THE EFFECT OF APPLYING GROUP INVESTIGATION METHOD ON VOCATIONAL HIGH SCHOOL STUDENTS' READING COMPREHENSION

THESIS

By

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ENGLISH EDUCATION STUDY PROGRAM

LANGUAGE AND ARTS DEPARTMENT

THE FACULTY OF TEACHER TRAINING AND EDUCATION

JEMBER UNIVERSITY

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DEDICATION

This thesis honorably dedicated to:

1. *My beloved parents, Didik Widiatmoko, and Nurul Hidayah. Thank you for your endless love and support all the time.*
2. *My beloved step father, Kholili Irawan*
3. *My beloved sister, Adinda Widia Pangestu, and also all of my family that have supported me to finish my thesis.*
4. *My Fiance, Edo Putra Wardana. Thank you for support all the time.*

STATEMENT OF THESIS AUTHENTICITY

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The Writer

Devi Syarifah Septiana

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CONSULTANTS' APPROVAL

THE EFFECT OF APPLYING GROUP INVESTIGATION METHOD ON VOCATIONAL HIGH SCHOOL STUDENTS' READING COMPREHENSION

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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,

Devi Syarifah Septiana

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SUMMARY

The Effect of Applying Group Investigation Method on Vocational High School Students' Reading Comprehension; Devi Syarifah Septiana, 140210401001; 2019; English Language Education Study Program, Language and Arts Department, Faculty of Teacher Training and Education,The University of Jember

Reading is one of the important language skills learnt by students and is used as one of the ways for gaining information. It is important for EFL learners to have not only the ability to read written materials but also the ability to understand what they have read. The success of teaching reading comprehension is influenced by the technique, method, and strategy that is used in teaching process. That is why the teacher should select the appropriate method in teaching. One of the method that can be applied in teaching reading comprehension is Group Investigation (GI). It was developed by Sharan and Sharan in 1989. In this method, the class is divided into several groups that study in a different phase of a general issue. The implementation of GI has 6 steps; determining subtopics and organizing into groups, planning investigation, carrying out investigation, planning a presentation, giving a presentation, and evaluating achievement. Hollingsworth et al (2007) point out that GI as a method of teaching turns out to be a valuable tool to help students learn comprehension strategies while encouraging positive interaction among peers. The students achieve academic success by increasing their reading levels and knowledge of comprehension skills, and there is also an increase in enthusiasm and motivation towards reading.

This research was conducted to investigate the effect of applying GImethod on students' reading comprehension at SMK Negeri 1 Jember in the 2018/2019 academic year. The area of the research was SMK Negeri 1 Jember. The research participants were determined by using cluster random sampling based on the result of homogeneity test to three classes (XI PM1, PM 2, and PM 3) of the eleventh grade with the materials of reading comprehension.From the calculation of ANOVA, the result showed that the population was homogenous.

Therefore, the researchertook two classes by lottery as the experimental and control groups. The two classes were XI PM 1 as the experimental group and XI PM 3 as the control group.

The design of this research was a quasi-experimental research with posttest only design. The design was based on the score of post-test only which was conducted after the experimental treatment had been applied. This design involved two groups which received different instructional treatment. The experimental group was taught reading comprehension by using GI. On the other hand, the control group was taught reading comprehension by applying Scientific Approach (SA) which has been used to teach reading comprehension at the school. The post-test was given to both two groups after receiving the teaching learning process twice. The result of Independent Sample T-test in the SPSS showed that the value of significant column Levene's test (2-tailed) was 0,029 and it was lower than 0,05. Then, it could be concluded that the null hypothesis (H0) was rejected while the alternative hypothesis (Ha) was accepted. It indicated that there was a significant effect of applying GI on the students' reading comprehension achievement. Considering the findings of the research, it is suggested that GI can be used as a consideration to help students in understanding reading comprehension text.

CHAPTER I
INTRODUCTION

This chapter informs readers about 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 research contributions.

1.1 Research Background

Cooperative learning (CL) method and its different models have become an interesting issue investigated by educational researchers in different countries. Group Investigation (GI) model with its collaborative nature and the integration of interaction and communication in the process of academic inquiry (Sharan and Sharan, 1992) enables students to take an active role in determining their own learning goals and processes (Jalilifar, 2009). This can be rephrased that GI is an inquiry model of teaching that assigns a group of students to investigate a topic, an issue, or a problem by giving them autonomy and responsibility to discuss and determine an effective strategy for achieving the goal of inquiry.

As a model of teaching, GI has been implemented and researched in English language teaching (ELT). The present study examines how GI facilitates students to comprehend reading text and affect students' reading comprehension. Reading that involves an active process of thinking (or meaning-making process) to understand messages in the textual and visual information (Westwood, 2008; Moreillon, 2007) appears to be a complex process for students. Therefore, the choice of instructional method becomes a determining factor in the success of reading comprehension. Through collaborative learning activities that encourage students to take their own learning responsibilities and promote critical thinking, it is expected that GI method could help students comprehend reading texts more easily.

From 2009 to 2015, several previous studies on the effect of GI method on English, reading comprehension, and motivation were reported by

educational researchers (see Mothaei, 2014; Karafkan, 2015; Pan et.al., 2013; Farzaneh et.al., 2014; Tan and Sharan, 2010; Jalilifar, 2009). These researches were mostly situated in Asia (e.g., Turkey, Iran, Indonesia, Taiwan, Singapore) and in Italy.All previous studies applied experimental research design although they differed in choosing the research participants. Three research studies (Mothaei, 2014; Pan et.al., 2013; Jalilifar, 2009) selected freshmen students as the participants, two research studies (Karafkan, 2015; Farzaneh et.al., 2014)selected senior high school students as the research participants, while Tan and Sharan, 2010 selected junior high school as the participant. As studies on the issue of GI and its effect on reading comprehension of vocational high school students in Indonesia were underexplored, the present study filled the gap by researching the effect of GI method on reading comprehension of the vocational high school students.

1.2 Research Question

Based on the background of the study above, the problem was formulated in the form of a question as follows: “Is there any significant effect of applying GI method on vocational high school students’reading comprehension?”

1.3 Research Objective

The objective of this research was to know whether or not there was a significant effect of applying GI method on vocational high school students’ reading comprehension.

1.4 Research Contribution

The result of this research was expected to contribute theoretically, practically, and empirically.

1. Theoretical contribution

   The findings were expected to confirm the extent to which theory of CL implemented through GI method has significantly influenced vocational high school students’ reading comprehension in an EFL learner.

2. Practical contribution

The result of this research was expected to give some evidence of how GI method is an effective strategy to help students understand reading text so that the English teachers consider using this method in teaching reading skill.

3. Empirical Contribution

The results of the research were expected to be useful for the future researchers to extend studies investigating GI method and its effects on students' reading skill or other language skills. The next researchers may apply different kinds of research designs, such as survey research, self-reflective research, action research, and experimental research in different settings and participants. This will enrich the availability of empirical data on the implementation of GI method in ELT.

CHAPTER II
REVIEW OF RELATED LITERATURE

This chapter presents the theory concerning of Group Investigation and Reading Comprehension and the previous studies related to the topic of issue being investigated.

2.1 Constructivist Learning Theory

The main theory that underpins cooperative learning refers to social constructivism was advanced by Lev Semyonovich Vygotsky. He considered that the roles of culture and society, language, and interaction are important in understanding how humans learn. Vygotsky (1994) assumed that knowledge is cultural; he took a socio-cultural approach in his study with children. This approach can be briefly described as “cooperative” and “cultural.” Vygotsky (1994) emphasizes this process of internalization, where children first experiences an idea, behavior, or attitude in a social setting, and then internalized this experience so that the experience becomes a part of the child's mental functioning. He suggested that children in their early years think the way they perceive and remember, while in subsequent years children perceive and remember the way they think.

Central to Vygotsky's theory of cognitive development is his theoretical construct of the zone of proximal development. Vygotsky (1994:86) defined the zone of proximal development as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others. The zone of proximal development captures the child’s cognitive skills that are in the process of maturing, and these skills can only be honed with the assistance of more-skilled persons (Tudge 1992). It emphasized that children and adults are both active agents in the process of child’s development. When applying to teaching it means that both the teacher and a students are seen as active agents in children’s learning.

The teacher's intervention in children's learning is necessary, but it is the quality of the teacher- learner interaction, which is seen as crucial in that learning.

GI is a form of cooperative learning instructional method based on Vygotsky's (1994) theory of the fundamental role of social interaction and Zone of Proximal Development (ZPD) (cited in Ghorbani, 2013) which uses text comprehension. He believed that the process of learning involved moving into a zone of proximal development which is supported by another individual in dialogue with the learner. Through dialogue the learner is able to construct new ideas and understanding. Dialogue happens in GI which takes place in small groups of learners with teachers as the facilitator. GI which is a contemporary application of Vygotsky's theories comprises planning subtopics and organizing into groups, planning investigation, carrying out investigation, planning a presentation, giving a presentation, and evaluating achievement..

2.2 Concept of Cooperative Learning

Cooperative learning is an important methodintoday's education because it effectively helps students gain better learning achievement (Akcay and Doymuz, 2012). Cooperative learning is a method in which students are assigned to small groups in the classroom where they help one another to learn together. Students achieve more and increase their self-confidence as individuals, develop communication skills and participate actively in this method. It is argued by Arends (2008:5) that cooperative learning is a model of teaching with a set of common attributes and features. Although, there are several variations, cooperative learning has its essential features in the following: (1) students work in team to master academic materials, (2) teams are made up of high, average, and low achievers and are racially and sexually mixed, (3) reward systems are group-oriented rather than individually-oriented.

In line with him, Isjoni (2010:27-28) states that cooperative learning is learning together, helping each other in learning, and ascertaining each of the students in a group to reach the aim of the task that is determined before. Kagan (1989) contributes that in cooperative learning the teacher designs social

interaction structures as well as learning activities. From all the definitions above, it can be concluded that cooperative learning is a collaborative learning that involves students to do social mediating and interaction with others; each member of team has to work together, solve the problems given by the teacher, and also help teammates learn.

2.3 Group Investigation and Its Effect on Reading Comprehension

Reading is the activity that cannot be separated from comprehension and recognition skills. Reading comprehension refers to reading with understanding. Gray (1987:38) defines that major goal of students' reading should be to understand and comprehend a text. Reading comprehension is the process of interaction that occurs between the readers and the text that can activate a range of knowledge in the students' mind by the new information supplied in the text (Carrel, 1995:56-57). Hennings (1997:245) also states that reading comprehension means interacting and constructing meaning with text. In line with him, Grellet (1981:3) also confirms that reading comprehension is understanding a written text which means extracting the required information from the text as efficiently as possible. Besides, Grabe and Stoller (2002:29) state that reading comprehension is an extraordinary feat of balancing and coordinating many abilities in a very complex and rapid set of routines that makes comprehension a seemingly effortless and enjoyable activity for fluent readers. From the view points above, it can be concluded that reading comprehension is an interactive process between the readers and the text to gain the information, knowledge, and idea from the text.

