between sounds and words. While phonics is the connection between sounds and letters, phonemic awareness is the understanding that words are created from phonemes (small units of sound in language). Phoneme blending requires the reader to connect a series of phonemes together to create a word. This strategy is always used in conjunction with one of the others.

3) Vocabulary

In order to read words we must first know them. Imagine how frustrating and fruitless it would be to read this article if all of the words were unfimiliar to you. There are two primary ways of teaching and learning new vocabulary words. The first is explicit instruction. This involves someone telling you how a word is

---

[14] http://www.k12reader.com/the-five-essential-components-of-reading/. Retrieved on 14 March 2015.

pronounced and what its meaning is. That "someone" might be a teacher, a dictionary, a vocabulary guide or any other resource offering definitions and pronounciations.

4) Fluency

Fluency is a reader's ability to read with speed, accuracy and expression. Thus it requires him to combine and use multiple reading skills at the same time. Fluency is intimately tied to comprehension. A reader must be able to move quickly enough through a text to develop meaning. If he is bogged down reading each individual word, he is not able to create an overall picture in his mind of what the text is saying. Even is the reader is able to move rapidly through a text, if she cannot master the expression associated with the words, the meaning of it will be lost.

5) Reading Comprehension

Reading comprehension is the most complex aspect of reading. It not only involves all of the other four aspects of reading, it also requires the reader to draw upon general thinking skills. When a reader is actively engaged with a text, she is asking and answering questions about the story and summarizing what she has read. Like vocabulary, reading comprehension skills develop and improve over time through instruction and practice.

**c.   Reading Comprehension**

Learning to read well is a long-term developmental process. At the end point, the proficient adult reader can read a variety of materials with ease and

interest, can read for varying purposes, and can read with comprehension even when the material is neither easy to understand nor intrinsically interesting.

Comprehension requires the reader to remember what has been read so it can be connected to new information and integrated with prior knowledge as the reading of a story continues. Here the role of the teacher is very important to build the background of the students when reading takes place.

A reading comprehension strategy is a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension.[15] This strategy relates to cognitive processes to understand the context of a reading that would facilitate the students to capture the contents, so that the communication will be smooth and it will also increase their students' reading comprehension achievement.

We define reading comprehension as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language.[16] We use the words extracting and constructing to emphasize both the importance and the insufficiency of the text as a determinant of reading comprehension.

**d. Students' Reading Comprehension Achievement**

The scores from the reading comprehension test taken before and after the treatment, the pre-test and post-test scores, were computed to determine means, standard deviation, percentages, and difference between means or pre-and post-

---

[15] Danielle S. McNamara, Reading Comprehension Strategies: Theoris, Interventions, and Technologies, ed, (USA: Lawrence Erlbaum Associates, 2007), 6. Or  www.erlbaum.com.
[16] Ibid

tests of each group. The difference between means of the first group was further compared with those of the second group to determine the significance difference between the two groups.

**e.  Factors that Influence Students Reading Comprehension Achievement**

There are some factors that involved when people read: objective, stance, text, and tactics.[17]

1.  Reading Objective

There are two basic types of reading objectives, the initial objective and the immediate objective. The initial objective people have went he decided to look for and choose a text, at the immediate objective is the one people have went heis about to start to read the text he have chosen.

2.  *Reader's Stance*

Reader's stane is the reader's attitude towards the text that he read. The reader's stance is influenced not only by the reading objective, but also by the type of text. Certain types of texts demand a submissive stace, whereas other types allow, or event invites, the reader to be assertive.

3.  Types of the texts

People can classify text in different ways; according to field, medium, register, or writer's purpose.

Classification according to field is along the line of library cataloguing system, where  books are grouped on the shelves according to subject: the arts, the physical science, the social science, etc. Classification according to register is to

---

[17] Michael A. Lucas, "Four Importance Factor in Reading", English Teaching Forum, (July, 1990, Vol. XXVIII, No. 3), 26.

do with style-differing degreed of formality and informality. Register is closely liked with medium, which is an important basic for classification. The last way of classifying text is according to the writer's purposes.

4.   Reading Tactics

Reading tactic here refers to the ways of actually reading the chosen texts. There are four tactics in reading: skimming, scanning, sequential readiang, and focused reading.

In addition, there are two factors that influence students' reading comprehension achievements. They are: internal factor and external factor.[18]

1)   Internal Factor

According to Kahayanto the internal factor means the factor which comes from the reader himself. Or usually known as personal factor, because the factor has existed inside the reader. This factor dealt with self-motivation and interest.

a.   Motivation

Motivation plays an important role in comprehending the text. The students will be motivated to read when they fell that they need something from the text. Brown divided the motivation theory into two kinds, they are: intrinsic and extrinsic motivation.

Edward Deci in Brown defined intrinsic motivation, as follow:

*"Intrinsically motivated activities are ones* from which there is no apparent reward except the activity itself. People seem to engage in the activities for their own sake and not because they lead to an extrinsic reward. It is aimed at bringing

---

[18] http://smahillah.hubpages.com/hub/mamaalvin. retrieved on 14 March 2015

about curtaining internally rewarding consequences, namely, feelings of competence and self-*determination.”*

On the other one, extrinsic motivation defined by him as extrinsically motivated behaviors that carried out in anticipation of a reward from outside and beyond the self. Such as; money, prizes, grades, and even certain of positive feedback.

b. Interest

Interest is being one of the important factors in order to increasing the students' comprehension achievement in reading. If one has interest to read, it means that he or she will get a good achievement. On the other side, if the reader has no any interest to read, it can influence his or her achievement.

In line with the explanation of motivation and interest above, if the students find the material uninteresting or dry, they will have a more difficult time focusing on the reading. This inattention could result in a lowering of reading comprehension levels. If they find the material interesting they will better understand it and will remember it more clearly. The teachers can keep the students to motivated by providing interesting pieces throughout the students' class time. So, it can be concluded that the good interest and motivation result the good achievement of the students.

2) The External Factor.

The external factor has a close relationship to reading material and teacher of reading. They are related one another.

a. Reading Material

The students' achievements' in reading depends on the level of the difficulty of the text. Thus, it can influence students' achievement if the text given is not at the right level of the difficulty of the readers or the students

b. Teacher of Reading

The teacher of reading should be careful in choosing the text and giving the tasks because they are related to the students' reading comprehension achievements.

This means that the teacher has responsibilities to motivating reading by selecting appropriate materials especially related with social from reader and they interest with the text Teacher selecting task texts, they should seek interesting texts and consider variety of topics.

## 6. Reading Technique

One of the first things you learn about teaching is that there are different reading techniques and the students should be aware of which technique is most suited, depending on the reading task required by the text or by their teacher.

AS Horby stated, "technique is a particular way of doing something especially one in which you have to learn special skill".[19]

Technique is the systematic procedure by which a complex or scientific task is accomplished.[20]

---

[19] Hornby, *Oxford Advanced Learner's Dictionary*, 1388.
[20] Available of www.the free dictionary.com/technique/ retrieved on 01 February 2015.

So, from the definition above the researcher conclude that reading technique is the way or strategy that used to do something in the process of studying especially to learn reading skill. The teachers must choose many methods and techniques that suitable with students' condition, because if that methods and techniques are suitable, they can give the material easily.

### a. Parts of Reading Skill

A reading lesson, in which we intend to grasp meaning of new information based on what we already know, think or feel about the topic we are about to read, is divided into three stages based on the purposes of each stage, i.e. the pre-, whilst-, and post reading stage.[21]

### 1. The Pre-/Before Reading Stage

Pre-reading activity (warm up) is activities before reading or before students read a text to build word and background knowledge to improve students' abilities and remember material presented in textbooks. This should increase all students' comprehension of the text.

In this stage include discussing the author or text type, brainstorming, considering illustration and titles. In pre-reading activity, the teacher gives motivation to the students by giving some question related to the topic with gives the visual aids of the text.

### 2. The Whilst-/During Reading Stage

The whilst is activity during the reading stage or the actual reading of the text. During this stage students should be making sense of the text and

---

[21] Bambang Yudi Cahyono, The Teaching of English Language Skills and English Language Components (Malang: State University of Malang Press, 2010), 82-85.

connections. Students should be also practice comprehension strategies and constantly realte to the text.

We generally read a text with some purpose or interest in mind. One important purpose is for the teacher to model good reading strategies such as identifying main ideas, guessing meaning on unfamiliar words in context, and so on.

3.  The Post-/After Reading Stage

The post-/after reading activities is the last of this stage. When the whilst-/during reading stage is completed, the students are expected to have obtained new information from the text.

At this stage, the students should be able to evaluate the text as a whole to respond to it from a more or less personal point of view. Common post-reading activities are: creating stories or end of stories, producing post-test, reconstructing texts, and questioning texts or views of the writer.

**b.  Kinds of Reading Skill**

All the models of reading that have been looked at so far have been designed with careful reading in mind. In fact many of the models of reading that have surfaced in the literature to date have been mainly concerned with careful reading. There are five kinds of reading: Search reading, Skimming, Scanning, Careful reading (at the global level) and Browsing.[22]

---

[22] A.H. Urquhart and C.J. Weir, Reading in a Second Language: Process, Product and Practice (London: Longman, 1998), 100-104.

1) Skimming

This is a reading for gist. Reading schemes like SQ3R recommend starting the reading to learn process with skimming, so that the reader has a framework to accommodate the whole text.

2) Search reading

As locating information on predetermined topics. The reader wants information to answer set questions or to provide data, for example, in completing assignments.

3) Scanning

This is a reading selectively, to achieve very specific reading goals, e.g. finding the number in a directory, finding the capital of Bavaria. The main feature of scanning is that any part of the text which does not contain the preselected symbol (s) is dismissed. It may involve looking for specific words/phrases, figures/percentages, names, dates of particular events or specific items in an index.

4) Careful reading

This is the kind of reading favored by many educationalist and psychologists to the exclusion of all other types. It is associated with reading to learn, hence with the reading of textbooks.

5) Browsing

We have added a type 'browsing' to describe the sort of reading where goals are not well defined, parts of a text may be skipped fairly randomly, and there is little attempt to integrate the information into a macrostructure, so we can

browse through virtually any text, given only that it consists of more than a few words.

