THE EFFECT OF USING CONCEPT MAPPING LEARNING STRATEGY ON THE ELEVENTH GRADE VOCATIONAL HIGH SCHOOL STUDENTS' READING COMPREHENSION ACHIEVEMENT

THESIS

Composed to fulfill one of the requirements to obtain S1 Degree at the English Education Study Program, Language and Arts Department, Faculty of Teacher Training and Education, The University of Jember

By:

Nurdiana Aisyah Hikmawati

NIM: 130210401059

ENGLISH EDUCATION PROGRAM

LANGUAGE AND ARTS DEPARTMENT

TEACHER TRAINING AND EDUCATION FACULTY

JEMBER UNIVERSITY

DEDICATION

This thesis is honorably dedicated to:

1. *My beloved parents, Mohammad Syaifuddin, A.Md. and Lisa Wahyu Widarati, S.H. Thank you for your endless love and never ending support.*
2. *My beloved mother, Alm. Suryani, S.H.*
3. *My beloved grandmother, Maryana.*

MOTTO

"Keep reading. It's one of the most marvelous adventures anyone can have."

(Lloyd Alexander)

(Source: www.goodhousekeeping.com)

STATEMENT OF THESIS AUTHENTICITY

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I certify that the content of the thesis is the result of work which has been carried out since the official commencement date of approved thesis title; this thesis has not been submitted previously, in whole or in part, to qualify for any other academic award, ethics procedure and guidelines of the thesis writing from the university and the faculty have been followed. I am aware of the potential consequences of the procedures and guidelines, e.g. cancellation of my academic award.

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The Writer

Nurdiana Aisyah H.

130210401059

CONSULTANTS' APPROVAL

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Name	**: Nurdiana Aisyah Hikmawati**
Identification Number	**: 130210401059**
Level	**: 2013**
Place, Date of Birth	**: Jember, October 10th, 1995**
Department	**: Language and Art Education**
Program	**: English Education**

Approved By:

Consultant I	Consultant II
Dr. Aan Erlyana Fardhani, M.Pd.	Dr. Budi Setyono, M.A.
NIP. 19650309 198802 2 001	NIP. 19630717 199002 1 001

APPROVAL OF THE EXAMINATION COMMITTEE

This thesis is approved and accepted by the Examination Committee of the Faculty of Teacher Training and Education, Jember University.

Day : Thursday

Date : 19th of April 2018

Place : Faculty of Teacher Training and Education, Jember University

Examination Committee

Chairperson,	Secretary
Drs. Bambang Suharjito, M.Ed.	Dr. Budi Setyono, M.A.
NIP. 19611025 198902 1 004	NIP. 19630717 199002 1 001

Members

Member I	Member II
Dr. Aan Erlyana Fardhani, M.Pd.	Eka Wahjuningsih, S.Pd M.Pd.
NIP. 19650309 198802 2 001	NIP. 19700612 199512 2 001

The Dean

The Faculty of Teacher Training and Education

Prof. Drs. Dafik, M.Sc., Ph.D.

NIP. 19680802 199303 1 004

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3. The Chairperson of the English Education Program
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Finally, I do hope that this thesis will be a useful contribution for the sake of the improvement of English teaching, especially the teaching of reading. Any criticism and valuable suggestion would be appreciated.

The Writer,

Nurdiana Aisyah Hikmawati

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The Effect of Using Concept Mapping Learning Strategy on the Eleventh Grade Vocational High School Students' Reading Comprehension Achievement; Nurdiana Aisyah Hikmawati, 130210401059; 2018; English Language Education Study Program, Language and Arts Department, Faculty of Teacher Training and Education, Jember University.

As part of learning strategies, Concept Mapping Strategy (CMS) has been used in teaching reading in EFL context and has become an important issue of investigation. Some advantages of using CMS are: (1) it allows students to think deeply about concepts and to store information more effectively in their memory; (2) CMS is an excellent exercise for the promotion of creative thinking and identification of new problem solving method; (3) CMS improves students' ability to learn autonomously and become independent language learners; (4) CMS organizes different concepts and visualizes the relationship between the main concepts; (5) CMS allows students to concentrate only on the key concepts and ideas.

This research was intended to investigate the effect of using CMS on students' reading comprehension achievement of report text. The research area was SMK Negeri 5 Jember. The research participants i.e. the experimenta; and control class were determined by using cluster random sampling after testing the mean scores of the English test using ANOVA. Based on the calculation of ANOVA, XI PMT 1 was chosen as the experimental class, while XI PMT 2 was chosen as the control class.

The design of this research was a quasi-experimental research with pot-test only design. In this design, the experimental and control class received different treatments. The experimental class was taught by CMS, while the control class was taught by scientific approach. The post-test was given to the both classes after they received the treatments. Based on the result of Independent sample T-test, it was found that the value of significant (2 tailed) was 0,00. Thus, it can be concluded that the hypothesis (H_0) was rejected while the alternative hypothesis

(H_a) was accepted. In other word, it can be said that there was a significant effect of using Concept Mapping learning strategy on students' reading comprehension achievement. Considering the finding of this research, it is suggested for the English teacher to use Concept Mapping Learning Strategy to help students comprehend English text better

CHAPTER I. INTRODUCTION

This introductory chapter gives readers information about the research topic, the issue being investigated, the importance of investigating the issue, the position of this research in relation to the related previous studies, the research focus, and the contributions.

1.1 Research Background

As part of learning strategies, Concept Mapping (henceforth CM) has been used in teaching reading in EFL context. In teaching reading, there is a phenomenon where EFL students are not able to comprehend a text. It has become a serious problem that is needed to be solved. CM is a learning strategy that is used to help the students comprehend the concept in a text by splitting the general concept into the specific ones. The use of CM in teaching reading has become an important issue to be investigated because EFL students need appropriate teaching strategy in order to be effective readers (Teo *et al.* 2016). Dealing with the issue, the present study investigates the effectiveness of Concept Mapping as a strategy that helps students to achieve a better comprehension in reading texts.

The issue on the effectiveness of CM in language teaching is important to be known. Some relate to the findings of previous studies. In Iran, Khaghaninejad and Arefinejad (2015) conducted an experimental research on Concept Mapping by taking EFL university students as the research participants. The result of the study proved that CM positively affects students' reading comprehension. Still in the same country, Nosratinia, Mirsafaee, and Shakeri (2013) also investigated the effect of applying CM in reading on EFL advanced students' self regulation. The findings revealed that CM was an effective strategy and significantly gave a positive impact to the students' reading comprehension achievement. In addition, Rasyidah and Mardiansyah (2014) examined the effect of CM on civil engineering students' English reading comprehension. The result showed that there was an improvement of students' reading comprehension achievement that

was taught by CM. Those studies indicated that CM gave a significant impact on EFL university students' reading performance in Middle East countries.

According to the findings of previous studies, it can be concluded that CM does not only improve reading performance, but also increase self regulation for students at advanced level. Besides, it can be found that the research issue on the use of CM for vocational high school students is under explored since those vocational students are categorized as beginner-level readers compared to university students. Therefore, the researcher wants to fill the gap by conducting an investigation on how CM helps vocational high school students comprehend a text. The main focus of this study is to investigate the effect of CM as a learning strategy on vocational high school students' reading comprehension. The researcher conducted an experimental study with posttest only design at one of the vocational high schools in Jember.

Based on some considerations above, the researcher conducted an experimental research dealing with the use of CM in teaching reading entitled, "**The Effect of Using Concept Mapping Learning Strategy on the Eleventh Grade Vocational High School Students' Reading Comprehension Achievement**".

1.2 Research Problem

The present study is focused on to answer the following research question:
"Is there any significant effect of using Concept Mapping Learning Strategy on the eleventh grade vocational high school students' reading comprehension?".

1.3 Research Contribution

The results of the research are expected to give significant contributions for English teachers and future researchers empirically and practically.

1. Empirical Contribution

   The result of this research is expected to be a consideration for future researchers who want to investigate the effectiveness of Concept Mapping Learning Strategy in teaching reading comprehension by using

experimental design, with vocational high school students as the research participants.

2. Practical Contribution

   This research is expected to be beneficial for the English teachers. They can use this research to find out the appropriate procedure of Concept Mapping to teach reading comprehension. By applying this strategy to teach reading, it will help the students comprehend the text easily and gain the information in the text. In other words, implementing Concept Mapping for teaching reading comprehension will help the English teachers improve students reading comprehension achievement.

CHAPTER II. REVIEW OF RELATED LITERATURES

This chapter presents the theoretical framework of Concept Mapping Learning Strategy, the conceptual framework of Concept Mapping of reading, review studies on Concept Mapping, and research hypothesis.

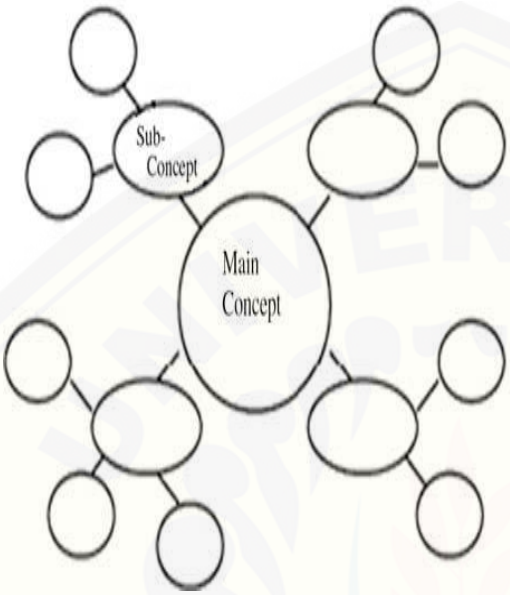
2.1 Concept Mapping Strategy (CMS): Theoretical Framework

Concept Mapping was originally developed in 1972 by Joseph D. Novak and his colleagues. Novaks' work was based on David Ausubels' fundamental idea in 1968 which notes that learning takes place by the assimilation of new concepts and proportions into existing concept and proportional frameworks held by the learner (Canas 2003). This learning strategy has been widely used as a teaching strategy in EFL countries. In English teaching learning context, CM is aimed to gain a better and deeper understanding of a knowledge or concept.