The success of teaching reading comprehension is influenced by the technique, method, and strategy that is used in teaching process. That is why the teacher should select the appropriate method in teaching. GI is a form of cooperative learning teaching models that emphasized on student's participation and activity to seek their own information from the materials learned. Sharan and Sharan (1992) argue that group investigation gives students more opportunity to have ethnic attitude and will cooperate better than the students who study in

traditional class. GI model offers the development of moral and social issues; students are organized by cooperative inquiry on social and moral problem or academic problems. According to Sharan and Sharan (1992), the implementation of group investigation has 6 steps: 1) determining subtopics and organizing into groups, 2) planning investigation, 3) carrying out investigation, 4) planning a presentation, 5) giving a presentation, 6) and evaluating achievement.

By applying the six steps, students have much freedom to choose their topics of interest for investigation, plan and carry it out, present and evaluate the results. Hollingsworth et al (2007) point out that GI as a method of teaching turns out to be a valuable tool to help students learn comprehension strategies while encouraging positive interaction among peers. The students achieve academic success by increasing their reading levels and knowledge of comprehension skills, and there is also an increase in enthusiasm and motivation towards reading. GI is a way to have students work together to better comprehend what they are reading. What matters in these activities is that students should have the desire to communicate and to replicate real communication. Adopting this method, a teacher is expected to be able to run the teaching learning process effectively, especially teaching of reading. The students will work in groups by working on the given material. Thus, when a teacher puts the students in groups he or she has to ensure that the students having different level are put together. In addition, the activity offered in GI is interesting so that the students will feel new atmosphere in the classroom and this method is expected to energize the students' motivation to be interested in reading. It is also expected that it can improve their reading comprehension.

GI method has many advantages. According to Trianto (2007:65) there are 4 kinds of excess group investigation method in the process of learning activities, namely:

1. Active learning and students-centered communicative.
2. Learning by making an atmosphere of mutual cooperation and interaction among students in the group regardless of their background.
3. Students are trained to have a good and conducive communication

4. Students are motivated and active in the learning process from the planning phase until the final stage of learning that is presenting the results of investigation of each group.

Based on the advantages above, it can be concluded that GI makes the students active in the classroom teaching and learning process and they are also more confident to communicate with others.

However, there are 3 kinds of weaknesses in the process of GI methods of group learning activities (Trianto, 2007:65) namely:

1. Students who have weak power potential, will not be very active in doing group discussion.
2. Students who become member of the group will trust the chairman of the group. They will neither discuss do the group work nor present the result of investigation.
3. Students who are weak in intellectual and ability, tended to trail the friends' group.

Based on the disadvantages above, it can be concluded that the teacher has to change the method of teaching and the teacher has to make the students active in the classroom, by choosing the students who are not active to answer the question and giving score if the students can answer well.

2.4 Previous Studies on the Implementation of Cooperative Learning in Educational Field

There were a number of researchers who investigated the effects of cooperative learning on students' achievement in English subject. Applying quasi-experimental withpost-test design, Mothaei (2014) examined the effect of cooperative learning on students' general English achievement. The results of this study showed that the students in experimental group got better scores in nearly all components of general English in post-test. The differences were statistically significant. It shows that the mean difference of pre-test and post-test between experimental and control groups at 0.1 significance level in grammar and vocabulary is significant.

Next, by employing experimental design, Karafkhan (2015) investigated the effect of group investigation (GI) and cooperative integrated reading and composition (CIRC) as cooperative learning techniques on Iranian EFL learners' reading comprehension at an intermediate level. The findings revealed that there was a meaningful difference in the mean scores of reading comprehension of students in experimental group (GI and CRIC) compared to the mean scores of students in the control group. The significant value of the difference between GI experimental group and CRIC experimental group at the error level of 0.05 is 0.001 which is less than 0.05. So it can be claimed that there is the significant difference between the mean of the reading comprehension score of GI experimental group and CRIC experimental group.

The next researcher are Pan and Wu (2013) who investigated the effects of cooperative learning on English reading comprehension and learning motivation of EFL freshmen. The researcher employed a pre-test post-test comparison group quasi-experimental design by comparing the cooperative learning instruction and traditional lecture instruction. The findings indicate significantly higher liking, dedication, self-efficacy, and extrinsic motivation compared to students receiving traditional lecture instruction. This consequently increases their confidence and motivation to promote effective reading comprehension for EFL freshmen.

The next research was conducted by Jalilifar (2009) who investigated the impact of Student Team Achievement Division (STAD) and Group Investigation (GI) (two techniques of Cooperative learning) on students' reading comprehension achievement of English as a Foreign Language (EFL). The participants of this study were pre-intermediate female college students. The study used experimental group with post-test only design. The results showed that CL techniques like STAD and GI take advantage of heterogeneity, by encouraging students to learn from one another and from more and less knowledgeable peers.

Lastly, Tan et al (2010) conducted an experimental research on the effects of group investigation method on students' academic achievement and on their motivation to learn. The research participants were the middle school students of Grade 7-8 in Singapore. The result showed that group investigation method did

not significantly affect high and low achievers. Group investigation affected significantly high achievers' motivation to learn on the criteria of subscale only.

Based on the results of previous studies, it was revealed that GI and other techniques of cooperative learning, such as STAD and CIRC, had significant effects on students'achievement of English and reading as well as students' motivation. To test and confirm the effectiveness of cooperative learning on reading comprehension in different context, the present study investigates the effect of GI, a model of cooperative learning, on reading comprehension of vocational high school students in Indonesia.

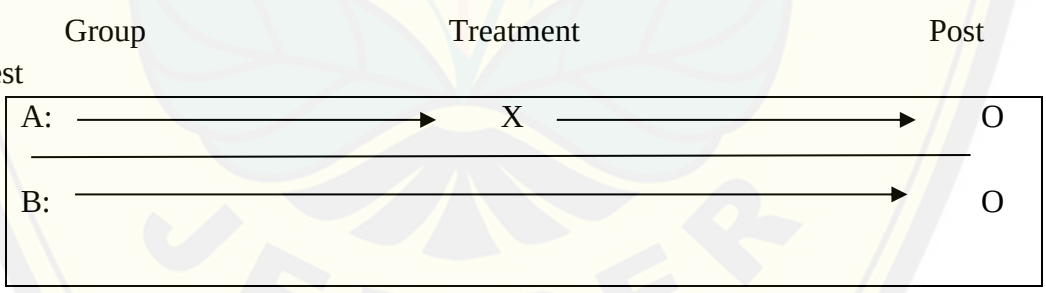
CHAPTER III
RESEARCH DESIGN

This chapter explains the method or the procedure of the research. It consists of the research design, the research context, the research participant, data collection method, and data analysis method.

3.1 Research Design

This research applied quasi-experimental with posttest onlydesign because it is not possible to randomly assign subjects to treatment and control group (Ary, et. al., 2010:316). The quasi experimetal with posttest only design consistedof two groups, they were control group and experimental group.

In this research one group as the experimental group wastaught by using Group Investigation method and another one as the control group was taught by applying Scientific Approach. The experimental group and the control group got the same material, and post-test in the similar time allocation. According to Cresswell (2012), quasi experimental design is illustrated as it is in the following diagram:



Notes:
A: Experimental Group
B: Control Group
X: Treatment
O: Post Test

Taken from Creswell (2012:310)

Based on the diagram above, the procedures of the design were as follows:

1. Taking mid-term scores document of three classes (XI PM 1, XI PM 2, and XI PM 3)
2. Determining the experimental and control groups having equal ability by analysing the students' midterm scores by using ANOVA (analysis of variance) formulate know the result of the homogeneity test on page 14.
3. Constructing the lesson plans for the experimental group and the control group.
4. Giving treatment to the experimental group by Group Investigation in teaching reading, while the control group was taught reading comprehension by applying scientific approach. Both of them were given the same materials and the same tasks by the same teacher.
5. Administering tried out test to a class which did not belong to either the experimental or the control group.
6. Administering post-test in the form of reading comprehension test to both the experimental and control groups.
7. Analysing the results of post-test results by using independent sample t-test to know whether or not the mean scores are significantly different.
8. Interpreting the results of the test and drawing conclusion based on the results of data analysis.

3.2 Research Context

By applying purposive method, this research was conducted at a vocational high school (SMKN 1) Jember. There were a number of reasons for selecting this school as the place to conduct the study. First, the school principal has given the writer permission to conduct the study in this school. Second, reading as one of the target language skills in the English Curriculum 2013 is also taught in this school. Lastly, the English teacher has allowed the writer to conduct the experimental research intwo of her classes.

3.3 Research Participants

Creswell (2012) states that participants in an experimental study are those individuals tested by the researcher in order to determine whether the intervention made difference in one or more outcomes or not. The participants of the present study were two of the three classes of the eleventhgrade students of SMKNegeri 1 Jember. Therefore,the population of the present study was three classes of the eleventh grade students of SMK Negeri 1 Jember. Two classes were selectedby applying cluster random sampling having known the result of homogeneity test (McMillan, 1996). The result of the ANNOVA test showed that the significant level (p- value) was greater than or equal to 0.05 ($p \geq 0.05$). It means that the population is homogenous. Then, the lottery was be used to determine the experimental group and the control group.

The homogeneity analysis was conducted to know whether the population of the research was homogeneous or not. The researcher analyzed the English scores (midterm score got from the English teacher) of the research population. The population of the research was the three classes of the eleventh grade students of Marketing Department in the 2018/2019 academic year. The scores can be seen in Appendix E. The results of the homogeneity test were analysed statistically by using ANOVA formula.

Table 3.1 The Mean Scores of XI PM 1, XI PM2 and XI PM 3's Homogeneity Test

Descriptive

	N	Minimum	Maximum	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
							Lower	Upper
XI PM 1	35	70	80	75.71	4.396	0.80	73.97	77.12
XI PM 2	33	70	82	73.27	3.591	0.64	72.06	74.58
XI PM 3	33	70	80	74.39	4.286	0.72	72.72	75.73
Total	101	70	81	74.460	4.091	0.72	72.92	75.81

The table above showed that there were 101 students as the population of the study. The mean score of XI PM 1 was 75.71, the mean score of XI PM 2 was

73.27, and the mean score of XI PM 3 was 74.39. The results of the ANOVA formula can be seen in the following output in the table 4.2 below:

Table 3.2 The Output of ANOVA

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	101.661	2	50.830	3.005	.054
Within Groups	1657.567	98	16.914		
Total	1759.228	100			

Based on the calculation, the result of the computation done statistically by using One Way ANOVA showed that the value of the significant column was 0.054 which was higher than 0,05. It means that there was no difference on the eleventh grade students of marketing department in reading comprehension among those three classes or it can be said that the three classes were homogenous. Based on the result of ANOVA analysis, two classes were chosen as the research respondents randomly. The experimental group and control group were determined randomly by lottery. The two classes were XI Marketing 1 as the experimental group and XI Marketing 3 as the control group. The scores of all classes are enclosed in Appendix E.