### c.  Brainstorming Technique

### 1)  Definition of Brainstorming

Brainstorming as teaching/learning technique brings along creativity practice and more interactive lessons; it is a technique for recalling what is already known about a topic, "a conference technique of solving specific problems, amassing information, stimulating creative thinking, developing new ideas, etc., by unrestrained and spontaneous participation in discussion".[23]

Feather states that during a braistorming session, information that is already known is brought forward and become more accessible.[24] In other words, students in a brainstorming session bring from their brain ideas they already know about the subject matter of the text. This is in fact what is called prior knowledge activation.

Brainstorming as a technique for creating many ideas about a topic. In this activity, students are invited to call out words, knowledge and experience that relevant to the text, relevant language and an expectation meaning.[25] Through this technique, the students are likely to bring all what are in their brain which they may think it is linked to the text's topic.

---

[23] Monica-Ariana, Anamaria-Mirabela, "Mind Mapping and Brainstorming ..........78.

[24] Ahlem Labiod, "Prior Knowledge Activation Through Brainstorming to Enhance EFL Learners'ReadingComprehension",2007. Available at http://bu.umc.edu.dz/theses/anglais/LAB964.pdf. Retrieved on on 14 Feb 2015.

[25] Perviz Ajideh, "Schema–theory Based Considerations on Pre-reading Activities  in ESP Textbooks", The Asian EFL Journal. Teaching Articles. November 2006 Vol 16.

Brainstorming technique is effective in generating new ideas in the students. Richards found that student interaction was an important part of developing the cognitive skills involved in generating ideas. He found that brainstorming was an effective way of achieving this. His study showed that students who were trained in brainstorming techniques were more efficient at generating and organizing ideas than students in a control group.[26]

From the definition above, the researcher concluded that brainstorming is the prior knowledge activation technique before reading or before students read a text to be used in the actual study to activate student's prior knowledge and to help the students make connections with their own life experiences, thus engaging and giving the students a stronger purpose for reading.

**2) Types of Brainstorming**

There are two types of brainstorming:

a. Individual Brainstorming

One reader may go on brainstorming by his own. Prior to reading a text, he gets its title and tries to jot down on a paper all his previous acquired knowledge about the text's topic. He may decide to share those ideas with others who are reading the same text.

b. Group Brainstorming

Brainstorming turns to be an interactive group activity through which the reader shares their ideas. In a group brainstorming, their must be a head who

---

[26] Fariba Mobini, Ghiti Karimkhanlooie, Ali Hashemi, " The Impact of Content-Based Pre-reading Activities on Iranian High School EFL Learners' Reading Comprehension", available at  https://www.academia.edu/4770161/Title_The_impact_of_content-based_pre-reading_activities_on_Iranian_high_school_EFL_learners_reading_comprehension_Authors_Fariba_Mobini_Ph. Retrieved on 6 March 2015.

controls, organizes and guides the process. In a classroom environment, the teacher is the one to play this role.[27]

**3)   The Advantages of Brainstorming**

Brainstorming has many advantages as a classroom procedure:

a.   It requires little teacher preparation

b.   It allows learners considerable freedom to bring their own prior knowledge and opinions to bear on a particular issue

c.   It can involve the whole class.[28]

Therefore, no learner need feel threatened when they explore their ideas. For example, these are the description which the key word "money". We can brainstorm money with 'coin', 'bank', 'poverty', 'pay day', 'interest', 'purse', and etc. These bids reflect very different generalization. However, the initial random association can be classified and subcategorized either by the teacher or the students, and additional contribution from class members or the teacher added to stretch existing concept. So, we can get a lot of perceptions about money from the different opinions.

**d.   The Effectiveness of Using Brainstorming Technique**

Teaching reading means due to the complex nature of the reading process. Teacher has to create better materials to enhance the effectiveness of the reading lessons.

---

[27] Ahlem Labiod, "Prior Knowledge Activation Through Brainstorming to Enhance EFL Learners'Reading Comprehension", 2007. Available at http://bu.umc.edu.dz/theses/anglais/LAB964.pdf. Retrieved  on 14 Feb 2015.
[28] Perviz Ajideh, "Schema–theory Based Considerations on Pre-reading Activities  in ESP Textbooks", The Asian EFL Journal. Teaching Articles. November 2006 Vol 16.

A teaching is effective if it can accomplish the planned goal and assigned tasks in accordance with school goals. Thus, the objectives of education and the definitions of the quality and effectiveness of education are closely connected.[29] This means that defining effective teaching must be done in relation to attain the objectives of education.

Many comprehension strategies are significant for students to learn and use before, during, and after reading. Before students read a book, it is imperative for teachers to activate their prior knowledge to help them connect the information to their new found knowledge. So that, the teacher can the list on the board all or some of the information students "brainstorm" from reading the title. These pieces of information are then used to recall background knowledge (what students already know about the topic). These pieces of information also are used to prepare for making connections to new knowledge as students continue with the text.

According to Osborne there are four basic rules in brainstorming, meant to reduce the social inhibitions that occur in groups and contributing to the emergence of new ideas.

1) Focus on quantity

In order to produce really effective solution, answers, ideas. There is a need for as many ideas generated as possible: quantity breeds quality. Means, if the students give alot of ideas, it will most likely generate brilliant ideas, answers and solution, so that the quatity here is necessary.

---

[29] James Ko and Pamela Sammsons, Effective Teaching: A Review of Research and Evidence, (University of Oxford), 5-6.s

2) No critism

No judgments are allowed throughout the brainstorming process so as to create a supportive environment where participants feel free to generate unusual even silly ideas. So that, they will not afraid to make mistake when they explore their ideas.

3) Unusual ideas

Welcome as they may open new ways of thinking and provide better solutions than the usual ones. as the result, students can explore their idea without any obstacles and they don't feel shy to express their idea.

4) Combine and improve ideas

This approach may bring along better and more complete ideas than just producing ideas.[30] It means that with a better ideas it can solve the problem that happen when the students read a text.

It means that, by using brainstorming technique it can be used to activate students prior knowledge which is presented by Alex Osborn, that brainstorming is a tool to help students to generate ideas, and also can help students to solve the problem before it went in the next lesoson.

**e. The Process of Brainstorming in teaching Reading Comprehension**

Teacher applied brainstorming in class before reading is helping the students in activating their prior knowledge or sharing other people's knowledge about the content of the text and enhancing their reading comprehension.

---

[30] Monica-Ariana, Anamaria-Mirabela, "Mind Mapping and Brainstorming as Methods of Teaching Business Concept in English as a Foreign Language", Academica Science Journal Psychologica Series, 1 (2012), 79.

The students in a brainstorming session brings from their brain ideas that they already know about the subject matter of the text. This is in fact what is called prior knowledge activation. Isaken states that the facilitator in a brainstorming session should own the ability to ask the questions which trigger the readers' mind.[31] So, the teacher plays the role of a guide or facilitator in a brainstorming activity prior to reading a text.

The process of brainstorming entails as it was stated by Ur a "simple pooling of ideas". That it is to say, the students will jot down ideas freely. As a pre-reading exercise the teacher announces the topic of the text to be read and records it on the board. The students start brainstorming about it. Teacher can uses a simple brainstorming activity with the word animal. He puts on the board the key item which invites readers' idea and also the one to write these ideas on the board. Along this process, teacher manages to stimulate students. After recording the brainstorming ideas in a list, students start reading and verifying whether what was brainstormed is correct or wrong. Thus, they will be reading with a purpose in mind.

The teacher never dictates on students their own ideas but leads them to bring their own production. Moreover, teacher tries not to judge their ideas even by his gestures and facial expressions. Thus, he keeps discipline and prevents any form or anarchy or conflict which may cause waste of time and failure to create a joyful atmosphere.

---

[31] Ahlem Labiod, "Prior Knowledge Activation Through Brainstorming to Enhance EFL Learners'Reading Comprehension", 2007. Available at http://bu.umc.edu.dz/theses/anglais/LAB964.pdf. Retrieved on 14 Feb 2015.

Brainstorming seems be a worthy technique to be used in our field work. It is rather a practical technique which does not consume too much time and lets much of the reading session time to the reading process itself.[32] So, by activated brainstorming before reading it can help the readers in focusing attention, speeding up reading, enhancing reading comprehension and activate prior knowledge and also to see how much this has effect on the readers' reading comprehension achievement.

## B.  Previous Research Finding

There were some research findings related with the effectiveness of brainstorming technique in teaching reading comprehension. One of the researches was presented by Ahlem Labiod. This research investigated the degree of the impact of prior knowledge activation through the use of brainstorming in enhancing learners' reading comprehension.[33] And the aim of the study is to give importance to activating readers' already existing knowledge as an aid to enhance their reading comprehension. The target population is 130 second- year student at the ENS. Thus, the sample is 26 students who are randomly selected. The sample is divided into two groups: group one (Gr1) and group two (Gr2). Members of Gr1 and Gr2 are randomly assigned. They will be members of the experimental and the control groups of the experiment. He used t-test to analyze the results obtained in the experiment. The results of this study revealed that background

---

[32] Ibid.,

[33] Ahlem Labiod, "Prior Knowledge Activation Through Brainstorming to Enhance EFL Learners'Reading Comprehension", 2007. Available of http://bu.umc.edu.dz/theses/anglais/LAB964.pdf. Retrieved on 14 Feb 2015.

knowledge activation prior to reading a text is seen as an important variable which has positive effects on readers' achievements. The obtained results are found to be highly significant. This leads us to confirm that prior knowledge activation through brainstorming enhances readers' comprehension as stated in the hypothesis.

Another researches that similar with this research was thesis from Susmiarti under the title ''improving students reading comprehension through round robin brainstorming technique.[34] This research was a classroom action research. The subject was the students of VIII G of SMPN 1 Cilongok in academic year 2011/2012. There were thirty-three students in class VIII G. It consists of eighteen females and fifteen males. This research used the design of Kemmis and McTaggart. There are some steps, and those are planning, acting, observing, and reflecting. These steps happened in each cycle, and they were useful to make this research systematic. To collected the data, she used some instruments such: observation, test, quesionnaire, interview, field notes, and documentation. The data from the students questionnaire that were gained from the six questions showed that the students gave positive responses in reading activity. Those data proved that Round Robin Brainstorming technique could improve the students reading comprehension. The result of this research showed

---

[34] Susmiarti, "Improving Students Reading Compreension Through Round Robin Brainstorming Technique (A Classroom Action Research at Eighth Grade Students of SMP Negeri 1 Cilongok in Academic Year 2011/2012)", Undergraduate Theses from JHPTUMP, University of Muhammadiyah, Purwkerto, 2012. (digilib@ump.ac.id). Available of http://digilib.ump.ac.id/gdl.php?mod=browse&op=read&id=jhptump-a-susmiarti-600. Retrieved on 6 March 2015.

that there was significant improvement in students reading comprehension after implementing CAR through Round Robin Brainstorming technique.