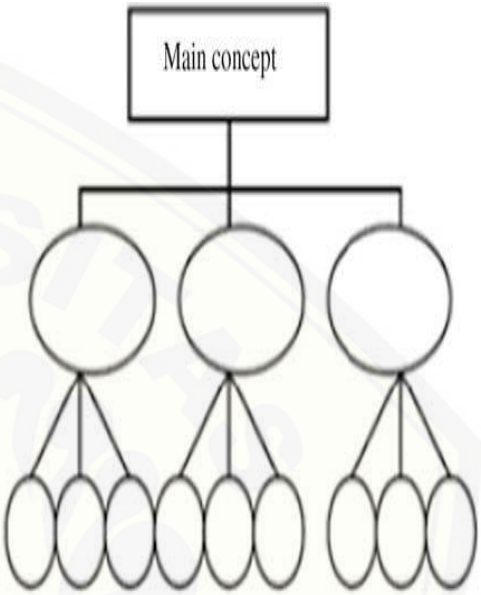
There are four key functions of CM as explained by Hilbert and Renkl (2008:195). The first is CM is an elaboration that allows the previously acquired knowledge to relate to the new information in order to determine the main ideas and their relationship with other supporting ideas. Second, CM is a reduction that identifies and retains the central idea to form a global scheme. Third, it acts as a coherence that favors the construction of a coherent information structure so that it can be used to identify the ruptures in textual coherence. Last, a metacognition that favors the detection and repairs of bias and gaps that may appear in the process of comprehension.

According to Liu *et al* (2009) Concept Mapping is a strategy that helps learners organize information through visual aids while a concept map is a diagram showing the relationships among concepts which are enclosed in circles or boxes, and the relationships between concepts are indicated by connecting lines that link them together. Moreover, the concepts are presented from the general ones into the specific ones. As explained by Liu *et al* (2009) Concept Mapping can be classified in two categories. The first is the development from inner to outer, and the other is development from upper to lower. In inner to outer form, the concept

are separated from the inner part into the outer part while in upper to lower form, the concept are separated from the upper side into the lower side as shown in the picture below:



Picture 1. Inner to outer concept maps



Picture 2. Upper to lower concept maps

In addition, Liu (2009) explains that there are two approaches in applying Concept Mapping in the classroom. The first is called "Learner-Constructed Concept Map" and the other is called "Expert-Constructed Concept Map". In "Learner-Constructed Concept Map" the teacher asks learners to construct Concept Map themselves after explaining and demonstrating Concept Mapping to them. This approach will help the students to recognize the important concept, relationship, and structures of a text. Meanwhile, in "Expert-Constructed Concept Map" the instructor develops their own Concept Map without involving the students in making the Concept Map. Huang (2005) adds that the teacher can use these two ways of Concept Mapping alternately in order to trigger meaningful learning. In this case, the researcher used the combination of both approaches. The researcher constructed a concept map in order to give an example to the

students, and after the students understood, they were asked to construct their own concept map.

Furthermore, Fraser (1993:398) proposes four principles to construct CM. The first is Concepts which are put in geometric forms or rectangles. They can be showed by key words, simple drawings, or phrases. Lines or arcs are utilized to link the concept. Sometimes, linking words are written on the arcs to characterize the relationship between the two concepts. Second, the linking words should illuminate the relation between two concepts. Together with the two concepts, the linking words form a proposition. Third, there is no right or wrong map exists. Various persons may draw different maps for the same conceptual domain. The last, the interconnections between concepts give rise to the power of the concept map. More interconnections and cross linkages are an indication of a greater complexity and sophistication of understanding.

Concept Mapping has some advantages for learning process. Canas (2003) explains four advantages of Concept Mapping. The first is that Concept Mapping allows students to think deeply about concepts and to store information more effectively in their memory. It is possible for the students to memorize the concepts because it is already separated into the specific ones while they are creating CM. Second, Concept Mapping is an excellent exercise for the promotion of creative thinking. The students are asked to be creative in separating the concepts in the text become the concept maps, so that, CM will promotes students' creative thinking. Third, Concept Mapping improves students' ability to learn autonomously and become independent language learners. In making the concept maps, the students indirectly learn about the concept by their own self. Fourth, it organizes different concepts and visualizes the relationship between the main concepts. Concept maps help the students to collect and combine the concepts. Further, Kao *et al* (2008) explain that Concept Mapping can also be used as a cognitive tool to help students organize their knowledge and learning experiences and increase their self-awareness through reflective thinking. This is in line with Kommers (2004) who said that Concept Mapping is used as an advanced organizer to improve learners' achievement.

Although Concept Mapping is considered as a useful learning strategy, it also has some disadvantages. Hwang *et al* (2014) notes there are two disadvantages of CM. The first is, the students, especially young children, might encounter difficulty in developing concept map at the early stage of learning. The second, CM may decrease students' learning motivation because they might feel frustrated when they are constructing it on their own. In order to overcome the disadvantages, the researcher has to make sure that the students really understand about CM. Before the students create the concept map, the researcher has to explain CM clearly to the students to avoid confusion. Therefore, the student will not feel unmotivated and frustrated.

2.2 Effects of CMS in Helping Students Gain Reading Comprehension: Conceptual Review

2.2.1 Reading Comprehension

Reading comprehension deals with readers' ability to find the information of a text. Bunner (2002) explains that reading comprehension is the capability to interact with words and ideas on the page in order to understand what the writer has written. It includes meaningful interpretation of written language and interaction of the reader, the text, and the situation in which the text is read. Similarly, Rathvon (2014:156) defines reading comprehension as the ability to derive meaning from text. A comprehension happens when the readers understand the main and supporting information in the text. Nosratinia *et al* (2013) state that reading is a process that involves the activation of relevant knowledge and related language skills in order to accomplish an exchange of information from one person to another through a text. Owen (2008) asserts that this process of reading starts from understanding sound and letters correspondence, word meanings, grammatical aspects, contexts, and students' prior knowledge. Students have to master those aspects in order to understand the information from the text they have read.

The unit of comprehension is graded from word, sentence, paragraph and text comprehensions. Word is the basic element in comprehending text. It is the starter for the students to go further in reading comprehension (Duffy, 2009). Sentence comprehension is related with understanding a sentence in a whole meaning, not the meaning of each word. Translating a sentence is much different from translating each word in a sentence because the reader will find different result. Grellet (1996) states it is better to understand the meaning of some words constructed in sentences than to understand the meaning of word by word. A good paragraph consists of several related sentences that support main idea, which is limited to and focused on one sentence. In understanding the main point of paragraph, students have to know several essential parts in the paragraph. Reading aims to obtain the information given in the text. One way to accomplish this goal is to recognize and understand the parts first, the small units of meaning, and then to combine them to understand the whole. The students will achieve this goal if they are successful in comprehending the whole text which consists of words, sentence, and paragraph meaning to obtain the information.

With regard to the complex process of reading comprehension, English teachers need to select suitable reading strategies in line with the goal of reading. One of the strategies that help students to comprehend a text is CMS. Chularut and De Backer (2003) state that Concept Mapping ais recommended as a technique in reading tasks, because it provides schematic scaffold that encourages students to extract and represent the meanings of words from a text. CMS helps student become aware of main ideas and supporting details. Moreover, it allows them to understand the relationship between the concepts because CMS has a connecting line. So it is possible for the students to obtain the main and supporting ideas from the text, and the relation among the concepts.

2.2.2 Report Text

Dealing with the text used in this research, the researcher used report text. Report text is a text which describes the way things are, with reference to a

range of natural man-made and social phenomenon in our environment (Garod, 1995:196). The social purpose of report text is to presents the information about something as the result of observation and analysis. According to Mark Anderson and Kathy Anderson (1997), there are two generic structures of report text, general classification and description. General classification is the opening statements that introduce the subject of the report. It usually introduces what will be described. Meanwhile, description is a series of paragraph which tells about the scientific overview of the subject. In this research, referring to the syllabus, the topic of report text used in this research was about natural phenomena.

2.2.3 Effects of CM in Helping Students Gain Reading Comprehension

In addition, CMS helps the students in reading comprehension through providing them a way to gain a deep comprehension by simplifying the concept. According to Novak and Gowin (1984) Concept Mapping lets the students to analyze language structures, and obtain the main ideas of the text. This strategy is designed from the general concept into the specific one. Students will understand the concept in detail because CMS simplify the broader concept into the detail information.