3.4 Interventions

This experimental research was conducted for about 4 up to 5 weeks. The students met once a week and each session took 3 x 45 minutes. Both experimental and the control groups weregiven the same materials and reading exercises. In the experimental group reading comprehension was taught by using GI, while in the control group reading comprehension was taught by using scientific approach.

3.4.1 Intervention in Experimental Group

The experimental students were randomly divided into six sub-groups thus containing four until six students for each sub group. The teaching of reading through GI follows the steps proposed by Sharan and Sharan (1992) as follows:

1) Determining subtopics and organizing into groups

Students chose specific topic by using lottery within a general problem area, determined by the teacher, for example, pollution. During the discussion, subtopics of pollution such as air pollution, land pollution, light pollution, noise pollution and water pollution were identified. Students who were interested in working in the same subtopic can form groups together and develop questions for investigation. Sometimes, teacher might need to provided a repeated model to make the students familiar and understand with the steps of GI. Then, teacher might intervene in order to strike a balance between the heterogeneity of the group and the interest of students. The group is consist four-six members.

2) Planning investigation

Students planned together, are consistent with the subtopics of the problem selected in step 1, what they want to investigate and develop their research questions related to the subtopics they have chosen.

3) Carrying out investigation

Each member gathered information that they collected, reviewed the subtopic, analyzed it, and reached some conclusions. Each of them has their own work, they have to work closely together and help the other group mates whenever possible. Sometimes, it was the responsibility of teachers to teach them different social skills to facilitate their cooperative work. When members have completed their work, each of them has to write a summary of their findings which contribute to the group's findings. Kinds of sources of information can be obtained both inside and outside the school.

4) Planning a presentation

The groups have to plan how to present their findings to the whole class. It requires the students to select those important facts from their investigation

and present them in a clear and concise way so that all the students in the other groups can learn from them.

5) Giving a presentation

Groups made their public presentation in class. Each group in the class gave an interesting presentation of the topics studied in order to get classmates involved in one another's work and to achieve a broad perspective on the topic. Group presentations are coordinated by the teacher.

6) Evaluating achievement

In cases where groups followed different aspects of the same topic, students and the teacher evaluated each group's contribution to the work of the class as a whole. The achievement of each student and the group has assessed. A quiz has set to assess individual knowledge. The test was made up of the questions that are prepared by each group according to their subtopic investigated. The teacher can also assess the students by giving individual worksheet to the class and observing them in the process of working on final project report.

3.4.2 Intervention in Control Group

The control group was taught by using scientific approach during the teaching and learning reading. The control group was taught the same materials and exercise as the experimental group by the same teacher. The steps of scientific approach used are explained as follows:

a. Observing

The students observed the text concerning of picture, the tittle and the number of paragraph in the text.

b. Questioning

The students asked questions about explanation text, its generic structures, and its language features, the topic of the text, verbs, adjectives and nouns in the text, and also the important information in the text.

c. Exploring

The students found the word, sentence, paragraph and text meaning in the text and didthe exercise in the form of multiple choices.

d. Associating

The students found the general information, the unfamiliar words and looked up the meaning by using dictionary, discussed difficulty faced in the text under the teacher's guide, then did the exercise in the form of multiple choice questions independently.

e. Communicating

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

3.5 Data Collection Method

In this study, the researcher was used reading test to collect the data about students' reading comprehension achievement.The reading test (post-test) was given to both the experimental and control groups at the end of experiment (Creswell, 2012). Try out test was conducted to know test validity, test reliability, and item difficulty.

a) Test Validity

As a good reading test, the test items were established through content validity. This means that the reading skills to be measured must be based on the standard competence and basic competences of reading stated in English curriculum 2013. Standard competence of reading 3.8. states "*Membedakan fungsisosial, struktur teks, dan unsur kebahasaan beberapa teks explanation lisan dan tulis dengan memberi dan meminta informasi terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI, sesuai dengan konteks penggunaannya"*. It means "Differentiating the social functions, text structures, and linguistic elements of some oral and written explanation texts by giving and asking information related to natural or social phenomena covered by other subjects in XI grade, according to the context of their use".Basic competence of reading 4.8. states *"Menangkap makna secara kontekstual terkait fungsi sosial, struktur teks, dan unsur kebahasaan teks explanation lisandan tulis, terkait gejala*

alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI".It means"responding the related meaning to social function, text structure, and linguistic elements of explanation text and writing, related to natural or social phenomena covered in other subjects in XI grade".

The reading test (post-test) covered 3 items on word comprehension, 5 items on sentence comprehension, 4 items on paragraph comprehension, and 3 items on text comprehension. The test format is in the form of objective tests (multiple choices items) which has only one correct answer, and can be scored mechanically. In this research, the post-test consists of 15 items that must be done by the students in 45 minutes. To get the students' final score, the following formula is applied:

$$N = \frac{n}{15} \text{ x } 100$$

Notes: N: the final score

n: the number of the correct answers

b) Test Reliability

In this research, the researcher tried out the test in order to measure its reliability (i.e., the consistency of scores produced by the instrument). The results of the tryout test was analysed by using Spearman-Brown Formula (Split-half OddEven). The researcher signed (X) for the odd numbers and (Y) for the even numbers. The correlation between X and Y was analyzed by using Product Moment formula (Sudjiono, 1996). The calculation of tried out result is presented below.

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

$$r_{xy} = r_{\frac{11}{22}} = \frac{33(1220) - (199)(202)}{\sqrt{\{33(1209) - (199)^2\}\{33(1250) - (202)^2\}}}$$

$$r_{xy} = \frac{40260 - 40198}{\sqrt{\{39897 - 39601\}\{41250 - 40804\}}}$$

$$r_{xy} = \frac{62}{\sqrt{\{296\}\{446\}}}$$

$$r_{xy} = \frac{62}{\sqrt{13201}}$$

$$r_{xy} = \frac{62}{114{,}89}$$

$$r_{xy} = 0.54$$

Notes:
r_{xy} = Reability Coefficient
ΣXY = The total number of odd items and even items
ΣX = The total number of odd items
ΣY = The total number of even items
N = The number of participants

(Adapted from Sudjiono, 1996:219)

The result of estimation was reliability coefficient of the half test that was 0.54. In order to obtain the reliability coefficient of the whole test items, the value of rxy was taken into the following formula:

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

$$r_{11} = \frac{2\ x\ 0.54}{1 + 0.54}$$

$$r_{11} = \frac{1.08}{1.54}$$

$$r_{11} = 0.70$$

Notes:
$r11$ = the reliability coefficient for the whole test items
$r\frac{11}{22}$ = the correlation coefficient of a half test items

From the calculation above, the reliability coefficient of the whole test items was 0.70. Concerning with this research, Sudjiono (1996:219) confirms that the reliability coefficient of the teacher made test is believed to be reliable if the reliability coefficient is ≥0.70. This means that the test items were reliable.

c) Item Difficulty

Heaton (1990:178) states that the difficulty index of an item simply shows how easy or difficult a particular item is in the test. It is expressed as the fraction or percentage of the students who answer the item correctly. If the test items are too easy, it will not stimulate the students' effort in answering the test items. On the contrary, if the test items are too difficult, it will make the students discouraged and unenthusiastic to answer the test items because they do not understand the test items. The item difficulty level is calculated by using the following formula:

$$FV = \frac{R}{n}$$

Notes:
FV = Facility Value (Difficulty Level)
R = Right answer done by the participant
n = The number of participant

(Heaton, 1990:178)

After finding the index of difficulty level, then it is interpreted by using the criteria of difficulty index below.

Facility value	Interpretation
0.0 – 0.19	Difficult
0.2 – 0.80	Fair
0.81 – 1.00	Easy

(Djiwandono, 1996:141)

The try out test consisted of 15 multiple choice questions. The test was administered within 45 minutes. From the result of the difficulty index analysis of the test items, it was known that the range of the difficulty index was from 0.66 to 0.78 (see Appendix G). Thus, the result of the test items were categorized as fair items. Therefore the researcher could use all the test items which were categorized as fair items. Thus, the researcher used all the try out test as the items in post test15 items.

3.6 Data Analysis Method

In this research, students' reading scores in the post-test was analyzed statistically by using independent sample t-test formula was compare the mean score of the control and the experimental group. It will be done to find out whether or not there is a significant effect of Group Investigation Method on the eleventh grade students' reading achievement. The result of data analysis was consulted to the independent sample t-test formula in SPSS Computing system with 5% of significance level (confidence interval 95%) to know whether the result was significant or not. The procedures using independent sample t-test formula in SPSS are as follows:

1. Inserting the scores of the experimental group and the control group.
2. Giving a label (1) for experimental group, and (2) for control group.
3. Calculating the significant difference by clicking analyze, compare means, and independent sample t-test.
4. Clicking the test variable and then click on the upper of the two buttons with arrows on, transfer the test variable into the box headed"Test Variable(s)". Then, click on the grouping variable and then click on the lower button.
5. Showing the variable name in SPSS, with "(??)". Click on the "Define Groups..." button, and then write the code numbers are 1 and 2. Then, click "Continue".
6. Using 95% confidence level or 5% significance level for option. Then, click "Continue" and then click "OK"
7. Giving interpretation to the output of independent sample test calculation.

CHAPTER V
CONCLUSION AND SUGGESTION

This chapter presents the conclusion of the findings 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 discussed in chapter IV, it can be concluded that there was a significant effect of using GI on the eleventh grade students' reading comprehension at SMK Negeri 1 Jember. This result indicates that the experimental group who was treated by using GI achieved a better reading comprehension than the control group who was treated by using scientific approach.

5.2 Suggestion

Due to the results of the research which showed that GI gave a significant effect on the students' reading comprehension achievement, this method can be used as a consideration in teaching reading comprehension. Therefore, the researcher proposed some suggestions to the following people.