Moreover, the research finding related with the previous study was from Muayyad Mohammed Saed.[35] The study aims at determining the effectiveness of using brainstorming (BS) as a technique for teaching reading comprehension in advanced ESP courses. The population of the study are 1st- year students of the college of political sciences, university of Baghdad. Their total number is (173 ) of both sexes grouped into (4) sections. As a result, students in ESP courses need novel techniques that enable them to have full comprehension of what they have already read. One of such techniques is believed to be the brainstorming adopted here as new orientation and most effective teaching technique which allows ESP students to freely express themselves and generate indefinite number of ideas on a topic relating to a given text prior to the reading activity in class.

The last previous research finding was jurnal from Mohammad Ahmed Manasrah.[36] The study aims at analyzing and describing the effectiveness of using BS as a technique for teaching reading in advanced ESP courses. Owing to certain BS requirements, it is highly believed that students taught according to BS master the reading texts in ESP better than those taught according to other teaching techniques, i.e. the conventional techniques. However, this study is limited to undergraduate students who have the capacity to use the foreign language if they

---

[35] Muayyad Moh. Saed, "The Effectiveness of Brainstorming on Teaching ESP Reading at University Level", 2011. Available of http://www.iasj.net/iasj?func=fulltext&aId=17650. Retrivied on 6 March 2015.

[36] Moh. Ahmed Mansrah, "The Importance of Brainstorming In Improving ESP Reading Comprehension", International Journal of Arts and Commerce, Vol. 3 No. 1 January, 2014.

are provided with the permissive and simulative atmosphere. And the result was ESP students necessarily require BS as the most preferable teaching techniques that provide them with effective learning opportunities as the stimulating and permissive atmosphere.

Related to this research, these research findings become valuable contribution and reference to the researcher. The researcher realizes well that applying an appropriate teaching technique is one of the factors that determine the success of teaching reading. The technique used should be a communicable material to helping the students to comprehend the text.

## C. Theoretical Framework

Reading is an activity to understand the texts and to get some information and knowledge. In getting the meaning from the text, the students need comprehension strategy. It means that the major goal for reading activities is comprehension. Therefore, the teachers must guide their students in providing strategies to engage them prior to reading and finaly the students will be more pertinent to comprehend.

There are three stage on reading comprehension, they are pre-reading, while-reading and post reading. Before reading, the teacher must build the background knowledge of their students, therefore they use pre-reading activity to activate their schemata. Pre-reading stage which will help the students easily to understand the text. Commonly, Students use their prior knowledge to understand information and apply their knowledge to new facts.

There are many pre-reading strategies such as brainstorming, sequencing picture, encouraging the use of dictionary, discussing text type, and predicting the title. But, one very popular kind of pre-reading task is "brainstorming" as it is quoted by Wallace.[37] When a teacher activates students' prior knowledge with brainstorming before reading, students will be able to comprehend. The teachers an immediate impression of how many the students already knows about something. In the other hand, the students will enjoy for joining reading class as good as possible.

Brainstorming technique is be able to make individual produce two times more ideas than when working alone, as it is stated by Alex Osborn.[38] Additionaly, by using braistorming technique the students can improve their ability to comprehend the text and the researcher thinks that the students feel more interested, easy and of course they will be motivated to learn and understand the subject matter.

This research is experimental research, with the effectiveness of brainstorming technique on students' reading comprehension achievement at the seventh grade students of SMPN 01 Sawoo in academic year 2014/2015. The research used brainstorming technique to get better of reading comprehension achievement. After that the researcher observed this process to know, is there any significant difference achievement between students taught brainstorming and not being taught brainstorming at the seventh grade of SMPN 01 Sawoo in academic year 2014/2015.

---

[37] Perviz Ajideh, "Schema–theory Based Considerations on Pre-reading Activities in ESP Textbooks", The Asian EFL Journal. Teaching Articles. November 2006 Vol 16.

[38] Monica-Ariana, Anamaria-Mirabela, "Mind Mapping and Brainstorming ..........78.

This research consists of two variables:

    X           : Brainstorming Technique

    Y           : Students' Reading Comprehension Achievement

The researcher assumes that there are many pre-reading technique, but by using brainstorming technique at the seventh grade of SMPN 01 Sawoo is effective to achieve better score in reading comprehension.

## D. Hypothesis

Hypothesis is a temporary answer to the problem of theoretical research that is considered most likely and highest levels were correct.

There are two hypotheses:

Ha : The students taught brainstorming technique will achieve a better score in reading comprehension than the students not being taught brainstorming technique at the seventh grade students of SMPN 01 Sawoo in academic year 2014/2015.

Ho : The students taught brainstorming technique will not achieve a better score in reading comprehension than the students not being taught brainstorming technique at the seventh grade students of SMPN 01 Sawoo in academic year 2014/2015.

Hypothesis in this research is: Ha: The students taught brainstorming technique will achieve a better score in reading comprehension than the students not being taught brainstorming technique at the seventh grade students of SMPN 01 Sawoo in academic year 2014/2015.

# CHAPTER III

# RESEARCH METHOD

The existence of the research method has a goal of guiding the research in order to work systematically. The research method covers a set of research activities conducted by researcher. It involves research design, population and sample, instrument of data collection, technique of data collection, and technique of data analysis.

## A. Research Design

In this study, the researcher used quantitative research method. Quantitative research is explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics).[39] It means, to analyse the data the researcher used statistical calculation.

This research applied an experimental research. Experimental research manipulates and controls the cause variable and proceeds to observe the change in the effect variable. According to Manion in experimental research, the researcher deliberately controls and manipulates the conditions or makes change in the value of the independent variable and observes the effect of that change in the dependent variable. So when doing an experiment, the researcher controled the environment as much as possible and only concentrated on those variables that the researcher wanted to study.

---

[39] Daniel Muis, Doing Quantitative Research in Education, 1.

There are several types of experimental research; some of them are true experimental, quasi-experimental, and pre-experimental.[40] In this research, the research employed quasi-experimental and used Non-equivalent (pre-test and post-test) control group design. Quasi-experimental research is a research that directly attempts to influence a particular variable, and when properly applied, it is the best type for testing hypothesis about cause-effect relationship.[41] This design was assumed to meet with the aim of this research that is to know whether or not there is a significant difference of the students' achievement that is given by using certain treatment.

Quasi-experimental indicates that random assignment of subjects to treatment groups was not accomplished.[42] Therefore, the researcher can only assign randomly different treatment to two different classes. They were control class and experimental class.

In Non-equivalent (pre-test and post-test) control-group design, a popular approach to quasi-experiment, the experimental group A and the control group B were selected without random assignment. Both groups took a pre-test and post-test. Only the experimental group received the treatment.[43]

Based on explanation above, this research employed two classes. They were experiment and control class as the subjects. The experiment class was taught using brainstorming technique and the controlled class was taught without

---

[40] M. Adnan Latief, Research Methods On Language Learning An Introduction (Malang: UM Press, 2012) 92.

[41] Jack Fraenkel and Norman Wallen, How to Design & Evaluate Rearch In Education (San Fransisco: Mc Graw Hill companies, 2000), 283.

[42] Walter R. Borg, Educational Research: An Introduction (London: Longman, 1983), 680

[43] John W.Cresweel, Research Design Qualitative, Quantitative, and Mixed Methods Approaches Third Edition (United Kingdom: Sage Publication, 2009), 160.

brainstorming technique. They taught by the classroom teacher who used the normal mode of instruction such us: directing the students to read aloud; using silent reading; teacher-led questioning; requesting rereading of elements of text where she deemed this to be necessary; requiring the students to highlight elements of the text; and completing written exercises related to the readings.

Here, both the experimental and control classes were pre-and post-tested for thier knowledge of the information contained in the readings. Pre-test before treatment in order that to make students in same condition and to know the students' reading comprehension achievement and post test after treatment to measure the effects of that treatment.

## B. Population and Sample

### 1. Population

Population must be accessible and quantifiable and related to the purpose of the research.[44] Therefore, the researcher usually limit the sources of the data into the accessible population sources of data that the researchers have acces to get the data. According to Suharsimi Arikunto, a population is all of the research subjects.[45] It means that population can be defined as all member of any well – defined class of people, events or object that have specific characteristic defined by the researcher to learn and the be deduced.

In this research, the population was seventh grade students of SMPN 01 Sawoo. The total number of population were 154 students. There were 6 classes.

---

[44] Mark Balnaves and Peter Caputi. Introduction to Quantitative Research Methods: An Invesrigate Approach (London: British Library Cataloguing. 2001), 91.

[45] Suharismi Arikunto, Prosedur Penelitian Suatu Pendekatan Praktik,  (Jakarta : PT Rineka Cipta, 2006), 130.

For those classes, the researcher choosed two classes of the seventh grade as experiment class and controlled class. To select samples, the researcher took a reading test data that has been done by the teacher. Then, from the results of reading score, the researcher measured the means and standard deviation of the classes to know whether or not the classes had similar characteristics of capibility.

The result of homogenity found that there were only 3 classes that considered homogen or had similar ability. They were C, D, E classes. Then among the three classes, it was chosen two classes that would be taken as experiment class and control class by using a lottery technique. The result reavealed that class E became an experimental class and class C as a control class. Meanwhile, class D was used as a validity class. Validity class was used to measure the validity of test. In this study, the researcher used content validity. It means that a measuring instrument was deemed valid if it was in accordance with the curriculum to be achieved. So, before the data was tested to experiment class and control class, it should be tested for its validity.