Novak and Gowin (1984) proposed a standard Concept Map construction method which involves a series of steps. The first step is defining the topic or focus question. Concept Maps that attempt to cover more than one question may become difficult to manage and read. Once the key topic has been defined, the next step is to identify and list the most important or “general” concepts that are associated with that topic. Next, those concepts are ordered top to bottom in the mapping field, going from most general and inclusive to the most specific, and an action that fosters the explicit representation of sub-sumption relationship. Once the key concepts have been identified and ordered, links are added to form a preliminary Concept Map. Linking phrases are added to describe the relationship among concepts. Once the preliminary Concept Map has been built, a next step is to look for cross-links, which link together concepts that are in different areas or sub-domains on the map.

Finally, the map is reviewed and any necessary changes to structure or content are made. Based on this procedure, the students will construct their own Concept Map based on what they understand in the given text. By applying this strategy, the teacher will know the ability of the students in comprehending the text and obtaining the information.

2.3 Previous Studies on the Use of CMS in Acquiring Reading Skill

Some previous studies related with the use of CM for reading have been situated in EFL countries (e.g. Iran, Korea, and Taiwan). The previous studies were conducted by Liu, Chen, and Chang (2009); Nosratinia, Mirsafaee, and Shakeri (2013); Rasyidah and Mardiansyah (2014); Khaghaninejad and Arefinejad (2015); Wilson and Kim (2016); Riahi and Pordana (2016) in the form of experimental design. The findings of five previous studies are described in the following.

Applying a modified form of CM, Liu, Chen, and Chang had conducted an experimental research by using computer assisted CM on EFL learners. The purpose of this research was to examine the effects of computer assisted CM on EFL college learners' reading comprehension ability. They took one hundred ninety two freshmen who were enrolled in an English course as the participants. The results found that computer assisted CM had positive effects for the learners. It can help the learners achieve English reading content comprehension successfully.

Different from Liu, Chen, and Chang (2009), Nosratinia, Mirsafee, and Shakeeri (2013) had established experimental research by using CM on EFL learners. The research was intended to know the effect of teaching CM in reading on EFL learners' self regulation. They took ninety female learners with the age range of 20-30 from a language school as the participants. The research findings showed that teaching CM significantly increased learners' self regulation.

In 2014, Rasyidah and Mardiansyah had conducted a pre-experimental research about the effect of CM by taking civil engineering students as the research participants. This study was intended to know the effect of CM on

students reading comprehension. The result found that there was an improvement on students' reading comprehension achievement who were taught by CM strategy.

Similarly, Khaghaninejad and Arefinejad (2015) had administered experimental research on Iranian advanced learners. This study was conducted to examine the effect of concept mapping on EFL learners' reading comprehension. Moreover, the researchers also examined the effect of CM for both male and female learners. The participants of the study consisted of eighty students both female and male, who took general English in a semester course. From the result of the research, they found that CM has positively affected the comprehension of the texts for Iranian EFL learners. In addition, it was also found that female EFL learners' benefited from CM more than male learners'.

In contrary with the previous studies, Wilson and Kim (2016) administered an experimental research with different result. The study was aimed to investigate how CM can promote mastery goal orientation and reading comprehension achievement of EFL young learners in Korea. The researchers also investigated the academic self efficacy in a collaborative learning environment. A total of forty two 5th grade students at one of elementary schools participated in this study. The result of the study indicated that CM did not increase mastery goals and it had no effect on students' reading comprehension achievement. The potential reason for this result is the students were unfamiliar with CM since they are young learners.

Still in 2016, Riahi and Pourdana conducted an experimental research on the use of individual and collaborative CM. The study was attempted to investigate the possible impacts of Individual Concept Mapping (ICM) and Collaborative Concept Mapping (CCM) on Iranian EFL learners' reading comprehension. The participants of the research were ninety Iranian female EFL learners at the intermediate level of English proficiency studying at a private language school. The finding of this study showed that both ICM and CCM are beneficial on EFL learners' reading comprehension.

Based on the discussion above, it can be concluded that there are some differences from the previous researchers and the present research. The first is

about the research design. The previous researches used experimental research with pre-test and post-test design while the present study used quasi-experimental research with post-test only design. The second is the participants of the research. Four previous researches took students in the university level while this research used vocational high school students as the research participants

2.4 Research Hypothesis

Based on the review of literature above, the research hypothesis is formulated as follows:

"There is a significant effect of using concept mapping strategy on the eleventh grade vocational high school students' reading comprehension".

CHAPTER III. RESEARCH METHODOLOGY

This chapter explains the methods or the procedure of conducting the research. It consists of Research Design, Research Context, Implementation Procedure, Research Participants, Data Collection Method, and Data Analysis Method.

3.1 Research Design

This research was intended to know whether or not there was a significant effect of using CM learning strategy on the students' reading comprehension achievement. Therefore, a quasi experimental research was used in this research. Creswell (2012:310) states that experimental research seeks to determine if a specific treatment influences an outcome in a study.

There were two classes used by the researcher, one class as experimental class and one class for control class. The researcher taught the experimental class by using Concept Mapping (CM) strategy to teach reading comprehension, while the control class was taught by using scientific approach. After giving the treatment, the researcher administered post-test to both classes. This was aimed to know the significant difference of the students' reading comprehension achievement. The design of this research can be illustrated as follows:

Post-test Only Design **Time**

Experimental Group	Experimental Treatment (CM)	Post-test
Control Group	No Treatment (CM)	Post-test

(Taken from Creswell, 2012:310)

The procedures of this experimental research were done as follows:

1. Analyzing the eleventh grade students' English scores given by the English teacher by using ANOVA (Analysis of Variance). There were four classes which were analyzed by the researcher.

2. Determining experimental and control class based on ANOVA analysis result. Since the four classes were homogeneous, the researcher used lottery to determine experimental and control class. The selected classes were XI PMT 1 as the experimental class and XI PMT 2 as the control class.
3. Giving the treatment which was teaching reading comprehension by using CM strategy to the experimental class while the control class was taught reading comprehension by using scientific approach. Both of the classes received the same materials and tasks in two meetings.
4. Conducting the try out test to a class which did not belong to experimental or control class.
5. Analyzing the result of try out test by using split half odd even number formula.
6. Administering post-test to both experimental and control class to know the result of the treatment.
7. Analyzing the result of post-test by using T-test formula to know whether the mean difference of the two groups was significant or not.
8. Concluding the result based on the data analysis to answer the research problem.

3.2 Research Context

This research was conducted in SMK Negeri 5 Jember, one of vocational high schools in Jember. This school provides twelve majors which consist of two or three classes such as Multimedia, Computer Networking, Quality Control, Fishery, Tissue Culture Cultivation, Agro Industry, Analytical Chemistry, Poultry Cultivation, Ruminant Agribusiness, Plantation Corps, Agricultural Mechanization, and Food Crops and Horticulture Agribusiness.

Based on preliminary study which was done by the researcher, this school uses revised 2013 curriculum in teaching learning process including English subject. In this school, English is taught twice a week with 2x45 minutes for each

meeting. English is used as a foreign language that means it is used only in English subject. The English teachers seldom speak English while teaching the students. The same thing happens to the students, they seldom or never speak English inside or outside the classroom.

Moreover, in this research, the area of the research was purposefully selected on convenient grounds. First, the English teacher never applies CM to teach reading comprehension. Second, there was no research that has been conducted in this school related to the use of CM. Last, the principal had given permission to the researcher for doing this research in that school.

3.3 Implementation Procedure

This study was conducted in 2 weeks. The meetings were conducted twice a week and each session was for 90 minutes. Both the experimental and control group received the same materials and exercises. The experimental group was treated by using CM while the control group was treated by using scientific approach.

3.3.1 Experimental Class

In teaching reading through CM, a number of steps proposed by Harris and Graham (1996) were followed in the present study. There were five steps in teaching of reading through CM, which were described as follows:

a. Strategy Description

   In strategy description, students were told that they were going to learn about the strategy of CM which was described as a strategy that could be used to categorize information in a graphic form through drawing.

b. Discussion of Goals and Purposes

   In this stage, the researcher discussed about the benefits of using Concept Mapping

c. Modeling of the Strategy

   The teacher modeled and explained how to create concept map to the students

d. Students' Mastery of Strategy

During this stage the students rehearsed and memorized the sequence of activities for concept map construction.

e. Guided Practice and Feedback.

Lastly, in guided practice and feedback, the teacher provided the students with feedback on students' performance.

3.3.2 Control Class

The control group used scientific approach during teaching and learning process. This group received the same materials and exercises as the experimental group. The steps of scientific approach were explained as follows:

a. Observing

The students observed the teachers' explanation about report text, its generic structures, and its language features

b. Questioning

The students asked questions about report text, its generic structures, and its language features, the topic of the text.

c. Exploring

The students found the generic structures and the language features from the text, and the topic of report text. After that, the students did the exercises.

d. Associating

The students found the unfamiliar words and look up the meaning in the dictionary, discuss difficulty faced in the text under the teachers' guidance.

e. Communicating

The students discussed the answer of the exercises given with the class.

3.4 Research Participants

The population of this research was four classes of the eleventh grade students of SMK Negeri 5 Jember in the 2017/2018 academic year which consisted of Computer Networking Department and Quality Control Department. The research

participants were two classes of Quality Control Department. The experimental class and the control class were determined by using cluster random sampling method after analyzing the students' English scores given by the teacher. The students score was analyzed by using One Way Anova to know whether or not the population was homogeneous.

The result of homogeneity test is presented in Table 3.1, whereas the result of One Way Anova is presented in Table 3.2.