5.2.1 The English Teacher

It is suggested that the English teachers of SMK Negeri 1 Jember use Group Investigation Method as an alternative method in their teaching learning process. The teacher can use this method to improve their students' reading comprehension because this method is designed to relate the students' background knowledge with reading text. Also, the English teacher can use this research as a reference to find out the steps to apply Group Investigation in teaching reading comprehension.

5.2.2 The Future Researchers

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

REFERENCES

Akcay N, & Doymuz K. (2012). The Effects of Group Investigation and Cooperative Learning Techniques Applied in Teaching Force and Motion Subjects on Students' Academic Achievements. *Journal of Educational Sciences Research*. 2, (1).

Arends, R. (2008). Learning to Teach. Yogyakarta: *Pustaka Pelajar*. 2 (5)

Ary, D., Jacobs, L. C., Sorensen, C., and Razavieh, A. 2010. Introduction to Research in Educatation. Eight Edition. Belmont: *Wadswoth Cengange Learning.*

Carrel, P. L.J. Devine, and D.E Eskey. 1995. Interactive approaches to school language reading. Cambridge: *Cambridge University Press.*

Creswell, J. W. 2012. Educational Research:Planning, Conducting, and Evaluating Quantitative and Qualitative Research, Fourth Edition. Boston: *Pearson Education, Inc.*

Daniel, Z.(2008). Group Investigation: Theory and Practice. *Ontario Institute for studies in Education Journal*

Djiwandono, M. S. 1996. Tes Bahasa dalam Pengajaran. Bandung: *Penernit ITB.*

Farzaneh N, & Nejadansari D. (2014). Students' Attitude towards Using Cooperative Learning for Teaching Reading Comprehension.*Theory and Practice Language Studies*. 4, (2), 287-292

Ghorbani, M. R, Gangeraj, A. A, and Alavi, S. Z. 2013. Reciprocal Teaching of Comprehension Strategies Improves EFL Learners' Writing Ability. Current Issue in Education. 16(1):1– 13

Grabe, William and Stoller, Fedricka L. 2002. Teaching and Researching Reading. *Great Britain: Pearson Education.*

Gray, M. J. 1987. Comprehension Monitoring: What the Teacher Should Know. The Clearing House, 61 (1): 38-41. http://www.jstor.org/stable/30188323

Grellet, F. 1981. Developing Reading Skill: a Practical Guide to Reading Comprehension. *Cambridge University Press.*

Heaton, J. 1990. Writing English Language Test. Hongkong : *Longman Group*

Hennings, D. G. 1997. Communication in Action: Teaching Literature Based for Language Arts. Sixth Edition. Boston: *Houghton Mifflin Company.*

Hollingsworth, A., Sherman, J., Zaugra, C. 2007. Increasing Reading Comprehension in First and Second Grade through Cooperavtive Learning, Unpublished MA Thesis. *San Xavier University & Pearson Achievement Solution.* Chicago.

Isjoni. 2010. Cooperative Learning. Bandung: *Alfabeta.* 27-28

Jalilifar, A. (2009). The Effect of Cooperative Learning Techniques on College Students' Reading Comprehension. *System, 38*, 96-108.

Johnson, D (2002). Cooperative learning methods. *Journal of Research in Education*,12(1), 5-24.

Johnson, D.W., Johnson, R.T., & Stanne , M.B.(2000). Cooperative learning methods: A meta-analysis. *Cooperative Learning Center at the University of Minnesota.* Available: http:// www.clcrc.com/pages/cl-methhods.html .

Kagan, S. (1989). Cooperative Learning. San Juan Capistrano*: Kagan Cooperative Learning*

Karafkan, M.A. (2015). Investigating the Effects of Group Investigation (GI) and Cooperative Integrated Reading and Comprehension (CIRC) as the Cooperative Learning Techniques on Learner's Reading Comprehension.*International Journal of Applied Linguistics & English Literature*, 4, (6).

Killen, R. 1998. Effective Teaching Strategies: Lessons from Research and Practice. Australia: *Social Science Press.*

McMillan, H. 1996. Educational Research:fundamental for the Consumer. New Yokrk: *Harpin Collins Publisher*.

Moreillon, J. 2007. Collaborative Strategies for Teaching Reading Comprehension Maximizing Your Impact. Chicago: *American Library association.*

Mothaei B. 2014. The Effect of Cooperative Learning on General English Achievement of Kermanshah Islamic Azad University Students. Iran: *Procedia - Social and Behavioral Sciences.* 98,(1249 – 1254)

Pan Y.C, & Wu Y.H.2013.The Cooperative Learning Effects on English Reading Comprehension and Learning Motivation of EFL Freshmen.*Canadian Center of Science and Education.* 6, (5).

Sangadji, S. 2016. Implementation of cooperative learning with group investigation model to improve learning Achievement of vocational school students in Indonesia. *International Journal of Learning & Development*, 6(1).

Tan Ivy, Sharan Shlomo, and Lee Christine K.2010. Group Investigation Effects on Achievement , Motivation, and Perceptions of Students : Singapore. *The Journal of Educational Research*. 100, (3).

Trianto. 2007. Model-model Pembelajaran iInovatif berorientasi kontruktivistik. *Prestasi Pustaka*: Jakarta.

Tudge, J. (1992). Vygotsky, the zone of proximal development, and peer collaboration: Implications for classroom practice. In L. C. Moll (Ed), *Vygotsky and education: instructional implications and applications of sociohistorical psychology*. New York, NY, US: Cambridge University Press. 155-172

Sharan, Y &Sharan, S. 1992. Expanding Cooperative Learning Through Group Investigation.*NewYork: Teachers'Collage Press.*

Slavin, R.E. 1995. *Cooperative Learning: Theory, Research, and Practice*. Boston: Allyn&Bacon

Sudjiono, A. 1996. Pengantar Evaluasi Pendidikan. Jakarta: PT. *Raja Grafindo Persada.*

Vygotsky, L.S. 1994. Mind in Society: The Development of Higher Psychological Processes. Cambridge: *Harvard University*

Westwood, N. 2008. Strategies for College Reading and Thinking. New York: *McGraw-HillI*

APPENDICES

Appendix A. Research Matrix

Title	Problem	Variables	Indicator	Data Resources	Research Methodology	Hypothesis
The Effect of Applying Group Investigation Method on Vocational High School Setudents' Reading Comprehension	Is there any significant effect of Applying Group Investigation Method on Vocational High School Setudents' Reading Comprehension	**Independent Variable** Applying Group Investigation (GI) Method in Teaching Reading **Dependent Variable** Reading Comprehension Achievement	**1. The steps of GI Method** - determining subtopics - planning investigation - carrying out investigation - planning a presentation - giving a presentation - evaluating achievement. **2. The students' score of reading comprehension test covering:** - Word comprehension. - Sentence comprehension. - Paragraph comprehension. - Text comprehension.	**1. Research Participant:** The Eleventh Grade Students of SMK Negeri 1 Jember in the 2018/2019 Academic Year **2. Informant** The English teacher of the Eleventh year students of SMK Negeri 1 Jember who teaches XI class	**1. Research Design:** Quasi-experimental research design with (posttest only) **2. Area DeterminationMethod:** Purposive Method **3. Participants Determination Method:** Two classes were selected by applying cluster random sampling having known the result of homogeneity test **4. Data Collection Method:** Reading Comprehesion Test **5. Data Analysis** t-test formula by using SPSS software	There is a significant effect of Applying Group Investigation Method on Vocational High School Setudents' Reading Comprehension

Appendix B. The Names of Research Participants

No	Experimental Class	Control Class
	Names	Names
1	AK	AIAP
2	AF	ANH
3	ANI	ASAI
4	ANA	ATM
5	ATW	CF
6	BF	DF
7	BK	EAP
8	CW	GCF
9	DIN	GN
10	DA	GDI
11	DM	HS
12	DAW	HNF
13	DD	HH
14	DL	IND
15	EH	LEA
16	FF	MA
17	FYP	MAAS
18	GA	MHK
19	LA	MDM
20	MNF	MU
21	MAS	MI
22	MR	MS
23	MS	PNF
24	MIIB	RD
25	MRS	RR
26	MRP	RW
27	NH	S
28	PNO	SNA
29	Q	SDRS
30	RH	TT
31	RS	VF
32	RD	YT
33	TAY	YWS
34	TAZ	
35	Y	

Appendix C. Lesson Plan 1

Lesson Plan
(The 1st Meeting)

School : SMK N 1 Jember
Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 1 meeting (3 x 45 minutes)

A. Core Competence

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.
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 Indicator

Basic Competence	Indicator
3.8 Membedakan fungsi sosial, struktur teks, dan unsur kebahasaan beberapa teks explanation lisan dan tulis dengan memberi dan meminta informasi terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI, sesuai dengan konteks penggunaannya.	3.8.1 Finding similarities between the social function, generic structure, and language features of (oral and written) explanation text 3.8.2 Finding differences between the social function, generic structure, and language features of (oral and written) explanation text
4.8 Menangkap makna secara kontekstual terkait fungsisosial, struktur teks, dan unsur kebahasaan teks explanation lisan dan tulis, terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI, sesuai dengan konteks penggunaannya.	4.8.1 Answering comprehension questions at word level 4.8.2 Answering comprehension questions at sentence level 4.8.3 Answering comprehension questions at paragraph level 4.8.4 Answering comprehension questions at text comprehension

C. Learning Objectives

Students will be able to

1. Find similarities between the social function, generic structure, and language features of (oral and written) explanation text
2. Find differences between the social function, generic structure, and language features of (oral and written) explanation text
3. Answer comprehension questions at the word level
4. Answer comprehension questions at the sentence level
5. Answer comprehension questions at the paragraph level
6. Answer comprehension questions at the text level

D. Learning Material

- Definition of Explanation

  Explanation is a text which explains the processes related to the formation of natural, social, scientific, and cultural phenomena.

  Examples of explanation texts: Reports on natural phenomena, articles on scientific inventions, documentary films

- Generic Structure of Explanation
  1. General Statement: This part presents the subject that is going to be explained
  2. Explanation: The supporting paragraphs are known as explanation. The explanation Statements are in chronological order to illustrate how the subject came into existence or how it works.
- Language Features of Explanation
  - Simple present tense
  - Passive voice
  - Conjunction of time and cause effect
  - Adverbial phrases
  - Noun phrases

E. Learning Method

Experimental Group

- Method : Group Investigation
- Steps : Topic Selection, Cooperative Planning, Implementation, Analysis and Synthesis, Presentation of Final Project, Evaluation.