## 2. Sample

According to Sugiyono, sample is a part of the number and characteristic possessed by population.[46] Furthermore, Suharsimi states that sample is partially or representative of the population studied.[47] From these statement, it can be stated that sample is a part of population and it must representative for research.

---

[46] Sugiyono, Metode Penelitian Kuantitatif Kualitatif dan R&D (Bandung: Alfabeta, 2008), 81.
[47] Suharsimi., Prosedur Penelitian. 117

The sampling technique applied in this research was cluster random sampling. Cluster random sampling or sample area (group) is determined based on the sampling areas or groups that exist in the population such as school, class, region, and not individual.[48] The researcher choosed this sampling technique because cluster random sampling was easier in the implementation and manageble than the others technique. Moreover, the researcher could limit the time, energy, and fee.

Based on the explanation, the reseracher choosed the sample from two classes that had same level of background knowledge. The sample from seventh grade that researcher choosed C class and E class. Each class consist of 26 students. E class became an experiment class and C class became a control class.

## C. Intrument of Data Collection

This research's instrument to collect data primary is test. According to Subana, Moersetyo and Sudrajat, test as a data collection instrument is a set of questions or exercises that are used to measure the skills, knowledge, intelligence, ability or skills possessed by individuals or groups.[49]

In this study, the test was constructed by the researcher based on the standardized procedures of making test. The test was divided into two parts. They were pre-test and post-test. The pre-test was directed in the beginning study before the treatment. Pre-test was to gain information about the students

---

[48] Margono, Metodologi Penelitian Pendidikan (Jakarta: PT. Rineka Cipta, 1997), 127.
[49] Subana, Moersetyo and Sudrajat, Statistik Pendidikan (Bandung: CV. Pustaka Setia, 2000), 28-29.

achievement before the treatment as the teaching process. Post-test was to gain information about the students achievement after the treatment process finish.

In this research, the researcher used reading comprehension test which had already been prepared by the teacher to find out the effectiveness of brainstorming technique. The form test was objective. There were 30 multiple choice items with 6 themes by took 60 minutes to completed.[50] The test measured the student's ability in reading comprehension achievement that had been previously taught by the teacher. The experiment was held in five meeting. They were pre-test, treatment 1, treatment 2, treatment 3 and post-test.

According to Suharsimi Arikunto, a good instrument must fulfill two important of requirements, they are valid and reliable. Therefore, the researcher used instrument test with two tests, the first test is test of validity and the second test is test of reliability.

## 1. Test of Validity

Validity is a measure that indicates the levels of validity or the validity of an instrument. The instrument must be able to measure what should be measured.[51] The method used in measuring the validation of the instrument is called content validity. A test or a measurement can be called a content test when it measures the special purposes which is equal with the material or content given.

In the validity test, the researcher used product moment correlation formula by Pearson. The formula is as follows:

---

[50] See Appendix 1

[51] Suharsimi. Prosedur Penelitian. 168

$$r_{xy} = \frac{n \, \Sigma xy - \Sigma x . \Sigma y}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

Notes:

$r_{xy}$      = digit of index Product Moment Correlation

$\Sigma x$      = the total score X

$\Sigma y$      = the total score Y

$\Sigma xy$      = the total of result multiplication between score X and Y

 n      = Total of respondent[52]

When the coeficient correlation was under 0.30, it can be concluded that the item was not valid instrument. Thus, the items said to be valid instruments if the coeficient correlation of magnitude more than 0.30.

In the case of this item analysis Masrun as cited by Sugiono stated "Correlation technique to determine the validity of this item until now the most widely used technique". Furthemore, in giving the interpretation of the correlation coeficient, Masrun stated "Items that have a positive correlation with the criterion (total score) and high correlation, indicating that the item also has a high validity. Typicaly, the minimum requirements to be eligible is if r = 0.3, then the item in the instrument shall be declared invalid.[53]

---

[52] Ibid, 170.
[53] Sugiyono, Metode Penelitian, 126.

Example of item No.1 (in the multiple-choice test):

$$r_{xy} = \frac{n\,\Sigma xy - \Sigma x.\,\Sigma y}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

$$r_{xy} = \frac{26X541 - 24X575}{\sqrt{(26X24 - (24)^2)(26X13005 - (575)^2)}}$$

$$r_{xy} = \frac{14066 - 13800}{\sqrt{(624 - 576)(338130 - 330625)}}$$

$$r_{xy} = \frac{266}{\sqrt{(48)(7505)}}$$

$$r_{xy} = \frac{266}{\sqrt{360240}}$$

$$r_{xy} = \frac{266}{600.19}$$

$r_{xy} = 0.443$ (Valid).

To test the validity and reliability of the instrument, the researchrs took a sample of 26 respondent used 30 item of reading comprehension test.[54] Validity of the calculated item instrument to 30 items about reading comprehension skill, there were 26 items about which declared valid are the item number 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30.[55] The calculation result of data validity, as follow:

---

[54] See Appendix 2
[55] See Appendix 3

**Table 3.1: The result of Validity Test**

| Item Number | "r" calculated | "r" table | Notes |
|:---:|:---:|:---:|:---:|
| 1 | 0.443 | 0.3 | Valid |
| 2 | 0.427 | 0.3 | Valid |
| 3 | 0.447 | 0.3 | Valid |
| 4 | 0.452 | 0.3 | Valid |
| 5 | 0.473 | 0.3 | Valid |
| 6 | 0.347 | 0.3 | Valid |
| 7 | 0.375 | 0.3 | Valid |
| 8 | 0.450 | 0.3 | Valid |
| 9 | 0.320 | 0.3 | Valid |
| 10 | 0.385 | 0.3 | Valid |
| 11 | 0.573 | 0.3 | Valid |
| 12 | 0.680 | 0.3 | Valid |
| 13 | 0.398 | 0.3 | Valid |
| 14 | 0.398 | 0.3 | Valid |
| 15 | 0.518 | 0.3 | Valid |
| 16 | 0.301 | 0.3 | Valid |
| 17 | 0.301 | 0.3 | Valid |
| 18 | 0.366 | 0.3 | Valid |
| 19 | 0.397 | 0.3 | Valid |
| 20 | 0.478 | 0.3 | Valid |
| 21 | 0.409 | 0.3 | Valid |
| 22 | 0.337 | 0.3 | Valid |
| 23 | 0.443 | 0.3 | Valid |
| 24 | 0.347 | 0.3 | Valid |
| 25 | 0.333 | 0.3 | Valid |
| 26 | 0.226 | 0.3 | Not valid |
| 27 | -0.305 | 0.3 | Not valid |
| 28 | 0.078 | 0.3 | Not valid |
| 29 | 0.227 | 0.3 | Not valid |
| 30 | 0.333 | 0.3 | Valid |

Based on the table, among 30 questions, there are 26 questions was valid and 4 questions was invalid. But the researcher still uses 30 questions for collecting data with the revision test, because the questions can measure the special purposes which is equal with the material or content given.

## 2. Test of Reliability

Reliability defined as the level of internal consistency or stability of the measuring device over time.[56] In this research, the researcher uses a method of Kuder-Richardson. Application of this method using scores 1 for correct answers and score 0 for incorrect answers. K-R 20 formula is:

$$r_{11} = \left(\frac{n}{n-1}\right)\left(\frac{S^2 - \Sigma pq}{S^2}\right)$$

Note :

$r_{11}$ : The reliability test

p : The subject proportion with right answer

q : The subject proportion with wrong answer

$\Sigma pq$ : The total number of the multiply between p and q

N : All item

S : The deviation standard of test

$$S^2 = \frac{\Sigma x^2 - \frac{(\Sigma x)^2}{N}}{N}$$

$$= 7905 - \frac{(575)^2}{26}$$

$$= \frac{13005 - 12716.34}{26}$$

$$= \frac{288.66}{26}$$

$$= 11.10$$

---

[56] Walter R. Borg, Educational Research: An Introduction (London: Longman, 1983), 281

$$r_{11=}\left(\frac{n}{n-1}\right)\left(\frac{S^2-\Sigma pq}{s^2}\right)$$

$$=\left(\frac{26}{26-1}\right).\left(\frac{11.10-5.06}{11.10}\right)$$

$$=\frac{26}{25}.\left(\frac{6.03}{11.10}\right)$$

$$=(1.04).(0.54)$$

$$=0.565 \text{ (reliable)}$$

The calculation of realiability above can know the value of the variable instrument reability of student's reading mastery of class VII.[57] Values 0.565 then consulted with "r" table on the significance level of 5% is 0.388. Because "r" count (0.565) >"r" table (0.388), so the instrument can be said reliable. For more details it can be seen in the following table:

**Table 3.2**
**Test Item Reliability**

| "r" arithmetic | "r" table | Explanation |
|:---:|:---:|:---:|
| 0.565 | 0.388 | Reliable |

## D. Technique of Data Collection

In data collection, there are three techniques employed to collect the data in this study. They are test, interview and documentation. The test is used to gain primary data. Meanwhile, interview and documentation are conducted to fulfill the supporting data.

---

[57] See Appendix 4

1. **Tests**

   Test is used to measures students' reading skill. A test, in simple terms, is a method of measuring a person's ability, knowledge, or performance in a given domain.[58] Therefore, the researcher can measure the students ability easily.

   In testing reading, the students were asked to answer some questions relating to the texts that were given by the teacher. Reading test was used for the pre-test and post-test not only to measure the students' comprehension competence in reading but also to collect the data.

   The comprehension of main ideas, inferences, factual information stated in passage, pronoun referents was assessing in the reading test. The factual information was limited only in descriptive text, and prosedural text. This research choose traditional multiple-choice questions to evaluate students' reading comprehension. The numbers of each test was thirty items.

2. **Interview**

   Interviews are used as data collection techniques to conduct a preliminary study to find problems that must be investigated, and also to know things that the respondents are more in-depth and number of respondent little/small.[59] So, the researcher conducts in the classroom observation.

   Interviews can be differenced in a structured or unstructured unterview, and can be done through face to face or by telephone. In this study, the researcher used unstructured interviews. Because the researcher wanted to get a depth

---

[58] H. Douglas Brown, Language Assessment Principle and Classroom Practices (San Fransisco: Pearson Longman, 2003), 3.