Table 3.1 The Mean Score of XI PMT 1, XI PMT 2, XI TKJ 1, and XI TKJ 2

Descriptives

SCORE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
XI PMT 1	33	78.39	1.298	.226	77.93	78.85	76	81
XI PMT 2	35	78.20	2.084	.352	77.48	78.92	72	82
XI TKJ 1	35	78.11	1.676	.283	77.54	78.69	75	82
XI TKJ 2	34	78.15	1.480	.254	77.63	78.66	76	81
Total	137	78.21	1.651	.141	77.93	78.49	72	82

The table above showed that there were 137 students as the population of this research. The mean score of XI PMT 1 was 78.39, the mean score of XI PMT 2 was 78.20, the mean score of XI TKJ 1 was 78.11 and the mean score of XI TKJ 2 was 78.15. The score of homogeneity test of the eleventh grade students were analyzed statistically by using ANOVA formula as presented below.

Table 3.2 The Result of One Way ANOVA

ANOVA

SCORE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.575	3	.525	.189	.904
Within Groups	369.286	133	2.777		
Total	370.861	136			

Based on the analysis, the result of the computation by using One Way ANOVA showed that the value of significant column was 0.904 which was higher than 0.05. The result implied that there was no significant difference on the eleventh grade students' reading comprehension among those four classes or the four classes were homogenous. Therefore, lottery was done to determine the experimental class and the control class. The result was that the experimental class was XI PMT 1 while the control class was XI PMT 2.

3.5 Data Collection Method

The data were collected through reading test to get the data about students' reading comprehension achievement which was given to the students in experimental and control class. Cresswell (2012:390) explains that a post test is to measure some attributes or characteristics assessed for participants in an experiment after a treatment. The post-test covered the test items of word comprehension, sentence comprehension, paragraph comprehension, and text comprehension. There were 20 questions which consisted of 10 multiple choices and 10 true false questions and carried the same score which was 5 for each number. The time allocation was 2 x 45 minutes.

A good test should be valid and reliable. Validity refers to how well a test measures what is to be measured. The reading comprehension post-test in this study had fulfilled the content validity because it was developed following the basic competences of reading for Grade XI. The researcher used report text with natural phenomenon as the theme. The texts and the materials were taken from internet. The researcher checked and revised it first before giving the materials and the texts to the students. Moreover, the researcher also consulted the materials to the English teacher in order to know whether it was suitable with the competency that should be achieved. Therefore, it can be said that the test had fulfilled the requirement of content validity.

Reliability deals with the degree to which an assessment tool produces stable and consistent result. In order to know the reliability of the post-test, split-half

method was used. The result of the try out test was analyzed by using Spearman Brown Formula (Split Half Odd-Even). If the result shows that the value of Split Half ≥ 0.70, it means that the test items are reliable.

The try out test was administered on January 11th 2018 to one class (XI PHP 1) which did not belong to the participants either the experimental or control class. The analysis of try out was important to know whether or not the instruction of the test was clear and suitable for the eleventh grade students and whether the test items were either too easy or too difficult.

This research used split half odd even technique to estimate the value of reliability coefficient. The researcher signed X as the even number and Y as the odd number. The correlation between X and Y was analyzed by using Product Moment Formula (Trash and Porter, 1974). The calculation of try out result is presented below

$$r_{XY} = r\frac{11}{22} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N\sum X^2 - (\sum X)^2\, N\sum Y^2 - (\sum Y)^2}}$$

$$r_{XY} = \frac{35\,(3450) - (347)(343)}{\sqrt{35\,(3531) - (347)^2 \;\; 35\,(3419) - (343)^2}}$$

$$r_{XY} = \frac{120750 - 119021}{\sqrt{(123585 - 120403)(119665 - 117649)}}$$

$$r_{XY} = \frac{1729}{\sqrt{(3176)(2016)}}$$

$$r_{XY} = \frac{1729}{\sqrt{6402816}}$$

$$r_{XY} = \frac{1729}{2530{,}3786}$$

$$r_{XY} = 0{,}683$$

Notes:

r_{XY} = reliability coefficient

$\sum XY$ = the number of the odd and even items

$\sum X$ = the number of even items

$\sum Y$ = the number of odd items

N = the number of the respondents of try out test

(Trash and Porter, 1974:10)

The estimation result of reliability coefficient was 0.68. In order to obtain the reliability coefficient of the whole test items, the value of r_{XY} was taken into the following formula:

$$r_{11} = \frac{2r_{\frac{11}{22}}}{1 + r_{\frac{11}{22}}}$$

$$r_{11} = \frac{2\ x\ 0{,}68}{1 + 0{,}68}$$

$$r_{11} = 0{,}809$$

Notes:

r_{11} = reliability coefficient of the whole test items

$r_{\frac{11}{22}}$ = reliability coefficient of the half of the test items

(Trash and Porter, 1974:11)

From the calculation above, the reliability coefficient of the whole test items was 0.809. Trash and Porter (1974) confirms that the reliability coefficient of a teacher-made test is believed to be reliable if the reliability coefficient ≥ 0.70. Since 0.809 was higher than 0.70, it means that the test items were reliable.

The try out test had 26 items and the maximum score of the test was 100 points. The students' score can be obtained from the calculation of correct questions divided by the number of the total questions times one hundred. In order

to know whether or not the test items were too easy or too difficult, the difficulty index of the test items was analyzed by using the degree of the test items. It could be found by finding the number of students who answered the questions correctly and was divided by the number of the students who took the test. It could be seen from the proportion of the test items that 2 numbers were too difficult, 4 numbers were too easy, and the rest were categorized as fair items.

Dealing with the time allocation, it was found out that the time allocation for the try out test was sufficient since the students were able to do all the test items within the available time, 2 x 45 minutes. It can be concluded that the test items should be revised since there were some of those items were calculated as too easy and too difficult. Meanwhile, the time allocation for the test did not need to be lengthened or shortened.

3.6 Data Analysis Method

Data analysis method deals with the way to analyze the data. The reading comprehension post-test score were analyzed statistically using SPSS program by using independent sample t-test with 5% significant level which was used to compare the mean score of the control and the experiment class. It was done to find whether or not there was a significant effect of Concept Mapping on the eleventh grade students' reading comprehension achievement.

If the result of the test shows that the value of the significant (sig) 2-tailed $\geq$ 0.05, this means that H0 is accepted, and if the value of Sig. (2tailed) $\leq$ 0.05, this means that Ha is accepted.

CHAPTER V CONCLUSION AND SUGGESTION

This chapter presents the conclusion of the finding and the suggestions for the English teacher and the future researchers.

5.1 Conclusion

Based on the data analysis, hypothesis verification, and discussion that had been explained in the chapter IV, it can be concluded that there was a significant effect of using Concept Mapping Learning Strategy on the eleventh grade students' reading comprehension achievement at SMK Negeri 5 Jember. This result indicates that the experimental group who was treated by using CM achieved a better reading comprehension than the control group who was treated by using scientific approach.

5.2 Suggestion

From the research result which proved that CM gave a significant influence on students' reading comprehension achievement, this strategy can be used as a consideration in teaching reading comprehension. Therefore, the researcher proposed some suggestion to the following people.

1. **The English Teacher**

The English teachers of SMK Negeri 5 Jember can use Concept Mapping Learning Strategy as an alternative strategy in teaching reading comprehension. The teachers can use this strategy to make the students comprehend the reading text easily, so that the students will gain a better understanding. Also, the English teacher can use this research as a reference to find out the steps to apply Concept Mapping in teaching reading comprehension,

2. The Future Researchers

Hopefully, this research will be useful for the future researchers who want to conduct a research with the same strategy. They can use this research as the source of information and consideration to conduct the same research with different participants, design, or the kinds of text.

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APPENDICES

Research Matrix

Title	Research Problem	Research Variables	Indicators	Data Resources	Research Method	Hypothesis
The Effectiveness of Using Concept Mapping Learning Strategy on the Eleventh Grade Vocational High School Students' Reading Comprehension Achievement	Is there any significant effect of using Concept Mapping Learning Strategy on the eleventh grade vocational high school students' reading comprehension achievement?	1. **Independent Variable:** The use of Concept Mapping Learning Strategy in teaching reading comprehension 2. **Dependent Variable:** Students' reading comprehension achievement in the form of test scores	1. Teaching reading comprehension by using Concept Mapping Learning Strategy: • Strategy Description • Discussion of goals and purposes • Strategy Modeling • Students' Mastery of Strategy • Guided practice and Feedback 2. The scores of students' reading comprehension	1. **Respondents:** The eleventh grade students of SMK Negeri 5 Jember in the 2017/2018 academic year 2. **Informant:** The English teacher and the administrative staff of SMK Negeri 5 Jember 3. **Documents:** The names of the respondents (the experimental group and the control group) and the number of the students	1. **Research Design:** Quasi Experimental Research Post-test Only Control Group 2. **Area Determination Method:** Purposive Method 3. **Respondent Determination Method:** Cluster Random Sampling 4. **Data Collection Method:** • Administering Reading Test 5. **Data Analysis Method:** The data will be analyzed using T-test formula by using SPSS	There is a significant effect of using Concept Mapping Learning Strategy on the eleventh grade vocational high school students' reading comprehension achievement

Appendix B. Spearman-Brown Formula

$$r_{XY} = r_{\frac{22}{22}}^{11} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N\sum X^2 - (\sum X)^2\, N\sum Y^2 - (\sum Y)^2}}$$