Control Group

- Method : Scientific Approach
- Steps : Observing, questioning, exploring, associating, communicating

F. Media and Resources

- **Media** :
  - Explanation text
  - Worksheet
  - Ruler, spidol, board
  - Laptop & LCD
  - Power Point Presentation
- **Resources**
  - Kementerian Pendidikan dan Kebudayaan. 2014. Buku siswa Mata Pelajaran bahasa inggris. Jakarta: Kementerian Pendidikan dan Kebudayaan.
  - *http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html*

G. Teaching Learning Activity

Sequences	Experimental Group	Time	Control Group	Time
Set Induction	1. Responding the greeting and questions from teacher related to the previous materials 2. Giving attention while the teacher checks students' attendance list 3. Answering 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	10'	1. Responding the greeting and questions from teacher related to the previous materials 2. Giving attention while the teacher checks students' attendance list 3. Answering 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	10'
Main Activity	**Determining subtopics and organizing into groups:** 1. The teacher models the six steps of GI. 2. Teacher asks students to make a group. One	40'	**Observing** 1. Observing the text entitled *pollution* concerning of picture, the tittle and the number of paragraph in the text 2. Explaining about the topic of "Pollution"	55'

	group consist of 4-6 members 3. Students choose specific subtopics of *pollution* randomly **Planning investigation:** 1. Students plan together, in concrete terms, what they want to investigate **Carrying out investigation:** 1. Each group dissuss the text of pollution based on the group worksheet. 2. Each group gathers information from the dictionary, review the subtopic, analyseit, and reach some conclusions. 3. Each of groups has to write a summary of their findings.		**Questioning** 1. Asking about the topic of the text. 2. Asking about thegeneric structures, and its language features,and also the important information in the text entitled pollution **Exploring** 1. Finding the generic structure and the language features from the text about "pollution" 2. Finding the main idea of the text. Finding the word, sentence, paragraph and text meaning through the multiple choices. **Associating** 1. Finding the general information, the unfamiliar words and look up the meaning by using dictionary. **Communicating** 1. Answering of the exercise given with the class 2. Discussing about the result of finding text.	60'
	Planning a presentation: 1. The groups plans to present their findings and investigation to the whole class	25'		

	Giving a presentation: 1. Each group givespresentation of the topics that they have discussed. **Evaluation** 1. Students and the teacher evaluateeach group's contribution to the work of the class as a whole. 2. Each student prepares for group quiz,the quiz is made up of the questions that are prepared by each group according to their subtopic investigated. 3. The students do the worksheet individually.	50		
Closure	1. Drawing conclusion about the material given. 2. Teacher close the activity by saying "salam"	10	1. Drawing conclusion about the material given. 2. Teacher close the activity by saying "salam"	10'

H. Instrument (Attached)

Researcher

Devi Syarifah Septiana

NIM. 14021040001

MATERIALS

(for experimental group and control group)

- **Leading Questions**

1. Please look at the picture!
2. Where do you usually find this situation in Jember?
3. What is all about?

- **Explanation Text**

a. Definition of Explanation

Explanation is a text which explains the processes related to the formation of natural, social, scientific, and cultural phenomena.

Examples of explanation texts: Reports on natural phenomena, articles on scientific inventions, documentary films

b. Generic Structure of Explanation

1. General Statement: This part presents the subject that is going to be explained.
2. Explanation: The supporting paragraphs are known as explanation. The explanation Statements are in chronological order to illustrate how the subject came into existence or how it works.

c. Language Feature of Explanation

- Simple present tense
- Passive voice
- Conjunction of time and cause effect
- Adverbial phrases

- **Simple Present Tense**

Simple present tense is a pattern used ina sentence to indicate that something happens all the time/repeatedly, or that something is true or general.

Formula:

(+) I/You/We/They + V1+object
He/She/It + V1+s/es + object
(-) I/You/We/They +do not V1+object
He/She/It + does not+ V1+ +object

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

Does + He/She/It + V1+s/es+object

- **The example of Explanation text**

Pollution

There are lots of environmental problems nowadays, mainly because of pollution. It is the contamination of air, water and soil by different materials that interfere with human health and quality of life. — General Statement

The emissions from industries and engines, including cars, are big causes of air pollution and simple things that we do at home, like using aerosols, have bad effects on the ozone layer, which protects life on Earth from ultraviolet radiation.Water is also suffering from pollution by domestic, municipal and also industrial waste. It is up to us to stop damaging the environment. We all should be environment friendly! — Explanation

(http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html

MATERIALS

(for experimental group and control group)

Text 1

Water Pollution

Water pollution is a large set of adverse effects upon water bodies (lakes, rivers, oceans, groundwater) caused by human activities. Although natural phenomena such as: volcano, storms, earthquakes, etc. Also causes major changes in water quality and the ecological status of water, these are not deemed to be pollution.

Water pollution has many causes and characteristics. Increases in nutrient loading may lead to eutrophication. Organic wastes such as sewage and farm waste impose high oxygen demands on the receiving water leading to oxygen depletion with potentially severe impacts on the whole eco-system. Industries discharge a variety of pollutants in their wastewater including heavy metals, organic toxins, oils, nutrients, and solids. Discharges can also have thermal effects, especially those from power stations, and these too reduce the available oxygen. Silt-bearing run off from many activities including construction sites, forestry and farms can inhibit the penetration of sunlight through the water column restricting photosynthesis and causing blanketing of the lake or river bed which in turns damage the ecology.

(https://www.sciencedaily.com/terms/water_pollution.htm)

Text 2

Air pollution

Air is the most polluted environmental resource. It is the introduction of harmful substances in the air that results in detrimental impacts to the environmental and humanity. Air pollution reduces air quality by making it unclean or contaminated. It occurs when harmful substances such as foreign gases, odors, dust, or fumes are released in the air at levels that can harm the comfort or health of animals and humans, or even destroy plant's life. Air pollution results from both human and natural activities.

It is caused by emissions from manufacturing industries and power plants, vehicular emissions, smoking, natural events such as volcanic eruptions and wildfire, and burning of waste materials such as wood, rubber and plastics. The common air pollutants include hydrocarbons, volatile organic compounds (VOCs), dust particles, carbon monoxide, sulfur oxides, particulate matter, chlorofluorocarbons (CFCs), and nitrogen oxides.

(https://www.eartheclipse.com/pollution/different-types-of-pollution.html)

Text 3

Noise Pollution

Noise pollution is any loud sounds that are either harmful or annoying to humans and animals. It is measured in decibels (dB) and sound levels beyond 100 dB can cause permanent hearing loss. The industrial sound limit according to the World Health Organization (WHO) is 75 dB. In the contemporary society, noise has become a permanent aspect owing to the daily activities such as transportation including airports, traffic and railroads, industrial manufacturing, construction works, and concerts.

In contrast to the other types of pollution, noise pollution lacks the element of accumulation in the environment. It merely occurs when sounds waves of intense pressure reach the human ears and may even affect the body muscles due to sound vibrations. Noise pollution similarly affects marine and wildlife animals in the same manner it affects humans, and can even cause their death.

(https://www.eartheclipse.com/pollution/different-types-of-pollution.html)

Text 4

Thermal Pollution

Thermal pollution is excess heat that creates undesirable effects over long periods of time. The earth has a natural thermal cycle, but excessive temperature increases can be considered a rare type of pollution with long term effects. Thermal pollution occurs when water bodies are degraded in terms of altering their temperatures. It commonly happens when people or industries undertake activities that suddenly decrease or increase the temperature of a natural water body which may include lakes, rivers, oceans or ponds.

Thermal pollution is currently a huge menace and is mainly influenced by power plants and industrial manufacturers that use water as a coolant. Urban storm water runoff from parking lots and roads also discharges water of elevated temperatures into adjacent water bodies. When water is either used as a coolant, discharged from storm water runoff at elevated temperatures, or released from reservoirs with unnaturally cold temperatures, it changes the natural temperature of water bodies. Therefore, thermal pollution is one aspect of the wider subject of water pollution. The alterations of natural water resource temperatures can have dire consequences on aquatic life and the local ecosystems.

(https://www.eartheclipse.com/pollution/different-types-of-pollution.html)

Text 5

Light Pollution

Light pollution occurs due to lengthened and excessive use of artificial lights, such that it results in the brightening of the skies. As a consequence, it upsets the activities and natural cycles of wildlife and also affects the welfare of humans. Whenever artificial lights are used where they are not intended, it causes a nuisance.

For instance, too much outdoor light intruding into neighbor's bedrooms can disrupt their sleep. Likewise, too much indoor light has implications on the health of the inhabitants of that room. Light pollution is also referred to as luminous pollution or photo pollution. The types of light pollution include glare, light trespass, and sky glow. City lighting, advertising and billboards, and nighttime entertainments are some of the main contributors of light pollution.

(https://www.eartheclipse.com/pollution/different-types-of-pollution.html)

Text 6

Land Pollution

Land pollution is the destruction or decline in quality of the earth's land surfacesin term of use, landscape and ability to support life forms. Many times, it is directly and indirectly caused by human activities and abuse of land resources. Land pollution takes place when waste and garbage are not disposed off in the right manner and as such, introduces toxins and chemicals on land.

It also occurs when people dump chemical products to soils in the form of herbicides, fertilizers, pesticides, or any other form of the consumer by-products. Mineral exploitation equally leads to the decline in quality of the earth's land surfaces. In this regard, it has grave consequences for human health, plant life, and soil quality. Acid rain, construction sites, solid waste, mineral exploitation, agricultural chemicals, and deforestations are the primary causes of land pollution.

(https://www.eartheclipse.com/pollution/different-types-of-pollution.html)

STUDENT WORKSHEET

(for experimental group)

A. Read the text carefully! Do investigate in group! Write your plan and answer in this worksheet! Every group should have different text!

Group Worksheet:

Group: Members:	
Title	
Gen. Statement	
Explanation	
Important information	- - - - -
Summary	
Please make some question based on you text!	1. 2. 3. 4. 5.

B. Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below!Do it individually!

Text 1 is for questions no. 1 — 8

Water pollution is a large set of adverse effects upon water bodies (lakes, rivers, oceans, groundwater) caused by human activities. Although natural phenomena such as: volcanoes, storms, earthquakes, etc. also causes major changes in water quality and the ecological status of water, these are not deemed to be pollution.

Water pollution has many causes and characteristics. Increases in nutrient loading may lead to eutrophication. Organic wastes such as sewage and farm waste impose high oxygen demands on the receiving water leading to oxygen depletion with potentially severe impacts on the whole eco-system. Industries discharge a variety of pollutants in their wastewater including heavy metals, organic toxins, oils, nutrients, and solids. Discharges can also have thermal effects, especially those from power stations, and these to reduce the available oxygen. Silt-bearing run off from many activities including construction sites, forestry and farms can inhibit the penetration of sunlight through the water column restricting photosynthesis and causing blanketing of the lake or river bed which in turns damage the ecology.