[59] Sugiyono, Metodologi Penelitian Pendidikan, 194.

information from the interviewer. Unstructured interview is a free interview where the researcher does not use the interview guide that has been arranged in a systematic and comprehensive data collection. Thus, the researcher uses this method to collect data about the condition of object of research.

**3. Documentation**

Documentation is a way of getting information or data through notes, transcripts, books, newspaper, magazines, agenda, etc.[60] In other words, it can be stated that documentation is used to collect data through printed materials.

The documents used in this research were taken from students' result of the given test, teacher lesson's plan, and photograph of teaching-learning process. Beside that, the researcher also get the data about history of school, vision, mission, goals, facilities, infrastructure, and the structure organization of SMPN 1 Sawoo.

**E. Technique of Data Analysis**

The analysis method is used in research is statistic inferential technique. It uses to prove the probabilities theory, where it also uses for data analysis for explanation aims.

In this study, the researcher applies a Quasi-experimental research to compare the mean score of experimental group that is taught by brainstorming technique and the mean score of control group that is taught by conventional technique. Through to analysis the data, the researcher used statistic calculation of the t-test to determine the final calculation of $t_o$ (T observation) that is done to

---

[60] Ibid., 231.

measure the last score of the experiment class and controlled class by using statistic calculation of the t-test with significance degree 0.05 as follows.[61]

$$\text{T}_\text{o} \text{ score} \quad : \quad t_0 = \frac{M1 - M2}{SEm\ 1 - m\ 2}$$

Before the researcher use t test, the researcher applied Assumption test, namely normality test and homogenity test :

1. Normality test using Kolmogorov-smirnov test. Each of the two populations being compared must follow a normal distribution. The steps of analyzing normality test as follows:

a. Formulated hypothesis

Ho : the data were not normality distributed

Ha : the data were normality distributed

b. Calculate the average (mean) to create a table

$$Mx = \frac{\sum fx}{n}$$

$$SDx : i \sqrt{\frac{\sum fx2}{n} - \left[\frac{\sum fx}{n}\right]}\ \ 2$$

c. Calculating the value of fkb

d. Calculated each frequency divided by the number of data (f/n)

---

[61] Anas Sudijono, Pengantar Statistik Pendidikan (Jakarta: PT. Raja Grafindo Persada, 2005), 314-316.

e. Fkb calculating each divided by the number of data (fkb/n)

f. Calculated the value of Z by the formula X is the original value of data and μ is the population mean can be estimated using the average of the sample or the mean while $\sigma$ was the standard deviation of the sample values. Z values would be calculated each value after sorted smallest to largest.

$$Z = \frac{X - \mu}{\sigma}$$

g. Calculate $P \leq Z$

h. For $a_2$ values obtained from the difference between columns 5 and 7 (fkb/n and $P \leq Z$)

i. For $a_1$ values obtained from the difference between columns 4 and 8 (f/n and $a_2$)

j. Comparing the highest number $a_1$ with Kolmogorov-Simirov table

k. Test the hypothesis

l. If $a_1$ maksimum < kolmogorov simirov table, receive Ha and data is normal distribution.[62]

2. Homogenity test using Harley test. Homogenity test is the variance ratio test between two group or more.[63] This can be tested by Harley test.

---

[62] Retno Widyaningrum, Statistik (Ponorogo: STAIN Ponorogo Press, 2009), 206-210.
[63] Ibid. 214.

$$F(\text{max}) = \underline{\text{Var max}} = SD^2\text{max}$$

$$\text{Var min} = SD^2\text{min}^{64}$$

The steps of analyzing homogenity test as follows:

a. Make a frequency distribution table

b. Calculated SD formula

$$SDx : \sqrt{\frac{\sum fx2}{nx} - \left[\frac{\sum fx}{ny}\right]^2}$$

$$SDy : \sqrt{\frac{\sum fy2}{ny} - \left[\frac{\sum fy}{ny}\right]^2}$$

c. Using the formula Harley:

$$F(\text{max}) = \underline{\text{Var max}} = SD^2\text{max}$$

$$\text{Var min} = SD^2\text{min}$$

d. Comparing F (max) results calculated with F (max) table, with db = (n-1 ; k)

3. T-test is used to determine whether the means of two groups are statistically different from one another.

---

[64] Ibid. 216.

The data analysis used is T-test non-independent experiment with 5% significance level with this formula as follow:

a. Determining mean variable I and II, with formula:

$$M1 = M' + i \left[\frac{\sum fx'}{n1}\right]^2 \qquad\qquad M2 = M' + i \left[\frac{\sum fy'}{n2}\right]^2$$

b. Determining deviations standard of variable I and variabe II, with formula:

$$SD1 : i\sqrt{\frac{\sum fx'2}{n1} - \left[\frac{\sum fx'}{n1}\right]^2}$$

$$SD2 : i\sqrt{\frac{\sum fy'2}{n2} - \left[\frac{\sum fy'}{n2}\right]^2}$$

c. Determining standard error mean variable I and II, with formula:

$$SE_{M1} = \frac{SD1}{\sqrt{n1-1}}$$

$$SE_{M2} = \frac{SD1}{\sqrt{n2-1}}$$

d. Determining the differences of mean variable I and mean variable II, with formula:

$$SE_{M1-M2} = \sqrt{SE_{M1^2+}SE_{M2^2}}$$

e.  to score

$$t_o = \frac{M1 - M2}{SEm\,1 - m2}$$

After all of the data are calculated, the last procedure is determining df (degree of freedom) with formula:

$$Df \text{ or } db = (N_x + N_y) - 2$$

**Notes:**

M1              = Mean of variable X (post-test)

M2              = Mean of variable Y (post-test)

SD1'            = Standard Deviation x variable

SD2'            = Standard Deviation y variable

SEM1'           = Standard of error of x variable

SEM2'           = Standard of error of y variable

SEM1-M2         = Standard error between mean of x Variable and y Variable

R12             = the correlation coefficient between x variable and y variable

                = the total number of score multiplication of x variable and y variable

$\Sigma f1'$            = the total number of scores of x variable

$\Sigma f2'$            = the total number of scores of x variable

$\Sigma f1^2$           = the total number of square scores of x variable

$\Sigma f2^{2}$             = the total number of square scores of y variable

To                = t- Observation

N                = the number of subject

(N-1): db: Degree of Freedom[65]

---

[65] Ibid,  161.

# CHAPTER IV

# FINDING AND DISCUSSION

In this chapter the researcher report on research location, data description, data analysis, and discussion.

## A. Research Location and Time of the Research

## 1. General Location

The researcher conducted the research at SMPN 1 Sawoo in academic year 2014/2015. It is located in the Prayungan Village at Sawoo District Ponorogo. Exactly it is in front of SMK 1 Sawoo (opposite). As the SMP which was first built in the Sawoo area, it has many students and not least with other junior high schools in the region Ponorogo.

SMPN 1 Sawoo supported by professional educators with educational qualifications S1 and S2. At its inception (1981) SMPN 1 Sawoo only have a few classes and now has developed into 18 classes with more complete facilities. The school is located on Highway Ponorogo-Treanggalek exactly in front of SMK 1 Sawoo. SMPN 1 Sawoo continue to develop themselves and are now aligned with another school in the town of Ponorogo. While it continues carved achievement both in academic and non-academic. For more information about SMPN 1 Sawoo.[66]

SMPN 1 Sawoo uses Kurikulum Tingkat Satuan Pendidikan (KTSP). This curriculum is developed from standard of content by school based on their context

---

[66] See Appendix 5,6,7,8

and potential. They improve the curriculum based on the demands of the times. They use KTSP for all subject.

Teachers are figure to be ushwah khasanah or good attitude example for the students. The teachers have to act as advisor for the students in developing creativity and self potential and as motivator that help the students raise the goal and aspiration. The exsistence of a teachers at SMPN 1 Sawoo has a qualified majority of S1/S2. This greatly affects the performance of the school in an effort to improve the quality of education. The whole teachers of SMPN 1 Sawoo from many universities such as graduated from UNESA, UNIPA, UNITOMO, UNS and so on. So that, innovation and creativity teachers has increased and potential as educators, teachers, social and personal services can already be actualized although not 100%. The total of teachers in SMPN 1 Sawoo is 35 and 12 official employee.[67]

Students are the important component in education course. There are 490 students of SMPN 1 Sawoo in academic year 2014/2015. It it devided into three grades; the seventh grade, the eighth grade, and the nineth grade. The researcher conduct the study at the seventh grade students, because the big problem is at the seventh grade. Some problems are like the students found difficulties in reading. The students didn't understand the meaning of the text. The students often forget some materials that the teacher has explained and also the students have a low of vocabularies. This is as an interview on 20th December 2014 with an English teacher at the seventh grade in SMPN 01 Sawoo, Mrs. Anis Fardiana, S.Pd. By

---

[67] See appendix 9

implementing brainstorming technique, those problem are solved. It is effective applied in teaching reading that is why this technique is worthy to be applied because it motivates students to pour their ideas easily.[68]

## 2. Time of the Research

This research was conduct in April, $20^{th} - 30^{th}$ 2015. The schedule for experiment and control class can be seen in the table below:

**Table 4.1 Experiment class schedule**

| Date | Activities |
|---|---|
| April, $20^{th}$ 2015 | Pre-test |
| April, $21^{st}$ 2015 | First treatment |
| April, $23^{rd}$ 2015 | Second treatment |
| April, $28^{th}$ 2015 | Third treatment |
| April, $30^{th}$ 2015 | Post test |

**Table 4.2 Control class schedule**

| Date | Activities |
|---|---|
| April, $20^{th}$ 2015 | Pre-test |
| April, $22^{nd}$ 2015 | First meeting |
| April, $24^{rd}$ 2015 | Second meeting |
| April, $27^{th}$ 2015 | Third meeting |
| April, $30^{th}$ 2015 | Post test |

---

[68] See Appendix 10

**B. Data Description**

The population that was used in this research was the seventh grade students of SMPN 1 Sawoo Ponorogo in academic year 2014-2015. The researcher took 52 students as a sample. From the 52 students as sample, the researcher divided them into two groups. Each group consisted of 26 students. The first group as experimental group was taught using brainstorming technique and the second group as control group was not being taught using brainstorming technique.