Notes:

r_{XY} = reliability coefficient

$\sum XY$ = the number of the odd and even items

$\sum X$ = the number of even items

$\sum Y$ = the number of odd items

N = the number of the respondents of try out test

$$r_{11} = \frac{2r_{\frac{22}{22}}^{11}}{1 + r_{\frac{22}{22}}^{11}}$$

Notes:

r_{11} = reliability coefficient of the whole test items

$r_{\frac{22}{22}}^{11}$ = reliability coefficient of the half of the test items

Appendix C. The Names of Research Participants

No	Experimental Class	Control Class
	Names	Names
1	ADO	AW
2	ARP	AMS
3	APO	APHW
4	BEO	AEB
5	CSA	AAH
6	DF	BR
7	ETH	BAP
8	EAD	CP
9	FK	DPL
10	HY	DAN
11	IN	DFS
12	MIK	BDF
13	MRZA	FSB
14	MDAM	FR
15	MK	FNA
16	MAI	F
17	MEK	HSW
18	MHA	IR
19	MAR	IR
20	MFH	LM
21	NAR	LZA
22	ODP	LM
23	PW	MJIMI
24	RMZ	MK
25	RRH	MR
26	RS	RDH
27	SNW	RYD
28	SPAW	RWMH
29	SC	SD
30	SQ	SRY
31	UMAK	SHS
32	VA	SMH
33	ZNA	SR
34		UWS
35		VPP

Appendix D. Lesson Plan 1

Lesson Plan

(First Meeting)

School	**:** SMK Negeri 5 Jember
Subject	**:** English
Grade / Semester	**:** XI / 2
Language Skill	**:** Reading
Material	**:** Factual Report Text
Time Allocation	**:** 1 meeting (2 x 45 minutes)

A. CORE COMPETENCE

KI 3: Memahami, menerapkan, menganalisis pengetahuan faktual, konseptual, prosedural, berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya, dan humaniora dengan wawasan kemanusiaan, kebangsaan, kenegaraan, dan peradaban terkait penyebab fenomena dan kejadian serta menerapkan pengetahuan prosedural pada bidang kajian yang spesifik sesuai dengan bakat dan minatnya untuk memecahkan masalah.

KI 4: Mengolah, menalar, dan menyaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, dan mampu menggunakan metoda sesuai kaidah keilmuan.

B. BASIC COMPETENCE AND INDICATORS

Basic Competence	Indicators
3.9 Menganalisis struktur teks dan unsur kebahasaan untuk melaksanakan fungsi sosial teks *factual report* dengan menyatakan dan menanyakan tentang teks ilmiah faktual	3.9.1 Finding generic structures of report text 3.9.2 Explaining the functions of each part in the generic structure 3.9.3 Finding the important

tentang orang, binatang, benda, gejala dan peristiwa alam dan sosial, sederhana, sesuai dengan konteks pembelajaran dipelajaran lain di kelas XI.	language features of report text 3.9.4 Explaining the important language features of report text.
4.3 Menangkap makna dalam teks ilmiah faktual (*factual report*), lisan dan tulis, sederhana, tentang orang, binatang, benda, gejala dan peristiwa alam dan sosial, terkait denganmata pelajaran lain di kelas XI.	4.3.1 Finding the word meaning of report text in the form of multiple choice 4.3.2 Finding the sentence meaning of report text in the form of multiple choice 4.3.3 Finding the paragraph meaning of report text in the form of multiple choice 4.3.4 Finding the text meaning of report text in the form of multiple choice

C. LEARNING OBJECTIVES

At the end of the lesson:

1. Students will be able to find the generic structure of report text and explain the functions of each part in the generic structure
2. Students will be able to find language features of report text and explain connectors used in report text
3. Students will be able to find the word meaning of report text
4. Students will be able to find the sentence meaning of report text
5. Students will be able to find the paragraph meaning of report text
6. Students will be able to find the text meaning of report text

D. LEARNING MATERIALS

1. Report text (attached)
2. Students' worksheet (attached)

E. LEARNING METHOD

1. Approach : a. Scientific approach (control group)
   b. Concept Mapping Strategy (experimental group)
2. Strategy : discussion

F. TEACHING LEARNING ACTIVITY

Sequence	Description (Experimental Group)	Description (Control Group)	Time
Set Induction	1. Responding the greeting and questions from the teacher 2. Paying attention while the teacher checks students' attendance 3. Responding to some leading questions from the teacher related to the topic they will discuss 4. Paying attention while the teacher states the objective of the lesson	1.Responding the greeting and questions from the teacher 2.Paying attention while the teacher checks students' attendance 3.Responding to some leading questions from the teacher related to the topic they will discuss 4.Paying attention while the teacher states the objective of the lesson	15'
Main Activity	• **Strategy Description Stage** 1. The teacher explains about the concept	• **Observing** 1. Paying attention to the teachers' explanation about	70'

	mapping (the definition, the example, and how to construct) to the students orally by using power point. • **Goal Discussing Stage** 1. The teacher discusses about the benefits of using Concept Mapping • **Modeling Stage** 1. Teacher models how to create concept mapping on Rainbow text. In this case, the teacher used the combination of Learner-Constructed Concept Map and Expert-Constructed Concept Map. The teacher also explains the types of concept map which are upper-to-lower and inner-to-outer form. • **Mastery Stage** 1. Constructing concept map	report text • **Questioning** 1. Asking questions about report text, its generic structures, and its language features • **Exploring** 1. Paying attention to an example of report text about Rainbow 2. The teacher and the students discuss and find the generic structures and language features of the text orally • **Associating** 1. Receiving text and	

	based on teachers' modeling • **Guiding Stage and Feedback** 1. The teacher guides the students to find the information in the text. 2. Teacher gives feedback on the students performance	students' worksheet 2. Reading the text individually 3. Identifying the topic of the text. It is done orally 4. Finding unfamiliar words. It is done orally 5. Discuss the difficulty faced by the students under the teachers' guide orally 6. Identifying the important information from each paragraph of the text orally 7. Doing the task individually • **Communication** 1. Discussing the answer of the task given	
Closure	• Drawing conclusion about the material given	• Drawing conclusion about the material given	5'

G. MEDIA AND RESOURCES

1. Media:
    - Board, laptop, power point presentation, dictionary
2. Resources:
    - *https://waterstories.nestle-waters.com/environment/how-does-a-raibow-from/*
    - *http://webneel.com/daily/sites/default/files/images/daily/04-2013/2-best-rainbow-photography.preview.jpg*

H. ASSESMENT

The scoring of test items

The Indicators of Reading Comprehension	Correct	Wrong
Word Comprehension	5	0
Sentence Comprehension	5	0
Paragraph Comprehension	5	0
Text Comprehension	5	0

The Formula to Calculate the Students' Scores

$$\textbf{Final Score} = \frac{n}{N} \times 100$$

Notes :

n : The obtained score

N : The maximum score of the test

Jember, August 20th 2017

The researcher

Nurdiana Aisyah H

MATERIALS

Leading Questions

1. Have you ever seen the natural phenomena in the picture?
2. What do you know about the rainbow?
3. How many colors are there in a rainbow?
4. When do you usually find a rainbow?

A. Report Text

- Definition

  Report text is a text which presents information about something as it is. It is as a result of systematic observation and analysis. The purpose of the text is to present information about something generally.

- Generic Structure

  a. General Classification

     Stating classification of general aspect of thing which will be discussed in general

  b. Description

     Describing the thing which will be discussed in detail

- Language Features

  a. Using conditional connector (so, while, when, however, etc)

b. Using simple present tense (the sun rises in the east)

c. Common nouns (rainbow, rain, wind, etc)

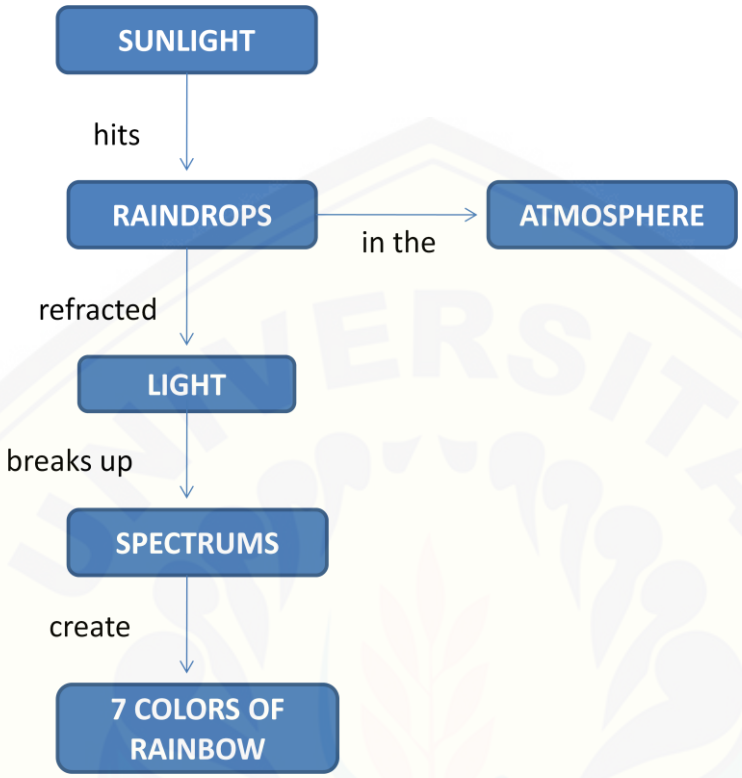
d. Relating verbs (is, am, are, has, have, turning, getting, etc)

- Example of Report Text

Rainbow	
General Classification	A rainbow is a natural phenomena caused by the refraction and reflection of light in droplets of water, which results in the appearance of a spectrum of light in the sky. Rainbows appear in the form of a multicolored bow. When it is caused by water and sun, rainbow appears on the side of the sky that is directly opposite the sun. They can be full circles at times, but to the average observer, only the arc will be visible.
Identification	The colors in a rainbow are those found in the color spectrum of white light as it divides. There are seven main colors that you can see in a rainbow; red, orange, yellow, green, blue, indigo, and purple. When the sunlight hits the water droplets, the seven colors appear. A rainbow is formed when sunlight hitting a raindrop in the atmosphere is refracted on the surface of the raindrop and enters the droplet. Once refraction occurs, the light breaks up into seven colors inside the raindrop. Then, it is reflected to the other side of the raindrop after traveling inside it. When the light in the raindrop refracts, the spectrum are formed to make the seven colors of the rainbow appear. During reflection, the angle is equal to the angel of incidence; this means that reflected light travels along a set path and maintains the difference of the refraction angel. A rainbow is a bunch of raindrops hanging in the atmosphere that divide the sunlight into seven colors like a prism.