(https://www.sciencedaily.com/terms/water_pollution.htm)

1. What does the text tell us about?
   A. Ecology
   B. Organic Waste
   C. Water pollution
   D. Human activities
2. What pollutants are discharged by industry?
   A. Heavy metal, oils, nutrients
   B. Solids, farms wastes, oil
   C. Oil. Sewages wastes, solids
   D. Farms wastes, nutrients, solids
3. What is the main idea of the second paragraph?
   A. Industries discharge a variety of pollutant in waste water
   B. Water pollution has many causes and characteristics
   C. Organic waste impose high oxygen demands
   D. Discharge can also have thermal effects
4. “Increase” in nutrients….. (paragraph 2)
   What is the opposite of “increase” ?
   A. Develops
   B. Decreases
   C. Grows
   D. Greats

5. "These to reduce the *available* oxygen."
   What is the synonym of *available*?
   A. Impossible
   B. Limited
   C. Accessible
   D. Awkward
6. Industries discharge a variety of pollutants in their wastes water including heavy metals.... (paragraph 3)
   What does the word 'their' refer to?
   A. Water pollution
   B. Human activities
   C. Organic wastes
   D. Many activities
7. Which statement is not true according the text above?
   A. Earthquake is the main cause of pollutant
   B. Organic toxins can cause water pollution
   C. Sewage waste belongs to organic waste
   D. Thermal effects reduce the available oxygen
8. What is the goal of the text above?
   A. To describe the water pollution in general.
   B. To persuade the people about the water pollution
   C. To retell the people about the water pollution
   D. To classify the organic waste in general

Text 2 is for question 9 – 15

Pollution

There are lots of environmental problems nowadays, mainly because of pollution. It is the contamination of air, water and soil by different materials that interfere with human health and quality of life.

The emissions from industries and engines, including cars, are big causes of air pollution and simple things that we do at home, like using aerosols, have bad effects on the ozone layer, which protects life on Earth from ultraviolet radiation.

Water is also suffering from pollution by domestic, municipal and also industrial waste. It is up to us to stop damaging the environment. We all should be environment friendly!

(http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html)

9. What is the biggest enemy of the environment?
   A. Water
   B. Soil
   C. Pollution
   D. Industries
10. What does the third paragraph tell us about?
   A. The damaging of environment
   B. The use of water

C. The water is suffering from pollution by domestic, municipal, and industrial waste.
D. The emissions from industries and engines, including cars, are big causes of air pollution

11. Which statement is true as the cause of air pollution?
    A. It causes ozone layer
    B. The emissions form industries and engines, including cars, are big causes of air pollution.
    C. To protect human and earth.
    D. Industries discharge a variety of pollutants in their wastewater
12. "*It* is the contamination of air, water and soil by different materials" (in line 2)
    What does the word "it" refer to?
    A. Water
    B. Pollution
    C. Soil
    D. Industries
13. "*Bad* effects on the ozone layer…." (in paragraph 2)
    What is the opposite meaning of *bad*?
    A. Careless
    B. Sad
    C. Awful
    D. Great
14. What is the function of the ozone layer?
    A. To protect life on Earth from ultraviolet radiation.
    B. To damage the environment
    C. To make a pollution
    D. To cause the bad effect of environment
15. Water pollution is also *suffering* from pollution by domestic…
    What is the synoym of *suffering*?
    A. Hurt
    B. Happy
    C. Dissapointed
    D. Sick
    D. Processin

STUDENT WORKSHEET
(Control Class)

Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 45 minutes

A. Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below!

Text 1 is for questions no. 1 — 8

Water pollution is a large set of adverse effects upon water bodies (lakes, rivers, oceans, groundwater) caused by human activities. Although natural phenomena such as: volcanoes, storms, earthquakes, etc. Also causes major changes in water quality and the ecological status of water, these are not deemed to be pollution.

Water pollution has many causes and characteristics. Increases in nutrient loading may lead to eutrophication. Organic wastes such as sewage and farm waste impose high oxygen demands on the receiving water leading to oxygen depletion with potentially severe impacts on the whole eco-system. Industries discharge a variety of pollutants in their wastewater including heavy metals, organic toxins, oils, nutrients, and solids. Discharges can also have thermal effects, especially those from power stations, and these too reduce the available oxygen. Silt-bearing run off from many activities including construction sites, forestry and farms can inhibit the penetration of sunlight through the water column restricting photosynthesis and causing blanketing of the lake or river bed which in turns damage the ecology.

(https://www.sciencedaily.com/terms/water_pollution.htm)

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    b. Solids, farms wastes, oil
    c. Oil. Sewages wastes, solids
    d. Farms wastes, nutrients, solids
3. What is the main idea of the second paragraph?
    a. Industries discharge a variety of pollutant in waste water
    b. Water pollution has many causes and characteristics
    c. Organic waste impose high oxygen demands
    d. Discharge can also have thermal effects

4. "Increase" in nutrients….. (paragraph 2)
   What does the word "increase" have opposite meaning?
   a. Develops
   b. Decreases
   c. Grows
   d. Greats
5. "These too reduce the *available* oxygen."
   What is the synonym of *available*?
   a. Impossible
   b. Limited
   c. Accessible
   d. Awkward
6. Industries discharge a variety of pollutants in their wastes water including heavy metals.... (paragraph 3)
   What does the word 'their' refer to?
   a. Water pollution
   b. Human activities
   c. Organic wastes
   d. Many activities
7. Which statement is not true according the text above?
   a. Earthquake is the main cause of pollutant
   b. Organic toxins can cause water pollution
   c. Sewage waste belong to organic waste
   d. Thermal effects reduce the available oxygen
8. What is the goal of the text above?
   a. To describe the water pollution in general.
   b. To persuade the people about the water pollution
   c. To retell the people about the water pollution
   d. To classify the organic waste in general

Text 2 is for question 9 – 15

There are lots of environmental problems nowadays, mainly because of pollution. It is the contamination of air, water and soil by different materials that interfere with human health and quality of life.

The emissions form industries and engines, including cars, are big causes of air pollution and simple things that we do at home, like using aerosols, have bad effects on the ozone layer, which protects life on Earth from ultraviolet radiation.

Water is also suffering from pollution by domestic, municipal and also industrial waste. It is up to us to stop damaging the environment. We all should be environment friendly!

(http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html)

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   a. Water
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   c. Pollution
   d. Industries
10. What does the third paragraph tell us about?
   a. The damaging of environment
   b. The use of water
   c. The water is suffering from pollution by domestic, municipal, and industrial waste.
   d. The emissions from industries
11. Which statement is true as the cause of air pollution?
   a. It causes ozone layer
   b. The emissions form industries and engines, including cars, are big causes of air pollution.
   c. To protect human and earth.
   d. Industries discharge a variety of pollutants in their wastewater
12. "*It* is the contamination of air, water and soil by different materials" (in line 2)
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   a. Water
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   d. Industries
13. "*Bad* effects on the ozone layer…." (in paragraph 2)
   What is the opposite meaning of *bad*?
   a. Careless
   b. Sad
   c. Awful
   d. Great
14. What is the function of the ozone layer?
   a. To protect life on Earth from ultraviolet radiation.
   b. To damage the environment
   c. To make a pollution
   d. To cause the bad effect of environment
15. Water pollution is also *suffering* from pollution by domestic…
   What is the synoym of *suffering*?
   a. Hurt
   b. Happy
   c. Dissapointed
   d. Sick

Teacher's Note

1. C
2. A
3. B
4. C
5. C
6. C
7. A
8. A
9. C
10. C
11. B
12. B
13. C
14. A
15. A

The distribution of exercise items

The Aspect of Reading Comprehension	Items	Number
Word Comprehension	5	4, 5, 10, 12, 15
Sentence Comprehension	4	2, 8. 11, 13
Paragraph Comprehension	2	3, 9
Text Comprehension	4	1, 6, 7, 14

Appendix D. Lesson Plan 2

Lesson Plan
(The 2nd Meeting)

School : SMK N 1 Jember
Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 1 meeting (3 x 45 minutes)

A. Core Competence

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.
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 Indicator

Basic Competence	Indicator
3.8 Membedakan fungsi sosial, struktur teks, dan unsur kebahasaan beberapa teks explanation lisan dan tulis dengan memberi dan meminta informasi terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI, sesuai dengan konteks penggunaannya.	3.8.1 Finding similarities between the social function, generic structure, and language features of (oral and written) explanation text 3.8.2 Finding differences between the social function, generic structure, and language features of (oral and written) explanation text
4.8 Menangkap makna secara kontekstual terkait fungsisosial, struktur teks, dan unsur kebahasaan teks explanation lisan dan tulis, terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas XI, sesuai dengan konteks penggunaannya.	4.8.1 Answering comprehension questions at word level 4.8.2 Answering comprehension questions at sentence level 4.8.3 Answering comprehension questions at paragraph level 4.8.4 Answering comprehension questions at text comprehension

C. Learning Objectives

Students will be able to

1. Find similarities between the social function, generic structure, and language features of (oral and written) explanation text
2. Find differences between the social function, generic structure, and language features of (oral and written) explanation text
3. Answer comprehension questions at the word level
4. Answer comprehension questions at the sentence level
5. Answer comprehension questions at the paragraph level
6. Answer comprehension questions at the text level

D. Learning Material

- Definition of Explanation

  Explanation is a text which explains the processes related to the formation of natural, social, scientific, and cultural phenomena.

  Examples of explanation texts: Reports on natural phenomena, articles on scientific inventions, documentary film

- Generic Structure of Explanation
  1. General Statement: This part presents the subject that is going to be explained
  2. Explanation: The supporting paragraphs are known as explanation. The explanation Statements are in chronological order to illustrate how the subject came into existence or how it works.
- Language Features of Explanation
  - Simple present tense
  - Passive voice
  - Conjunction of time and cause effect
  - Adverbial phrases
  - Noun phrases

E. Learning Method

Experimental Group

- Method : Group Investigation
- Steps : Topic Selection, Cooperative Planning, Implementation, Analysis and Synthesis, Presentation of Final Project, Evaluation.