**1. Procedure of Experiment**

This research used experimental research which made two classes as the sample, those were VIIE as experiment class and VIIC as a control class. The number of the experiment class was 26 students. They had followed pre and post test that conducted by the researcher.

Firstly, the students were given pre-test to make them in some condition or homogenity before beginning the research. The form test was objective. There were 30 multiple choice items with 6 themes by took 60 minutes to completed. It was hold on April, 20$^{th}$ 2015.

Secondly, the first treatment of brainstorming technique held on April, 21$^{st}$ 2015. The material was descriptive text. And they used individual brainstorming before reading a text.

Thirdly, the second treatment held on April, 23$^{rd}$ 2015. The material was descriptive text too, but had different text with the first treatment. They used grouping brainstorming.

Fourthly, the third treatment held on April, 28th 2015. The material was procedure text. And they should made a brainstorming chart with their group.

Fifthly, that was post-test. It was hold on April, 30th 2015. It used to measure wheather the brainstorming technique is success or not in teaching reading comprehension.

The pre-test and post-test took factual information was limited only in descriptive text, and prosedural text. The comprehension of main ideas, inferences, factual information stated in passage, pronoun referents was assessing in the reading test. It used to know the true result whether the technique was effective or not. The test item were constructed based on the indicators and the material which were suitable with the themes and sub-themes suggested in English book for the seventh grade students of junior high school.[69] The pre-test and post-test were objective test which consist of 30 items multiple-choice. The total score is 100 and the value of each correct item is 1. One reason for choosing this type of testing was that it was easy to mark. The marker does not run the risk of being subjective.

The treatment was applied in the present study called brainstorming technique. The students supposed to go on brainstorming technique about the text before reading. It means that students pour out idea that they already know about the text before they start reading. This was done with the teacher's help who stands as a facilitator of this technique. First, teacher stated the topic and the students will brainstorm about through writing it on the whiteboard. Second,

---

[69] See Appendix 10

teacher guided the brainstorming session by asking stimulating questions which may help students remember old stored information. Third, the teacher supervised the flow of students; ideas while they were brainstorming.

The time of the reading session in the experiment was divided among the different activities done by the students. The time devoted for each session was 80 minutes. This latter was divided between brainstorming technique, reading the texts, and answering comprehension questions. Each activity took the time it needs to maximize its success. Here is the reading session's time devision we applied in the experiment:

**Table 4.3  The Reading Session's Time Devision**

| The reading session activities | Devision of the session time 80 minutes |
|---|---|
| Brainstorming | 10-15 m |
| Reading | 10 m |
| Answering questions | 15 m |
| Other comprehension activities | 45-50 m |

## 2.  Procedure of Control

This research takes VIIC as a control class which apply conventional method such us: directing the students to read aloud; using silent reading; teacher-led questioning; requesting rereading of elements of text where she deemed this to be necessary; requiring the students to highlight elements of the text; and completing written exercises related to the readings.. It is trying to make teaching and learning process naturally, so the result of the students describe the capability of the students truly.

The researcher took 26 students of VIIC class for pre-test and post-test. There are five meeting for the class. The procedure of control class is the same with the procedure of experiment class. There are pre-test, first, second and third meeting with conventional/normal mode of instruction and post test.

The material which was taught to the students were same with experimental class. That is one of the principles in the experiment research, different treatment with the same material. Not only same in the material but also the pre-test and post-test of the control class same with experiment class.

The conventional method is not a new method which is taught by the teachers in teaching and learning process. So, the students are familiar with the method. It is good method to make the students paying attention to the teachers and also it will suitable method used by the teachers to transfer their knowledge to the students. But some weaknesses from this method are that the students will be bored, do not interesting and the class is very croweded, because the teachers can not control the situation in the class.

The teaching and learning process using conventional method has some steps, they are:

a. Each students are given one of reading text copies.

b. The students read the text.

c. The students find the difficult words from the text uses dictionarry.

d. The students translate the text into Indonesian language with the teacher.

e. The teacher explains and discusses the text together with the students.

From the result above, it can be conclude that, the conventional method is a good method to transfer knowledge from the teacher to the students, because it is easy and familiar method, but the students will be in passive place, bored and also they seldom to think critically.

3. **The Result of Students' Pre Test in Experimental Group (7E)**

The table below showed the score of the pre test of the students taught using brainstorming technique.

**Table 4.4  The Score of Students' Pre Test In Experimental Group**

| No. | Name | Scores |
|-----|------|--------|
| 1 | Aditya Ilham M. | 64 |
| 2 | Anggita Fitri Akhiri | 80 |
| 3 | Anipa Putrima | 67 |
| 4 | Bima Muhammad Reza | 67 |
| 5 | Chintia Nur Afifah | 80 |
| 6 | Dewi Anita Sari | 84 |
| 7 | Dewita Riswanda | 87 |
| 8 | Diah Kartika Sari | 80 |
| 9 | Dian Ayu Nur Afifah | 54 |
| 10 | Fitria Ayu Fatmawati | 74 |
| 11 | Gigih Abdiamsyah | 70 |
| 12 | Kurniawan Hadi W. | 67 |
| 13 | Mohammad Romdhoni A. P | 67 |
| 14 | Muhammad Iksal R. | 67 |
| 15 | Muhammad Reindy R. | 57 |
| 16 | Nely Nopita Sari | 80 |
| 17 | Nur Rohman | 70 |
| 18 | Rahmawan Wildan | 67 |

| No. | Name | Scores |
|-----|------|--------|
| 19 | Ridan Mustofa | 54 |
| 20 | Ridata Dwi Saputri | 70 |
| 21 | Rizky Mahendra | 80 |
| 22 | Royana Sabilla | 80 |
| 23 | Sapta Kumala | 77 |
| 24 | Sonia Ajeng Okta W. | 80 |
| 25 | Sukma Fradana | 77 |
| 26. | Vicky Aji Purnama | 54 |
| | N = 26 | 1854 |

From the table above, could be seen that the highest scores for experiment class is 87; there is only one student who got the highest score. The lowest score for the experiment class is 54; the are three students who have the lowest score. The total of experiment class score is 1854.

**4. The Result of Students' Pre Test in Control Group (7C)**

The table below showed the score of the pre test of the students not being taught using brainstorming technique.

**Table 4.5  The Score of Students' Pre Test in Control Group**

| No. | Name | Scores |
|-----|------|--------|
| 1 | Abdul Aziz Mustaqim | 67 |
| 2 | Ade Yusron Nasrullah | 84 |
| 3 | Adji Ahmad Alfadila | 74 |
| 4 | Alfian Rahmawati | 40 |
| 5 | Andi Sugiarto | 80 |
| 6 | Anida Mar'atusholikah | 84 |
| 7 | Desita Indah Lestari | 74 |

| No. | Name | Scores |
|-----|------|--------|
| 8 | Dewi Yuniawati | 77 |
| 9 | Dimas Rizky Ikhsanuddin | 84 |
| 10 | Eko Siswanto | 60 |
| 11 | Ema Tristi Duana | 80 |
| 12 | Evi Nur Indahsari | 44 |
| 13 | Fery Krisna Wahyudi | 80 |
| 14 | Henny Muthaqida | 80 |
| 15 | Linda Mersilina Salim | 47 |
| 16 | Mita Retnanda | 67 |
| 17 | Mukti Nurcahyo | 74 |
| 18 | Naufal Raihan Octaviano | 84 |
| 19 | Okky Rendra Saputra | 54 |
| 20 | Restu Nauladhani Fitriyah | 40 |
| 21 | Riki Aji Pamungkas | 80 |
| 22 | Septiara Indah Novitasari | 47 |
| 23 | Tomi Widianto | 77 |
| 24 | Wahyu Agung Hidayat | 74 |
| 25 | Wahyu Tyas Radita | 64 |
| 26. | Wahyu Wika Wardani | 74 |
|  | N= 26 | 1790 |

The highest score for controlled class is 84; there are four students who got the highest score. The total lowest for the controlled class is 40; there are two students who have the lowest score. The total of the controlled class score is 1790. The differentiate result of the experiment class and controlled class is 64.

## 5. The Result of Students' Post Test in Experimental Group (Variable X)

The table below showed the score of the post test of the students taught using brainstorming technique.

**Table 4.6 The Score of Students' Post Test in Experimental Group**

| No. | Name | Scores |
|-----|------|--------|
| 1 | Aditya Ilham M. | 90 |
| 2 | Anggita Fitri Akhiri | 84 |
| 3 | Anipa Putrima | 87 |
| 4 | Bima Muhammad Reza | 90 |
| 5 | Chintia Nur Afifah | 77 |
| 6 | Dewi Anita Sari | 97 |
| 7 | Dewita Riswanda | 87 |
| 8 | Diah Kartika Sari | 84 |
| 9 | Dian Ayu Nur Afifah | 87 |
| 10 | Fitria Ayu Fatmawati | 87 |
| 11 | Gigih Abdiamsyah | 90 |
| 12 | Kurniawan Hadi W. | 84 |
| 13 | Mohammad Romdhoni A. P | 70 |
| 14 | Muhammad Iksal R. | 77 |
| 15 | Muhammad Reindy R. | 84 |
| 16 | Nely Nopita Sari | 90 |
| 17 | Nur Rohman | 77 |
| 18 | Rahmawan Wildan | 84 |
| 19 | Ridan Mustofa | 87 |
| 20 | Ridata Dwi Saputri | 87 |
| 21 | Rizky Mahendra | 84 |
| 22 | Royana Sabilla | 70 |
| 23 | Sapta Kumala | 87 |
| 24 | Sonia Ajeng Okta W. | 87 |
| 25 | Sukma Fradana | 77 |
| 26. | Vicky Aji Purnama | 84 |
| | N= 26 | 2189 |

From the table above, could be seen that the highest scores for experiment class is 97; there is only one student who got the highest score. The lowest score for the experiment class is 70; the are two students who have the lowest score.

The total of experiment class score is 2189. So that, could be concluded the post test of the students taught using brainstorming technique was good.

## 6. The Result of Students' Post Test in Control Group (Variable Y)

The table below showed the score of the post test of the students not being taught using brainstorming technique.