(Taken from *waterstories.nestle-waters.com)*

- Example of Concept Mapping



B. Simple Present Tense

Simple present tense is used to describe habits, unchanging situation, and general truths.

Formula:

(+) I / You / We / They + V1 + object

(+) He / She / It + V s / es + object

(-) I / You / We / They + do not + V1 + object

(-) He / She / It + does not + V s / es + object

(?) Do + I / You / We / They + V1 + object

(?) Does + He / She / It + V s / es + object

STUDENTS' WORKSHEET

Earthquake

Earthquake is a natural process that often occurs around us. It can produce a big shock of waves that can destroy anything. The earthquake is also very difficult to be predicted. However, earthquake's power can be measured using a tool called seismograph. There are two types of earthquakes that are categorized by geological factors and the area where the earthquake occurred. Both of types are tectonic and volcanic.

Tectonic earthquakes are one of the most common earthquakes. It occurs when the earth's crust rocks are broken because of geological force created by the movement of tectonic plates. This type of earthquakes can cause any damage or natural disaster. Its strong vibrations are capable to spread into other parts of the earth quickly.

The second is volcanic earthquakes. Volcanic earthquakes occur due to magma activity inside the volcano. If the magma activity is getting higher, it will cause an explosion and earthquake vibrations. Volcanic earthquakes can be felt just around the volcano.

Earthquakes can cause the damage, if the power produced is quite large. The damages include: the buildings, the ground, and even can cause a tsunami.

(Taken from *www.livescience.com/21486*)

A. Group Task (for experimental class only)

Draw a Concept Map based on the text that you have read! Do it in groups!

B. Individual Task (for experimental and control classes)

I. Answer these questions with the correct answers!

1. What does the text tell the reader about?
   a. Volcano
   b. Tsunami
   c. Earthquake
   d. Eruption
2. How many types of earthquake are there?
   a. Two types
   b. Three types
   c. Four types
   d. Five types

3. What is Seismograph?
   a. It is a tool used to measure earthquakes' power
   b. It is a tool used to measure the vibration of earthquake
   c. It is a tool used to measure the movement of earthquake
   d. It is a tool used to measure magmas' activity
4. It can produce a big shock of waves… "
   The underlined word refers to……
   a. Earthquake
   b. Tectonic
   c. Volcanic
   d. Natural disaster
5. What is the main idea of the second paragraph?
   a. The definition of tectonic earthquake
   b. The process of tectonic earthquake
   c. The types of tectonic earthquake
   d. The example of tectonic earthquake
6. Tectonic earthquakes are one of the most common earthquakes
   The antonym of the underlined word is…
   a. Usual
   b. Standard
   c. General
   d. Rare
7. Which statement below is stated in the text?
   a. Volcanic earthquake takes place in the middle of the sea
   b. Tsunami is the most common types of earthquake
   c. Earthquake cannot be predicted, but its power can be measured
   d. One of the factors that can cause earthquake is human
8. Which statement is NOT TRUE according to the text about tectonic earthquake?
   a. The plates' movements can cause tectonic earthquake
   b. The factor that causes tectonic earthquake is magmas' activity

c. It occurred when the earth's crust rocks are broken
d. Its strong vibrations are capable to spread into other parts of earth

9. These are the negative impacts of earthquake, *except*…
   a. It can cause tsunami
   b. It destroys tectonic plates
   c. It destroys buildings
   d. It can cause explosion
10. What is the type of the text above?
   a. Report text
   b. Recount text
   c. Descriptive text
   d. Narrative text

II. Write (T) if the statement is true or (F) if the statement is false according to the text!

11. Earthquake belongs to natural disaster
12. *Hectograph* is a tool that is used to measure earthquakes' power
13. There are three types of earthquakes based on geological factors
14. Tectonic earthquake is caused by the movement of tectonic plates
15. Volcanic earthquake occurs when the earths' crust rocks are broken
16. Both tectonic and volcanic earthquake can cause damage
17. One of the negative impacts of earthquake is tsunami
18. Tectonic earthquake will cause an explosion
19. Powerful earthquake does not damage buildings
20. Earthquake is a dangerous natural phenomena

Answer Keys

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

The distribution of exercise items

The Aspects of Reading Comprehension	Items	Number
Word Comprehension	2	4, 6, 12, 20
Sentence Comprehension	2	7, 8
Paragraph Comprehension	4	2, 3, 5, 9, 11, 13, 14, 15,16, 17, 18, 19
Text Comprehension	2	1, 10

Reading Comprehension Post Test

School	**:** SMK Negeri 5 Jember
Subject	**:** English
Grade / Semester	**:** XI / 2
Language Skill	**:** Reading
Material	**:** Factual Report Text
Time Allocation	**:** 1 meeting (2 x 45 minutes)

Read the following text and choose the best answer by crossing a, b, c, or d on this worksheet!

Text 1 (for question number 1-13)

Geyser

A geyser is a rare kind of hot spring that is under pressure and erupts, sending jets of water and steam into the air. Geysers are made from a tube-like hole in the earths' surface that runs deep into the crust. The tube is filled with water. Near the bottom of the tube is molten rock called magma, which heats the water in the tube.

Water in the lower part of the tube, close to the magma, becomes superhot. Gradually, it begins to boil. Some of the water is forced upward. The boiling water begins to steam, or turn to gas. The steam jets toward the surface. Its powerful jet of steam ejects the column of water above it. The water rushes through the tube and into the air.

The eruption will continue until all the water is forced out of the tube, or until the temperature inside the geyser drops below boiling (100 degrees Celsius, or 212 degrees Fahrenheit, at sea level).

After the eruption, water slowly seeps back into the tube. The process begins again. In some small geysers, the eruption process can take just a few minutes. In larger geyser, it can take days. The most famous geyser in the United States, Yellowstone National Parks' Old Faithful, erupts about every 50-100 minutes.

1. What is the topic of the text?
   a. Large Geyser
   b. Small geyser
   c. Geyser
   d. Eruption
2. What does geyser consist of?
   a. Hot water, magma, and the tube
   b. Water eruption, crush, and the hole
   c. The hole, molten rocks, and magma
   d. Hot water, the hole, and water eruption
3. What is the other name of magma?
   a. Water eruption
   b. Hot spring
   c. Earth surface
   d. Molten rocks

4. Why does the lower part of water become superhot?
   a. Because the water runs deep into the crust
   b. Because the water is located close to magma
   c. Because the water is under pressure and erupts
   d. Because the water runs out from the hole
5. What is the main idea of the second paragraph?
   a. The process of water boiling.
   b. The process of how geyser is formed
   c. The process of water eruption
   d. The process of superhot magma
6. Gradually, <u>it</u> begins to boil (line 7) The underlined word refers to ….
   a. Geyser
   b. Magma
   c. Water
   d. Tube
7. "The most <u>famous</u> geyser in the United States…." (line 16) The closest meaning of the underlined word is…
   a. Popular
   b. Scary
   c. Extreme
   d. Beautiful
8. Which paragraph tells us about the location of geyser?
   a. The first paragraph
   b. The second paragraph
   c. The third paragraph
   d. The last paragraph
9. Where does the famous geyser located?
   a. Yellowstone National Park
   b. San Francisco National Park
   c. New Jersey National Park
   d. Philadelphia National Park
10. What is the main idea of the third paragraph?
    a. The process of geyser
    b. The temperature of geyser
    c. The eruption of the water
    d. The impact of geyser

Text 2 (for question number 14-26)

Sandstorm

A sandstorm refers to a high amount of wind occurring in sandy areas. It usually occurs in deserts, where the wind speed is able to lift the top layer of sand from the ground, and push it in every imaginable direction. Sandstorms arise when a gust front or other strong wind blows loose sand and dirt from a dry surface.

The sandstorm is used most often in the context of desert sandstorms, especially in the Sahara Desert, or places where sand is more prevalent soil types

of dirt or rock. The sand involved in the sandstorm can reach heights of approximately 10-50 feet (3.05-15.35 m). Usually, the height of a sandstorm corresponds to wind strength. Dust particles associated with some sandstorms is found at 5000 feet (1524 m).

Sandstorms have wind speeds of at least 25 miles per hour (40 km), so they can happen quickly. We will mostly find them in dry, hot desert regions. It also can be found in the US, especially in dry and flat regions like Kansas, Oklahoma, Texas, New Mexico, and Arizona. Sandstorms mostly occur during summer, but it can occur during spring in the United States.