Control Group

- Method : Scientific Approach
- Steps : Observing, questioning, exploring, associating, communicating

F. Media and Resources

- **Media** :
  - Explanation text
  - Worksheet
  - Ruler, spidol, board
  - Laptop & LCD
  - Power Point Presentation
- **Resources**
  - Kementerian Pendidikan dan Kebudayaan. 2014. Buku siswa Mata Pelajaran bahasa inggris. Jakarta: Kementerian Pendidikan dan Kebudayaan.
  - *http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html*

G. Teaching Learning Activity

Sequences	Experimental Group	Time	Control Group	Time
Set Induction	1. Responding the greeting and questions from teacher related to the previous materials. 2. Giving attention while the teacher checks students' attendance list. 3. Answering 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	10'	1. Responding the greeting and questions from teacher related to the previous materials. 2. Giving attention while the teacher checks students' attendance list. 3. Answering 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	10'
Main Activity	**Determining subtopics and organizing into groups:** 1. The teacher reviews students' understanding dealing with the previous lesson. 2. Teacher asks students to make a group. One group consist of 4-6 members 3. Students choose specific subtopics	40'	**Observing** 1. Observing the text about *natural disaster* concerning of picture, the tittle and the number of paragraph in the text 2. Explaining about the topic of *natural disaster* **Questioning** *1.* Asking about the topic of the text about *natural disaster* 2. Asking about the generic structures,	55'

	of *natural disaster* from the flashcard randomly **Planning investigation:** 1. Students plan together, in concrete terms, what they want to investigate **Carrying out investigation:** 1. Each group dissuss the text of natural disaster based on the group worksheet. 2. Each group gathers information from the dictionary, review the subtopic, analyseit, and reach some conclusions. 3. Each of groups has to write a summary of their findings.		and its language features,and also the important information in the text. **Exploring** 1. Finding the generic structure and the language features from the text about *natural disaster*. 2. Finding the main idea of the text. Finding the word, sentence, paragraph and text meaning through the multiple choices. **Associating** 1. Finding the general information, the unfamiliar words and look up the meaning by using dictionary. **Communicating** 1. Answering of the exercise given with the class. 2. Discussing about the result of finding text.	60’
	Planning a presentation: 1. The groups plans to present their findings and investigation to the whole class	25’		
	Giving a presentation: 1. Each group gives presentation of the topics that they have discussed. **Evaluation** 1. Students and the teacher evaluateeach group’s contribution to the work of the class as a whole.	50		

	2. Each student prepares for group quiz,the quiz is made up of the questions that are prepared by each group according to their subtopic investigated. 3. The students do the worksheet individually.			
Closure	1. Drawing conclusion about the material given. 2. Teacher close the activity by saying "salam"	10	1. Drawing conclusion about the material given. 2. Teacher close the activity by saying "salam"	10'

H. Instrument (Attached)

Researcher

Devi Syarifah Septiana

NIM. 14021040001

INSTRUCTIONAL MATERIALS
(for experimental group and control group)

- **Leading Questions**

1. Please look at the picture!
2. Are you familiar with this situation?
3. Have you ever experienced that incident?
4. What is all about?

- **Explanation Text**

a. Definition of Explanation

Explanation is a text which explains the processes related to the formation of natural, social, scientific, and cultural phenomena.

Examples of explanation texts: Reports on natural phenomena, articles on scientific inventions, documentary films

b. Generic Structure of Explanation

1. General Statement: This part presents the subject that is going to be explained.
2. Explanation: The supporting paragraphs are known as explanation. The explanation Statements are in chronological order to illustrate how the subject came into existence or how it works.
3. Language Feature of Explanation
   - Simple present tense
   - Passive voice
   - Conjunction of time and cause effect
   - Adverbial phrases
   - Noun phrases

- **Simple Present Tense**

  Simple present tense is a pattern used ina sentence to indicate that something happens all the time/repeatedly, or that something is true or general.

  Formula:

  (+) I/You/We/They + V1+object
  He/She/It + V1+s/es+object
  (-) I/You/We/They +do not V1+object
  He/She/It + does not+ V1+ +object

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

  Does + He/She/It + V1+s/es+object

- **The example of Explanation text**

Earthquake

Earthquake is one of the most dangerous disasters for human being. Powerful earthquake could destroy the entire thing on the surface only in one time quickly. Earthquake is the after effect of sudden arrival of vitality in the earth's hull that makes seismic waves. The seismic movement of a region mention to the regularity, category and range of earthquake noticed over a period of time.

General Statement

Earthquake usually happens when rock underground suddenly breaks along fault. This sudden release energy causes the ground to shake. When the two plates of rock are rubbing againts each other, they don't just slide smoothly. The rocks are pushing againts each other, but not moving. After a while, the rock plates break because of all the pressures that's built up. When the rocks break, it caused earthquake.

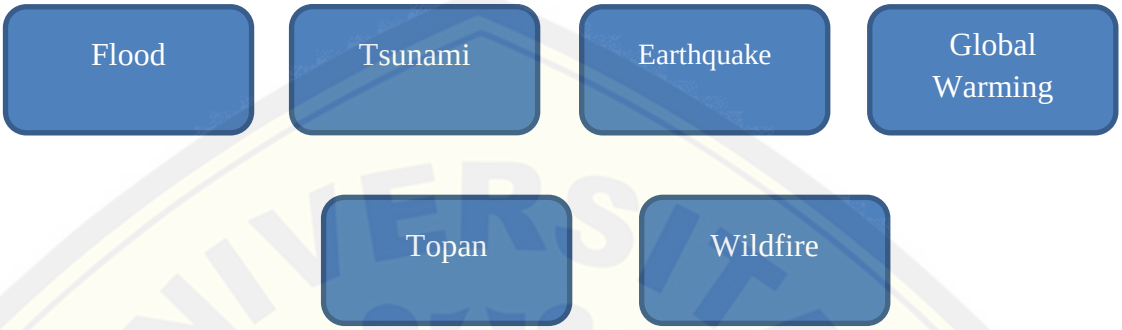
Explanation

(https://www.factmonster.com/world/natural-disasters)

STUDENT WORKSHEET
(for experimental group)

Flashcard:

Natural Disaster



Group Worksheet:

A. ***Make an explanation text based on your flashcard! Find out data in the internet. Do investigate in group! Write your plan and answer in this worksheet! Then, Read aloud in front of class!***

Group: Members:	
Title	
Gen. Statement	
Explanation	
Important information	- - - - -
Summary	

B. Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below! Do it Individually!

The following text is for questions 1 to 5.

Tsunami occurs when major fault under the ocean floor suddenly slips. The displaced rock pushes water above it like a giant paddle, producing powerful water waves at the ocean surface. The ocean waves spread out from the vicinity of the earthquake source and move across the ocean until they reach the coastline, where their height increases as they reach the continental shelf, the part of the earth crust that slopes, or rises, from the ocean floor up to the land. A tsunami washes ashore with often disastrous effects such as severe flooding, loss of lives due to drowning and damage to property.

A tsunami is a very large sea wave that is generated by a disturbance along the ocean floor. This disturbance can be an earthquake, a landslide, or a volcanic eruption. A tsunami is undetectable far out in the ocean, but once it reaches shallow water, this fast traveling wave grows very large.

(http://www.belajarbahasainggris.us/2012/01/contoh-teks-explanation-tsunami.html)

1. What is the main idea of paragraph 1?
   A. Tsunami occurs when major fault under the ocean floor suddenly slips.
   B. A tsunami is a very large sea wave.
   C. A tsunami is undetectable far out in the ocean.
   D. The waves moves across the ocean until they reach the beach
2. What causes tsunami?
   A. The displaced rock pushes water above it
   B. A major fault under the ocean floor slips suddenly
   C. The ocean waves spread out from the vicinity of the source
   D. The waves moves across the ocean until they reach the beach
3. What is the impact of tsunami?
   A. The part of the Earth's crust that slopes, or rises, from the ocean floor down to the land
   B. A tsunami washes ashore with often disastrous effects such as flooding and loss of lives
   C. A tsunami is a very large sea wave which is not generated by a disturbance along the ocean floor
   D. A tsunami is detectable far out in the ocean
4. "... producing <u>powerful</u> water waves at the ocean surface."
   What is the synonym of the underlined word above?
   A. Fast
   B. Deep
   C. Quick
   D. Strong

5. "A tsunami is a very *large* sea wave…"
   What is the opposite meaning of *large*?
   A. Great
   B. Full
   C. Giant
   D. Small

The following text is for question 6-10

Flood

A flood is an overflow of an expanse of water that submerges land. In the sense of "flowing water", the world may also be applied to inflow of the tide. Flooding may result from the volume of water within a body of water, such as a river or lake, which overflows or break levees, with the result that some of the water escapes its unusual boundaries.

While the size of a lake or other body of water will vary with seasonal changes in precipitation and show melt, it is not a significant flood unless such escapes of water endanger land areas used by man like a village, city or other inhabited area.

Floods can also occur in rivers, when flow exceeds the capacity of the river channel, particularly at bends or meanders. Flood often cause damage to homes and businesses if they are placed in natural flood plains of rivers. While flood damage van be virtually eliminated by moving away from and other bodies of water, since time out of mind, people have lived and worked by the water to seek the sustenance and capitalize on the gains of cheap and easy travel and commerce by being near water. That humans continue to inhabit areas threatened by flood damage is evidence that the perceived value of living near the water exceeds the cost of repeated periodic flooding.

(https://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html)

6. What should people do to avoid the loss of their business caused by the flood?
   A. Live and work by the body of water
   B. Place in natural flood plains of rivers
   C. Inhabit the areas threatened by flood damage
   D. Move away from rivers and other bodies of water
7. What is the main idea of the third paragraph?
   A. People do not live by the river for some reasons
   B. Floods can be found at every bend and meander of a river
   C. It is wise for people to leave the flood areas for the safety reason
   D. Floods happen when rivers flow over their capacity of waterway
8. "… it is not <u>significant</u> flood unless such escapes of water…." (paragraph 2)
   The underlined word is closest in meaning to….
   A. Ordinary
   B. Intensive
   C. Important
   D. Sufficient

9. "Precipitation and show *melt*…." (paragraph 2)
   What is the opposite meaning of *melt*?
   A. Soft
   B. Freeze
   C. Warm
   D. Heat
10. Where does the watercome from?
   A. From the volume of water within a body of water, such as a river or lake
   B. Village, city or other inhabited area
   C. Inhabit the areas threatened by flood damage
   D. Place in natural flood plains of rivers

Text 3 is for question 11-15

Natural Disaster

A natural disaster is a terrible accident, e.g. a great flood, a big fire or an earthquake. It usually causes great suffering and loss of a large sum of money. The casualties are injured or died. Some people are homeless and need medical care. Floods occur when the water of rivers, lakes, or streams overflow their banks and pour onto the surrounding land. Floods are caused by many different things. Often heavy rainstorms that last for a brief can cause a flood. Yet not all heavy storms are followed by flooding. If the surrounding land is flat and can absorb the water, no flooding will occur. If, however, the land is hard and rocky, heavy rain cannot be absorbed. Where the banks are low, a river may overflow and flood adjacent lowland.