**Table 4.7 The Score of Students' Post Test in Control  Group**

| No. | Name | Scores |
|---|---|---|
| 1 | Abdul Aziz Mustaqim | 74 |
| 2 | Ade Yusron Nasrullah | 80 |
| 3 | Adji Ahmad Alfadila | 64 |
| 4 | Alfian Rahmawati | 54 |
| 5 | Andi Sugiarto | 70 |
| 6 | Anida Mar'atusholikah | 80 |
| 7 |  Desita Indah Lestari | 87 |
| 8 | Dewi Yuniawati | 80 |
| 9 | Dimas Rizky Ikhsanuddin | 74 |
| 10 | Eko Siswanto | 64 |
| 11 | Ema Tristi Duana | 87 |
| 12 | Evi Nur Indahsari | 64 |
| 13 | Fery Krisna Wahyudi | 80 |
| 14 | Henny Muthaqida | 70 |
| 15 | Linda Mersilina Salim | 64 |
| 16 | Mita Retnanda | 70 |
| 17 | Mukti Nurcahyo | 80 |
| 18 | Naufal Raihan Octaviano | 80 |
| 19 | Okky Rendra Saputra | 70 |
| 20 | Restu Nauladhani Fitriyah | 64 |
| 21 | Riki Aji Pamungkas | 70 |
| 22 | Septiara Indah Novitasari | 74 |
| 23 | Tomi Widianto | 70 |

| No. | Name | Scores |
|---|---|---|
| 24 | Wahyu Agung Hidayat | 74 |
| 25 | Wahyu Tyas Radita | 70 |
| 26. | Wahyu Wika Wardani | 80 |
| | N= 26 | 1894 |

From the table above, could be seen that the post test of the students in control group that not being taught using brainstorming technique was varieties. There were 2 students got 87, 7 students got 80, 4 students got 74, 7 students got 70, 5 students got 64, and 1 students got 54. So that, could be concluded the post test students not being taught using brainstorming technique was moderate.

### 7. The Result of Assumption Test for Parametric Statistic

### a. Normality

Normality test was conducted to known whether the data distribution was normal distribution or not.[70] For this test, it would be proposed the hypothesis as follow:

Ho: the data was not normal distribution

Ha: the data was normal distribution

---

[70] Retno Widyaningrum, Statistik (Ponorogo: STAIN Ponorogo Press, 2009), 206.

**Table 4.8 Normality of Data and Calculation of The Students' Post Test in Experimental Group**

| X | F | FX | $X^2$ | $FX^2$ |
|---|---|---|---|---|
| 97 | 1 | 97 | 9409 | 9409 |
| 90 | 4 | 360 | 8100 | 32400 |
| 87 | 8 | 696 | 7569 | 60552 |
| 84 | 7 | 588 | 7056 | 49392 |
| 77 | 4 | 308 | 5929 | 23716 |
| 70 | 2 | 140 | 4900 | 9800 |
| TOTAL | $\sum F = 26$ | $\sum FX = 2189$ | $\sum X^2 = 42963$ | $\sum FX^2 = 185269$ |

Calculate the average:

$$Mx = \frac{\sum fx}{N}$$

$$= \frac{2189}{26}$$

$$= 84.19$$

Calculate the deviation standard:

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

$$SD_X = \sqrt{\frac{185269}{26} - \left(\frac{2189}{26}\right)^2}$$

$$SD_X = \sqrt{7125.73 - (84.19)^2}$$

$$SD_X = \sqrt{7125.73 - 7087.95}$$

$$SD_X = \sqrt{37.78}$$

$$SD_X = 6.14$$

**Table 4.9  The Result of Normality Test for Experimental Group**

| X | F | Fkb | F/n | Fkb/n | Z | P≤Z | $a_2$ | $a_1$ |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 97 | 1 | 26 | 0.038 | 1 | 2.08 | 0.9812 | 0.0188 | 0.0192 |
| 90 | 4 | 25 | 0.153 | 0.961 | 0.945 | 0.8264 | 0.1346 | 0.0184 |
| 87 | 8 | 21 | 0.307 | 0.807 | 0.457 | 0.6736 | 0.1334 | 0.1736 |
| 84 | 7 | 13 | 0.269 | 0.5 | -0.030 | 0.4880 | 0.012 | <u>0.257</u> |
| 77 | 4 | 6 | 0.153 | 0.230 | -1.16 | 0.1230 | 0.107 | 0.046 |
| 70 | 2 | 2 | 0.076 | 0.076 | -2.30 | 0.0107 | 0.0653 | 0.0107 |

$D_{(0,05,26)}$ from index is 0.27

Ha was accepted if $a_1 \max \leq D_{Index}$

Because the maximun value of $a_1$ was 0.257 (0.25) in which the index was less then the D index, so the decision was to accept Ha, which meant the data was normality distributed.

**Table 4.10 Normality of Data and Calculation of The Students' Post Test in Control Group**

| Y | F | FY | $Y^2$ | $FY^2$ |
|---|---|---|---|---|
| 87 | 2 | 174 | 7569 | 15138 |
| 80 | 7 | 640 | 6400 | 44800 |
| 74 | 4 | 216 | 5476 | 21904 |
| 70 | 7 | 490 | 4900 | 34300 |
| 64 | 5 | 320 | 4096 | 20480 |
| 54 | 1 | 54 | 2916 | 2916 |
| TOTAL | $\sum F = 26$ | $\sum FY = 1894$ | $\sum Y^2 = 31357$ | $\sum FY^2 = 139538$ |

Calculate the average:

$$My = \frac{\sum fy}{N}$$

$$My = \frac{1894}{26}$$

$$My = 72.84$$

Calculate the deviation standard:

$$SD_y = \sqrt{\frac{\sum fy^2}{n} - \left(\frac{\sum yx}{n}\right)^2}$$

$$SD_y = \sqrt{\frac{139538}{26} - \left(\frac{1894}{26}\right)^2}$$

$$SD_y = \sqrt{5366.84 - (72.84)^2}$$

$$SD_y = \sqrt{5366.84 - 3506.56}$$

$$SD_y = \sqrt{60.28}$$

$$SD_y = 7.76$$

**Table 4.11 The Result of Normality Test for Control Group**

| Y | F | Fkb | F/n | Fkb/n | Z | P≤Z | $a_2$ | $a_1$ |
|---|---|-----|-----|-------|---|-----|-------|-------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 87 | 2 | 26 | 0.076 | 1 | 1.823 | 0.9656 | 0.0344 | 0.0416 |
| 80 | 7 | 24 | 0.269 | 0.923 | 0.922 | 0.8212 | 0.1018 | <u>0.1672</u> |
| 74 | 4 | 17 | 0.153 | 0.653 | 0.149 | 0.5557 | 0.0973 | 0.0557 |
| 70 | 7 | 13 | 0.269 | 0.5 | -0.365 | 0.3594 | 0.1406 | 0.1284 |
| 64 | 5 | 6 | 0.192 | 0.230 | -1.138 | 0.1292 | 0.1008 | 0.0912 |
| 54 | 1 | 1 | 0.038 | 0.038 | -2.426 | 0.0078 | 0.0302 | 0.0078 |

$D_{(0,05,26)}$ from index is 0.27

Ha was accepted if $a_1 \max \leq D_{Index}$

Because the maximun value of $a_1$ was 0.1672 (0.16) in which the index was less then the D index, so the decision was to accept Ha, which meant the data was normality distributed.

**b. Homogenity**

Homogenity test is the variance ratio test between two group or more.[71] This can be tested by Harley test.

The formula is:

$$F(max)= \frac{Var\ max = SD^2 max}{Var\ min = SD^2 min}$$

$$F(max)= \frac{Var\ max = 7.76^2}{Var\ min = 6.14^2}$$

$$F(max)= \frac{Var\ max = 60.2796}{Var\ min = 37.7733}$$

$$F(max) = 1.59$$

Db      = n-1;k

26-1;2  =25;2

Ho= data is homogenous

Ha= data not homogenous

Fmax index is 2.40

So Fmax was 1.59 in which the index was less then the Fmax index (2.40), so the decision was to accept Ha, which meant the data was homogeny distributed.

---

[71] Ibid. 214.

### C. Data Analysis

### 1. The Analysis of Student's Post Test of Experimental Group

To obtain data, the researcher uses a reading comprehension test to 26 students for experimental group and 26 students for control group, to know the reading skill students at the seventh grade of SMPN 1 Sawoo Academic Year 2014-2015 effective or not, the researcher applied "t" test formula as stated below.

The first step is calculate the interval and class for make the table distribution:

$$I = \frac{R}{K}$$

K=1+3.322 log n

K= 1+3.322 log 26

K= 1+(3.322X1.414973348)

K= 1+4.700541462

K= 5.700541462 (6)

Highest score = 97

Lowest score  = 70

R = H-L+1

R= 97-70+1 = 28

$$I = \frac{R}{K} = \frac{28}{6} = 4.7 \ (5)$$

So, from the data statistic above, it is known that the total range is 28, the total of class is 6 and interval is 5.

**Table 4.12 The Computation of Students' Post Test in Experimental**

**Group**

| Score X | F | X | x' | fx' | $x'^2$ | $fx'^2$ |
|---------|---|---|-----|-----|-----|------|
| 95-99 | 1 | 97 | +3 | +3 | 9 | 9 |
| 90-94 | 4 | 90 | +2 | +8 | 4 | 16 |
| 85-89 | 8 | 87 | +1 | +8 | 1 | 8 |
| 80-84 | 7 | 84 | 0 | 0 | 0 | 0 |
| 75-79 | 4 | 77 | -1 | -4 | 1 | 4 |
| 70-74 | 2 | 70 | -2 | -4 | 4 | 8 |
| Total | 26 | - | - | 11 | 19 | 45 |

a.  Finding Average (Mean) of the variable X

$$M_x = M' + i \left( \frac{\sum fx'}{n1} \right)^2$$

$$M_x = 84 + 5 \left( \frac{11}{26} \right)^2$$

$$M_x = 84 + 5(0.423076923)^2$$

$$M_x = 84 + 5X\ 0.178994082$$

$$M_x = 84 + 0.89497041$$

$$M_x = 84.89497041$$

b.  Look for $SD_x$

$$SD_x = i \sqrt{\frac{\sum(f.x'^2)}{n} - \left( \frac{\sum f.x'}{n} \right)^2}$$

$$SD_x = 5 \sqrt{\frac{45}{26} - \left( \frac{11}{26} \right)^2}$$

$$SD_x = 5\sqrt{1.730769231 - (0.423076923)^2}$$

$$SD_x = 5\sqrt{1.730769231 - 0.178994082}$$

$$SD_x = 5\sqrt{1.551775149}$$

$$SD_x = 5x\ 1.245702673$$

$$SD_x = 6.228513364$$

From the calculation above, it is known Mx = 84.8949 and SDx = 6.2285.