Additionally, sandstorm causes some dangerous impacts. The sand can get into the nose, eyes, mouth, and lungs. Sandstorm usually arrives suddenly in the form of an advancing wall of dust and debris which may be miles long and several thousand feet high. Blinding, choking dust can quickly reduce visibility, causing accidents.

Write (T) if the statement is true or (F) if the statement is false according to the text!

11. Sandstorm only occurs in sandy areas
12. Sandstorm happens when there is a powerful wind
13. The height of a sandstorm is approximately 10 meters.
14. When a sandstorm happens, it may take a whole day
15. We can find sandstorm in the humid areas
16. A sandstorm does occur in some countries in the United States
17. During summer and spring is the possible time of sandstorm
18. In the United States, the sandstorm happens only during spring
19. Sandstorm does not give positive impacts
20. One of the sandstorm impacts is reducing visibility

TRY OUT TEST

School	**:** SMK Negeri 5 Jember
Subject	**:** English
Grade / Semester	**:** XI / 2
Language Skill	**:** Reading
Material	**:** Factual Report Text
Time Allocation	**:** 1 meeting (2 x 45 minutes)

Read the following text and choose the best answer by crossing a, b, c, or d on this worksheet!

Text 1 (for question number 1-13)

Geyser

A geyser is a rare kind of hot spring that is under pressure and erupts, sending jets of water and steam into the air. Geysers are made from a tube-like hole in the earths' surface that runs deep into the crust. The tube is filled with water. Near the bottom of the tube is molten rock called magma, which heats the water in the tube.

Water in the lower part of the tube, close to the magma, becomes superhot. Gradually, it begins to boil. Some of the water is forced upward. The boiling water begins to steam, or turn to gas. The steam jets toward the surface. Its powerful jet of steam ejects the column of water above it. The water rushes through the tube and into the air.

The eruption will continue until all the water is forced out of the tube, or until the temperature inside the geyser drops below boiling (100 degrees Celsius, or 212 degrees Fahrenheit, at sea level).

After the eruption, water slowly seeps back into the tube. The process begins again. In some small geysers, the eruption process can take just a few minutes. In larger geyser, it can take days. The most famous geyser in the United States, Yellowstone National Parks' Old Faithful, erupts about every 50-100 minutes.

(Taken from *www.nationalgeographic.org/geyser*)

1. What is the topic of the text?
   a. Large Geyser
   b. Small geyser
   c. Geyser
   d. Eruption
2. What does the geyser consist of?

a. Hot water, magma, and the tube
b. Water eruption, crush, and the hole
c. The hole, molten rocks, and magma
d. Hot water, the hole, and water eruption

3. What is the other name of magma?
   a. Water eruption
   b. Hot spring
   c. Earth surface
   d. Molten rocks
4. Why does the lower part of water become superhot?
   a. Because the water runs deep into the crust
   b. Because the water is located close to magma
   c. Because the water is under pressure and erupts
   d. Because the water runs out from the hole
5. What is the main idea of the second paragraph?
   a. The process of water boiling.
   b. The process of how geyser is formed
   c. The process of water eruption
   d. The process of superhot magma
6. Gradually, <u>it</u> begins to boil (line 7)
   The underlined word refers to ….
   a. Geyser
   b. Magma
   c. Water
   d. Tube
7. "The most <u>famous</u> geyser in the United States…." (line 16)
   The closest meaning of the underlined word is…
   a. Popular
   b. Scary
   c. Extreme
   d. Beautiful

8. Which paragraph tells about the location of geyser?
   a. The first paragraph
   b. The second paragraph
   c. The third paragraph
   d. The last paragraph
9. Where is the famous geyser located?
   a. Yellowstone National Park
   b. San Francisco National Park
   c. New Jersey National Park
   d. Philadelphia National Park
10. What is the main idea of the third paragraph?
    a. The process of geyser
    b. The temperature of geyser
    c. The eruption of the water
    d. The impact of geyser
11. The following statements are TRUE according to the text, *except* ….
    a. The temperature of geyser is 100 degree Fahrenheit
    b. There are two kinds of geysers, large and small
    c. The water is heated by the molten rocks
    d. The small geyser happens is a few minutes
12. . In larger geyser, it can take days (line 16)
    What does the sentence mean?
    a. The large geyser happens only less than one day
    b. We can see the large geyser in a few days
    c. Only the large geyser that happens more than a week
    d. It is possible for the large geyser to be happened more than one day
13. What does the text tell you about?
    a. General information about geyser
    b. The procedure of how geyser is formed
    c. The location of famous geyser
    d. A description about a certain geyser

Text 2 (for question number 14-26)

Sandstorm

A sandstorm refers to a high amount of wind occurring in sandy areas. It usually occurs in deserts, where the wind speed is able to lift the top layer of sand from the ground, and push it in every imaginable direction. Sandstorms arise when a gust front or other strong wind blows loose sand and dirt from a dry surface.

The sandstorm is used most often in the context of desert sandstorms, especially in the Sahara Desert, or places where sand is more prevalent soil types that dirt or rock. The sand involved in the sandstorm can reach heights of approximately 10-50 feet (3.05-15.35 m). Usually, the height of a sandstorm corresponds to wind strength. Dust particles associated with some sandstorms is found at 5000 feet (1524 m).

Sandstorms have wind speeds of at least 25 miles per hour (40 km), so they can happen quickly. We will mostly find them in dry, hot desert regions. It also can be found in the US, especially in dry and flat regions like Kansas, Oklahoma, Texas, New Mexico, and Arizona. Sandstorms mostly occur during summer, but it can occur during spring in the United States.

Additionally, sandstorm causes some dangerous impacts. The sand can get into the nose, eyes, mouth, and lungs. Sandstorm usually arrives suddenly in the form of an advancing wall of dust and debris which may be miles long and several thousand feet high. Blinding, choking dust can quickly reduce visibility, causing accidents.

(Taken from *www.weatherwizkids.com*)

Write (T) if the statement is true or (F) if the statement is false according to the text!

14. Sandstorm only occurs in sandy areas
15. Sandstorm happens when there is a powerful wind
16. The height of a sandstorm is approximately 10 meters.
17. When a sandstorm happens, it may take a whole day
18. We can find sandstorm in the humid areas
19. A sandstorm does occur in some countries in the United States
20. Summer and spring are the possible time of sandstorm
21. In United States, the sandstorm happens only during the spring
22. Sandstorm does not give positive impacts
23. One of the sandstorm impacts is reducing visibility
24. We can predict the time when the sandstorm will occur

25. Sandstorm appears in the form of dust rain
26. Car accident is one of the impacts caused by sandstorm

Answer Keys

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

The distribution of exercise items

The Aspects of Reading Comprehension	Items	Number
Word Comprehension	3	3, 6, 7
Sentence Comprehension	4	2, 4, 9, 12
Paragraph Comprehension	3	5, 8, 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26
Text Comprehension	3	1, 11, 13

The scoring of test items

The Indicators of Reading Comprehension	Correct	Wrong
Word Comprehension	5	0
Sentence Comprehension	5	0
Paragraph Comprehension	5	0
Text Comprehension	5	0

The Formula to Calculate the Students' Scores

$$\textbf{Final Score} = \frac{n}{N} \times 100$$

Notes :

n : The obtained score

N : The maximum score of the test

Appendix E. The Tabulation of Students' English Scores

Students' Number	XI PMT 1	XI PMT 2	XI TKJ 1	XI TKJ 2
1	78	78	77	77
2	80	77	78	79
3	78	77	81	77
4	78	76	75	76
5	80	78	79	78
6	80	77	76	76
7	79	78	78	77
8	80	79	76	76
9	78	79	79	81
10	79	78	80	78
11	78	81	80	80
12	80	79	79	78
13	77	77	82	80
14	78	75	77	78
15	79	82	78	77
16	81	80	78	79
17	79	81	79	79
18	80	76	79	80
19	78	80	79	78
20	80	77	77	78
21	77	78	76	78
22	80	78	77	80
23	77	72	78	79
24	79	77	77	78
25	77	76	80	76
26	77	79	79	80
27	77	77	79	77
28	78	79	75	81
29	76	82	77	77
30	77	77	78	78
31	77	82	80	77
32	78	78	79	80
33	77	80	79	78
34		79	75	76
35		78	78	77

Appendix F. Difficulty Index of Try Out Test

Item Numbers	JPT	JJB	P	Criteria
1	35	26	0,7428	Fair
2	35	27	0,7714	Fair
3	35	27	0,7714	Fair
4	35	27	0,7714	Fair
5	35	26	0,742	Fair
6	35	27	0,7714	Fair
7	35	26	0,742	Fair
8	35	26	0,742	Fair
9	35	28	0,8	Fair
10	35	28	0,8	Fair
11	35	31	0,8857	Easy (deleted)
12	35	9	0,2571	Difficult (deleted)
13	35	9	0,2571	Difficult (deleted)
14	35	28	0,8	Fair
15	35	27	0,7714	Fair
16	35	27	0,7714	Fair
17	35	25	0,71428	Fair
18	35	26	0,7428	Fair
19	35	25	0,71428	Fair
20	35	28	0,8	Fair
21	35	25	0,71428	Fair
22	35	25	0,71428	Fair
23	35	28	0,8	Fair
24	35	31	0,8857	Easy (deleted)
25	35	30	0,8571	Easy (deleted)
26	35	33	0,9428	Easy (deleted)

Notes:

P : The index of difficulty (Facility Value)