## 2. The Analysis of Student's Post Test of Control Group

The first step is calculate the interval and class for make the table distribution:

$$I = \frac{R}{K}$$

K=1+3.322 log n

K= 1+3.322 log 26

K= 1+(3.322X1.414973348)

K= 1+4.700541462

K= 5.700541462 (6)

H= 87   L= 54

R= H-L+1

R= 87-54+1

R= 34

$$I = \frac{R}{K}$$

$$I = \frac{34}{6} = 5.7\ (6)$$

So, from the data statistic above, it is known that the total range is 34, the total of class is 6 and interval is 6.

**Table 4.13 The Computation of Students Post Test Control Group**

| Score Y | F | Y | y' | fy' | $y'^2$ | $fy'^2$ |
|---------|---|---|-----|-----|--------|---------|
| 84-89 | 2 | 87 | +3 | +6 | 9 | 18 |
| 78-83 | 7 | 80 | +2 | +14 | 4 | 28 |
| 72-77 | 4 | 74 | +1 | +4 | 1 | 4 |
| 66-71 | 7 | 70 | 0 | 0 | 0 | 0 |
| 60-65 | 5 | 64 | -1 | -5 | 1 | 5 |
| 54-59 | 1 | 54 | -2 | -2 | 4 | 4 |
| **Total** | **26** | - | - | **17** | **19** | **59** |

a. Finding Average (Mean) of the variable Y

$$M_Y = M' + i \left( \frac{\sum fY'}{n1} \right)^2$$

$$M_Y = 70 + 6 \left( \frac{17}{26} \right)^2$$

$$M_Y = 70 + 6 \,(0.653846153)^2$$

$$M_Y = 70 + 6 \ x \ 0.427514792$$

$$M_x = 70 + 2.565088757$$

$$M_Y = 72.56508876$$

b. Look for $SD_y$

$$SD_y = i \sqrt{\frac{59}{26} - \left( \frac{17}{26} \right)^2}$$

$$SD_y = 6\sqrt{2.269230769 - (0.653846153)^2}$$

$$SD_y = 6\sqrt{2.269230769 - 0.427514792}$$

$$SD_y = 6\sqrt{1.841715977}$$

$$SD_y = 6x1.357098367$$

$$SD_y = 8.1425902$$

From the calculation above, it is known Mx = 72.5650 and SD = 8.1425.

### 3. Testing Hypothesis ($t_{test}$)

From both table above, the researcher compare the mean score of students' reading comprehension skill taught using brainstorming technique (X) and the students' reading comprehension skill not being taught using brainstorming technique (Y) with this steps:

a. Finding Average (Mean) of the variable X and Y

$$M_x = M' + i \left(\frac{\sum fx'}{n1}\right)^2$$

$$M_x = 84 + 5\left(\frac{11}{26}\right)^2$$

$$M_x = 84 + 5(0.423076923)^2$$

$$M_x = 84 + 5X\ 0.178994082$$

$$M_x = 84 + 0.89497041$$

$$M_x = 84.89497041$$

$$M_Y = M' + i \left(\frac{\sum fY'}{n1}\right)^2$$

$$M_Y = 70 + 6\left(\frac{17}{26}\right)^2$$

$$M_Y = 70 + 6\,(0.653846153)^{\quad 2}$$

$$M_Y = 70 + 6\ x\ 0.427514792$$

$$M_x = 70 + 2.565088757$$

$$M_Y = 72.56508876$$

b. Look for $SD_x$ and $SD_y$

$$SD_x = i\sqrt{\frac{\sum(f.x'^2)}{n} - \left(\frac{\sum f.x'}{n}\right)^2}$$

$$SD_x = 5\sqrt{\frac{45}{26} - \left(\frac{11}{26}\right)^2}$$

$$SD_x = 5\sqrt{1.730769231 - (0.423076923)^2}$$

$$SD_x = 5\sqrt{1.730769231 - 0.178994082}$$

$$SD_x = 5\sqrt{1.551775149}$$

$$SD_x = 5x\ 1.245702673$$

$$SD_x = 6.228513364$$

$$SD_y = i\sqrt{\frac{59}{26} - \left(\frac{17}{26}\right)^2}$$

$$SD_y = 6\sqrt{2.269230769 - (0.653846153)^2}$$

$$SD_y = 6\sqrt{2.269230769 - 0.427514792}$$

$$SD_y = 6\sqrt{1.841715977}$$

$$SD_y = 6x1.357098367$$

$$SD_y = 8.1425902$$

c. Determining standard error mean variable X and Y

$$SE_{Mx} = \frac{SDx}{\sqrt{n1-1}}$$

$$SE_{Mx} = \frac{6.228513364}{\sqrt{26-1}}$$

$$SE_{Mx} = \frac{6.228513364}{\sqrt{25}}$$

$$SE_{Mx} = \frac{6.228513364}{5}$$

$$SE_{Mx} = 1.245702673$$

$$SE_{My} = \frac{SDy}{\sqrt{n2-1}}$$

$$SE_{My} = \frac{8.1425902}{\sqrt{26-1}}$$

$$SE_{My} = \frac{8.1425902}{\sqrt{25}}$$

$$SE_{My} = \frac{8.1425902}{5}$$

$$SE_{My} = 1.62851804$$

d. Difference standard error score of the means variable X and variable Y

$$SE_{M1-M2} = \sqrt{SE_{M1}^2 + SE_{M2}^2}$$

$$SE_{M1-M2} = \sqrt{1.245702673^2 + 1.62851804^2}$$

$$SE_{M1-M2} = \sqrt{1.55177515 + 2.652071007}$$

$$SE_{M1-M2} = \sqrt{4.203846157}$$

$$SE_{M1-M2} = 2.050328305$$

e. to score

$$t_o = \frac{MX - MY}{SEm\,1-m\,2}$$

$$t_o = \frac{84.89497041 - 72.56508876}{2.050328305}$$

$$t_o = \frac{12.32988166}{2.050328305}$$

$$t_o = 6.013613347 \quad (6.01)$$

## D. Discussion

From the computation above, it was shown that the difference coefficient of students taught using brainstorming technique and the students not being taught using brainstorming is 6.01 it was used to find out whether the difference coefficient was a significccant coefficient or not, and furthermore it could be used as a basic to generate the population.

Hypothesis test $(t_o)$ at 6.01 from the computation above would be compared to the "t" index $(t_t)$ with the condition stated below:

1) If the $t_o \geq t_t$ $H_a$ was accepted. It meant that the mean difference of both variables was a significant difference.

2) If the $t_o < t_t$ $H_a$ was rejected. It mean that there was no mean difference of those variables. It also meant, the mean difference of those variables was not

a significant difference, but the difference that was happened by the accident as a result from error sampling.

To determine the to was by checking db and consulted with the $t_t$ score:

Db= (N1+N2)-2

   = (26+26)-2

   = 52-2

   = 50

From the db score, the researcher could known that in 5% signification level $t_o = 6.01$ and $t_t = 2, 01$. Based on this statement, the researcher interpret that there was a signifiant difference between the students taught using brainstorming technique and the students not being taught using brainstorming tecnique, it implies that the students taught using brainstorming technique achieve a better score in reading comprehension.

So Alternative hypothesis $(H_a)$ that state that the students taught using brainstorming technique will achieve a better score in reading was accepted.

From the data above, the researcher could conclude that there was a significant difference in reading score between the students taught using brainstorming technique and the students not being taught using brainstorming technique. In other word, technique of brainstorming was effective in improving students' reading comprehension achievement at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015.

It is suitable with previous study from Muayyad Mohammed Saed.[72] Brainstorming is the most effective teaching technique which allows students to freely express themselves and generate indefinite number of ideas on a topic relating to a given text prior to the reading activity in class. So that, this technique made the students more interest and enjoy during teaching and learning process. Beside that, they can generate their ideas freely.

---

[72] Muayyad Moh. Saed, "The Effectiveness of Brainstorming on Teaching ESP Reading at University Level", 2011. Available of http://www.iasj.net/iasj?func=fulltext&aId=17650. Retrivied on 6 March 2015.

**CHAPTER V**

**CLOSING**

**A. Conclusion**

Based on the data described previously, the researcher draws the conclusion that using brainstorming technique in pre-reading activities can improve students' reading comprehension achievement at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015. The students who are taught using brainstorming technique have a better score than those who are not taught using brainstorming technique.

The result of this research in this study is the mean score of the post-test from the experimental group is higher (84.17) than post-test from controlled group (70.42). It has been found that the comparasion value ($t_0$) between students' reading comprehension achievement who are taught using brainstorming technique and who are not is 6.01. This is higher than "$t_t$" value in the table, which is $t_t = 2.01$ at the level of significant 5%, with db= 50. So, Ha is accepted.

In other word, brainstorming technique was effective to improve students' reading comprehension achievement at the seventh grade of SMPN 1 Sawoo in academic year 2014/2015.

**B. Suggestion**

Considering the conslusion above, the researcher would like to suggest:

1. For the School

The school is suggested to improve the sytem andfacilities for a better condition in teaching ang learning especially for students. So, they will maximize their skill for a good achievement.

2. For the English teachers

Teachers should be creative to choose the best method to apply in learning process in order to make students interested in attending the lesson; The teachers should present the language in an enjoyable, relaxed and understandable way; The teachers is not only as the information giver but also as a facilitator. They have to give students guidance and direction how to competence a text; The teachers should teach using appropriate tchnique to teach the students and make variation of technique in every meeting.

3. For the Students

The students should be obligated to bring dictionary in every English class; The students are hoped to be active in learning process and they are hoped not be shy in acting out their role; It is better for students to keep sharing each other. Because, when the students learning together, they will take and give understanding for wide overview.

4. For Parents

Parents should give more support to their children to study hard for all lesson, especially in English class.s