JJB : The numbers of participants who answer the question correctly

JPT : the numbers of participants who answer the question

The criteria of difficulty index as follows:

0.0 – 019 : Difficult

0.20 – 0.80 : Sufficient / Fair

0.81 – 1.00 : Easy

Appendix G. The Result of Try Out Test of the Even Numbers (X)

No	Multiple Choice													
	2	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**Total**
1	1	1	1	0	0	0	1	0	1	1	1	0	1	8
2	0	1	1	1	1	1	1	1	1	1	1	1	1	12
3	1	1	1	1	1	0	1	1	1	1	1	0	1	11
4	1	1	1	1	1	0	1	1	1	1	1	1	1	12
5	1	0	1	0	0	0	1	1	1	1	1	1	1	9
6	1	1	1	1	1	0	1	1	0	1	0	1	1	10
7	0	1	1	0	1	1	0	1	1	1	1	1	1	10
8	1	1	0	1	1	0	1	1	1	1	1	1	1	11
9	1	1	1	1	1	0	1	1	1	0	1	1	1	11
10	1	1	1	1	1	0	1	1	0	1	1	1	1	11
11	0	0	0	0	1	0	1	1	1	1	1	1	1	8
12	1	1	1	0	0	1	1	1	1	1	1	1	0	10
13	1	1	1	1	1	0	0	1	1	1	0	1	1	10
14	1	1	1	1	1	0	1	1	1	1	1	1	1	12
15	0	1	0	1	1	0	1	1	0	0	0	0	1	6
16	0	1	1	1	0	0	1	1	1	1	1	1	1	10
17	1	0	0	1	1	1	0	0	1	1	1	1	1	9
18	1	1	1	0	1	0	1	1	1	1	0	1	1	10
19	1	1	0	1	1	0	0	1	1	1	1	1	1	10
20	0	0	1	1	1	1	1	1	1	0	1	1	1	10
21	1	1	1	1	0	0	0	1	1	1	1	1	1	10
22	1	1	0	1	1	1	1	1	1	1	1	1	1	12
23	1	0	1	0	1	0	1	0	1	1	0	1	1	8
24	1	1	1	1	1	0	1	1	1	1	1	1	1	12
25	0	1	1	1	0	0	1	1	0	1	1	1	1	9
26	1	0	1	1	1	0	1	1	1	0	0	0	1	8
27	1	1	1	1	1	1	0	1	1	1	0	1	1	11
28	1	1	1	1	1	0	1	1	0	1	0	1	1	10
29	0	0	1	1	1	1	1	1	1	0	1	1	1	10
30	1	1	0	0	1	0	1	0	1	1	1	1	1	9
31	1	1	0	1	1	0	1	1	1	1	0	1	1	10
32	1	1	1	1	1	0	0	1	1	0	1	1	1	10
33	1	1	1	1	1	1	1	0	1	1	1	1	1	12
34	1	0	1	1	1	0	1	1	1	1	1	1	1	11
35	1	1	1	0	0	0	1	0	0	0	0	1	0	5
Total	**27**	**27**	**27**	**26**	**28**	**9**	**28**	**27**	**26**	**28**	**25**	**31**	**33**	**347**

Appendix H. The Result of Try Out Test of the Odd Number (Y)

No	Multiple Choice													
	1	3	5	7	9	11	13	15	17	19	21	23	25	Total
1	1	1	0	1	1	1	0	1	1	0	0	0	1	8
2	1	1	1	1	1	1	0	1	1	1	1	1	1	12
3	1	1	1	1	1	1	1	1	1	1	0	1	0	11
4	1	1	1	1	1	1	0	1	1	1	1	1	1	12
5	1	0	1	0	1	1	0	1	1	1	1	1	0	9
6	1	1	1	1	0	1	0	1	1	1	1	1	1	11
7	1	1	1	1	1	1	1	1	0	0	0	0	1	9
8	1	1	1	1	0	1	0	1	1	0	1	1	1	10
9	1	1	1	1	1	1	1	1	1	1	1	0	1	12
10	1	1	0	1	0	1	0	1	1	1	1	1	1	10
11	0	1	1	1	1	0	1	1	0	0	0	1	1	8
12	0	1	1	0	1	1	0	1	1	1	1	1	1	10
13	1	0	1	1	1	1	1	0	1	1	1	0	1	10
14	1	1	1	1	1	1	0	1	1	1	1	1	1	12
15	1	1	0	1	1	1	0	1	1	0	0	1	0	8
16	0	0	1	1	0	1	0	1	1	1	1	1	1	9
17	1	1	1	1	1	1	0	0	0	0	0	1	1	8
18	1	0	1	1	1	1	0	1	1	1	1	0	1	10
19	1	1	0	1	1	1	0	1	1	1	1	0	1	10
20	0	1	1	1	1	1	0	0	0	1	1	1	1	9
21	1	1	1	1	1	1	0	1	1	0	1	1	1	11
22	1	0	0	1	1	1	0	1	1	1	1	1	1	10
23	1	1	0	0	0	1	0	1	1	1	1	1	1	9
24	1	1	1	0	1	1	1	0	1	1	1	1	1	11
25	1	1	1	0	1	1	0	1	1	1	1	1	1	11
26	1	1	1	1	0	1	1	1	0	0	1	1	1	10
27	1	1	1	0	1	1	1	1	1	1	0	0	1	10
28	1	0	1	1	1	1	0	0	1	1	1	1	1	10
29	1	1	1	1	0	1	1	1	0	1	0	1	1	10
30	1	1	1	0	1	0	0	1	1	1	1	1	1	10
31	1	0	0	0	1	1	0	1	1	0	1	1	1	8
32	0	1	1	1	1	1	0	1	1	1	0	1	1	10
33	1	1	0	1	1	0	0	1	1	1	1	1	1	10
34	1	0	1	0	1	1	0	1	1	1	0	1	0	8
35	1	1	0	1	1	0	0	0	1	0	1	1	0	7
Total	**26**	**27**	**26**	**26**	**28**	**31**	**9**	**27**	**25**	**25**	**25**	**28**	**30**	**343**

Appendix I. The Division of Even (X) and Odd (Y) Numbers of Try Out Test

No	X	Y	X^2	Y^2	XY	X+Y
1	8	8	64	64	64	16
2	12	12	144	144	144	24
3	11	11	121	121	121	22
4	12	12	144	144	144	24
5	9	9	81	81	81	18
6	10	11	100	121	110	21
7	10	9	100	81	90	19
8	11	10	121	100	110	21
9	11	12	121	144	132	23
10	11	10	121	100	110	21
11	8	8	64	64	64	16
12	10	10	100	100	100	20
13	10	10	100	100	100	20
14	12	12	144	144	144	24
15	6	8	36	64	48	14
16	10	9	100	81	90	19
17	9	8	81	64	72	17
18	10	10	100	100	100	20
19	10	10	100	100	100	20
20	10	9	100	81	90	19
21	10	11	100	121	110	21
22	12	10	144	100	120	22
23	8	9	64	81	72	17
24	12	11	144	121	132	23
25	9	11	81	121	99	20
26	8	10	64	100	80	18
27	11	10	121	100	110	21
28	10	10	100	100	100	20
29	10	10	100	100	100	20
30	9	10	81	100	90	19
31	10	8	100	64	80	18
32	10	10	100	100	100	20
33	12	10	144	100	120	22
34	11	8	121	64	88	19
35	5	7	25	49	35	12
Total	**347**	**343**	**3531**	**3419**	**3450**	**690**

Appendix J. The Result of Reading Post-test of the Experimental and Control Class

No	Experimental Class		Control Class	
	Name	Post-test Score	Name	Post-test Score
1	ADO	75	AW	75
2	ARP	80	AMS	70
3	APO	75	APHW	75
4	BEO	85	AEB	80
5	CSA	75	AAH	75
6	DF	80	BR	75
7	ETH	70	BAP	70
8	EAD	80	CP	75
9	FK	80	DPL	70
10	HY	80	DAN	70
11	IN	90	DFS	70
12	MIK	90	BDF	75
13	MRZA	80	FSB	80
14	MDAM	80	FR	75
15	MK	75	FNA	75
16	MAI	80	F	75
17	MEK	75	HSW	85
18	MHA	80	IR	75
19	MAR	80	IR	75
20	MFH	80	LM	80
21	NAR	80	LZA	75
22	ODP	80	LM	80
23	PW	90	MJIMI	75
24	RMZ	80	MK	75
25	RRH	75	MR	70
26	RS	70	RDH	75
27	SNW	85	RYD	70
28	SPAW	75	RWMH	75
29	SC	80	SD	85
30	SQ	85	SRY	70
31	UMAK	75	SHS	75
32	VA	80	SMH	70
33	ZNA	80	SR	80
34			UWS	80
35			VPP	80

Appendix K. The Tabulation of the Score of the Reading Comprehension Post-test of the Experimental Class and Control Class

Students' Number	Experimental Class	Control Class
	X	Y
1	75	75
2	80	70
3	75	75
4	85	80
5	75	75
6	80	75
7	70	70
8	80	75
9	80	70
10	80	70
11	90	70
12	90	75
13	80	80
14	80	75
15	75	75
16	80	75
17	75	85
18	80	75
19	80	75
20	80	80
21	80	75
22	80	80
23	90	75
24	80	75
25	75	70
26	70	75
27	85	70
28	75	75
29	80	85
30	85	70
31	75	75
32	80	70
33	80	80
34		80
35		80