In many part of the world flood is caused by tropical storms called hurricanes or typhoons. They bring destructive winds of high speed, torrents of rain, and flooding. When a flood occurs, the destruction to surrounding land can be severe. Whole the villages and towns are sometimes swept away by water pouring swiftly over the land. Railroad track are blocked and uprooted from their beds. Highways are washed away. When a building caught fire, the firemen pitched in to help battle the blaze. Before the pumps were invented, people formed bucket brigades to fight fires. Standing side by side, they formed a human chain from the fire to nearby well or river. They passed buckets of water from hand to hand to be poured on the flames. The damage of the fire did depend a great deal on where it happened. In the country or a small village, only a single house might burn down. But in crowded cities, fire often destroyed the whole blocks and neighborhoods before being controlled.

(https://englishahkam.blogspot.com/2012/12/explanation-text)

11. What can possibly prevent rivers and lakes from overflowing?
   a. An absorbent bed.
   b. A rocky surrounding.
   c. A low land.
   d. A high bank.

12. “Often *heavy* rainstorms that last…”
    What is the similar meaning of *heavy*?
    a. Easy
    b. Little
    c. Thin
    d. Big
13. We know from the text that . . . .
    a. River can sweep heavy flood
    b. People can make money from flood
    c. The destruction by flood is always less severe
    d. Water flood is absorbed by land
14. We know from the text that . . . .
    a. The pump is the only tool used by fire fighters now
    b. The pump helps people to fight fires more efficiently
    c. Fires in big cities are always very big
    d. People no longer use buckets to control fire
15. What is the main idea of paragraph 2?
    a. Flood are caused by tropical storms called hurricanes or typhoons.
    b. They bring destructive winds of high speed, torrents of rain.
    c. Railroad track blocked and uprooted from their beds
    d. The damage of the fire did depend a great deal on where it happened

STUDENT WORKSHEET
(Control Class)

Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 45 minutes

Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below!

The following text is for questions 1 to 5.

Tsunami occurs when major fault under the ocean floor suddenly slips. The displaced rock pushes water above it like a giant paddle, producing powerful water waves at the ocean surface. The ocean waves spread out from the vicinity of the earthquake source and move across the ocean until they reach the coastline, where their height increases as they reach the continental shelf, the part of the earth crust that slopes, or rises, from the ocean floor up to the land. A tsunami washes ashore with often disastrous effects such as severe flooding, loss of lives due to drowning and damage to property.
Tsunami is a very large sea wave that is generated by a disturbance along the ocean floor. This disturbance can be an earthquake, a landslide, or a volcanic eruption. A tsunami is undetectable far out in the ocean, but once it reaches shallow water, this fast traveling wave grows very large.

(http://www.belajarbahasainggris.us/2012/01/contoh-teks-explanation-tsunami.html)

1. What is the main idea of the text above?
   a. Tsunami occurs when major fault under the ocean floor suddenly slips.
   b. A tsunami is a very large sea wave.
   c. A tsunami is undetectable far out in the ocean.
   d. The waves moves across the ocean until they reach the beach
2. What causes tsunami?
   a. The displaced rock pushes water above it
   b. A major fault under the ocean floor slips suddenly
   c. The ocean waves spread out from the vicinity of the source
   d. The waves moves across the ocean until they reach the beach
3. What is the impact of tsunami?
   a. The part of the Earth's crust that slopes, or rises, from the ocean floor down to the land
   b. A tsunami washes ashore with often disastrous effects such as flooding and loss of lives
   c. A tsunami is a very large sea wave which is not generated by a disturbance along the ocean floor
   d. A tsunami is detectable far out in the ocean

4. "... producing powerful water waves at the ocean surface."
   What is the synonym of the underlined word above?
   a. Fast
   b. Deep
   c. Quick
   d. Strong
5. "A tsunami is a very *large* sea wave…"
   What is the opposite meaning of *large*?
   a. Great
   b. Full
   c. Giant
   d. Small

The following text is for question 6-10

Flood

Flood is an overflow of an expanse of water that submerges land. In the sense of "flowing water", the world may also be applied to inflow of the tide. Flooding may result from the volume of water within a body of water, such as a river or lake, which overflows or break levees, with the result that some of the water escapes its unusual boundaries.While the size of a lake or other body of water will vary with seasonal changes in precipitation and show melt, it is not a significant flood unless such escapes of water endanger land areas used by man like a village, city or other inhabited area.

Floods can also occur in rivers, when flow exceeds the capacity of the river channel, particularly at bends or meanders. Flood often cause damage to homes and businesses if they are placed in natural flood plains of rivers. While flood damage van be virtually eliminated by moving away from and other bodies of water, since time out of mind, people have lived and worked by the water to seek the sustenance and capitalize on the gains of cheap and easy travel and commerce by being near water. That humans continue to inhabit areas threatened by flood damage is evidence that the perceived value of living near the water exceeds the cost of repeated periodic flooding.

(https://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html)

6. What should people do to avoid the loss of their business caused by the flood?
   a. Live and work by the body of water
   b. Place in natural flood plains of rivers
   c. Inhabit the areas threatened by flood damage
   d. Move away from rivers and other bodies of water
7. What is the main idea of the second paragraph?
   a. People do not live by the river for some reasons
   b. Floods can be found at every bend and meander of a river
   c. It is wise for people to leave the flood areas for the safety reason
   d. Floods happen when rivers flow over their capacity of waterway

8. "… it is not significant flood unless such escapes of water…."(paragraph 1)
The underlined word is closest in meaning to….
   a. Ordinary
   b. Intensive
   c. Important
   d. Sufficient

9. Precipitation and show *melt*…." (paragraph 1)
   What is the opposite meaning of *melt*?
   a. Soft
   b. Freeze
   c. Warm
   d. Heat
10. Where does the water come from?
   a. From the volume of water within a body of water, such as a river or lake
   b. Village, city or other inhabited area
   c. Inhabit the areas threatened by flood damage
   d. Place in natural flood plains of rivers

Text 3 is for question 11-15

Natural Disaster

Natural disaster is a terrible accident, e.g. a great flood, a big fire or an earthquake. It usually causes great suffering and loss of a large sum of money. The casualties are injured or died. Some people are homeless and need medical care. Floods occur when the water of rivers, lakes, or streams overflow their banks and pour onto the surrounding land. Floods are caused by many different things. Often heavy rainstorms that last for a brief can cause a flood. Yet not all heavy storms are followed by flooding. If the surrounding land is flat and can absorb the water, no flooding will occur. If, however, the land is hard and rocky, heavy rain cannot be absorbed. Where the banks are low, a river may overflow and flood adjacent lowland.

In many parts of the world flood is caused by tropical storms called hurricanes or typhoons. They bring destructive winds of high speed, torrents of rain, and flooding. When a flood occurs, the destruction to surrounding land can be severe. Whole villages and towns are sometimes swept away by water pouring swiftly over the land. Railroad track blocked and uprooted from their beds. Highways are washed away. When a building caught fire, the firemen pitched in to help battle the blaze. Before the pumps were invented, people formed bucket brigades to fight fires. Standing side by side, they formed a human chain from the fire to nearby well or river. They passed buckets of water from hand to hand to be poured on the flames. The damage of the fire did depend a great deal on where it happened. In the country or a small village, only a single house might burn down. Yet in crowded cities, fire often destroyed the whole blocks and neighborhoods before being controlled.

(www.englishankam.blogspot.com)

11. What can possibly prevent rivers and lakes from overflowing?
    a. An absorbent bed.
    b. A rocky surrounding.
    c. A low land.
    d. A high bank.
12. "Often *heavy* rainstorms that last…"
    What is the similar meaning of *heavy*?
    a. Easy
    b. Little
    c. Thin
    d. Big
13. We know from the text that . . . .
    a. River can sweep heavy flood
    b. People can make money from flood
    c. The destruction by flood is always less severe
    d. Water flood is absorbed by land
14. We know from the text that . . . .
    a. The pump is the only tool used by fire fighters now
    b. The pump helps people to fight fires more efficiently
    c. Fires in big cities are always very big
    d. People no longer use buckets to control fire
15. What is the main idea of paragraph 2?
    a. Flood are caused by tropical storms called hurricanes or typhoons.
    b. They bring destructive winds of high speed, torrents of rain.
    c. Railroad track blocked and uprooted from their beds
    d. The damage of the fire did depend a great deal on where it happened

Teacher's Note

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

The distribution of exercise items

The Aspect of Reading Comprehension	Items	Number
Word Comprehension	2	4, 7, 15
Sentence Comprehension	6	2, 3, 5, 8, 9, 14
Paragraph Comprehension	3	1, 6, 12, 13
Text Comprehension	4	10, 11

Appendix E. The Tabulation of Students' English Midterm Score

Students Number	XI PM 1	XI PM 2	XI PM 3
1	80	75	72
2	80	80	78
3	75	70	72
4	75	75	70
5	75	80	72
6	75	70	70
7	70	80	76
8	75	70	70
9	80	70	82
10	80	70	70
11	80	70	70
12	70	70	76
13	80	80	80
14	80	70	70
15	70	75	76
16	70	70	76
17	70	70	70
18	80	75	72
19	70	75	76
20	70	80	80
21	75	80	72
22	75	75	70
23	70	80	76
24	80	75	75
25	80	75	78
26	80	80	70
27	70	70	70
28	75	80	75
29	80	80	72
30	70	70	70
31	80	70	70
32	80	75	72
33	70	70	70
34	80		
35	80		

Appendix F. Try Out Test

Reading Comprehension Test
Try Out-Test

Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 45 minutes

Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below!

Text 1 is for questions 1-6

There are lots of environmental problems nowadays, mainly because of pollution. It is the contamination of air, water and soil by different materials that interfere with human health and quality of life.

The emissions from industries and engines, including cars, are big causes of air pollution and simple things that we do at home, like using aerosols, have bad effects on the ozone layer, which protects life on Earth from ultraviolet radiation.

Water is also suffering from pollution by domestic, municipal and also industrial waste. It is up to us to stop damaging the environment. We all should be environment friendly!

(*http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html*)

1. What is the appropriate title from the text above?
   a. Water
   b. Environment
   c. Emissions
   d. Pollution
2. What is the biggest enemy of the environment?
   a. Water
   b. Soil
   c. Pollution
   d. Industries of engine
3. Which statement is true as the cause of air pollution?
   a. It causes ozone layer
   b. The emissions form industries and engines, including cars, are big causes of air pollution.
   c. To save human and earth.
   d. Industries discharge a variety of pollutants in their wastewater

4. "*It* is the contamination of air, water and soil by different materials" (in line 2)
   What does the word "It" refer to?
   a. Water
   b. Pollution
   c. Soil
   d. Industries
5. What is the function of the ozone layer?
   a. To protect life on Earth from ultraviolet radiation.
   b. To damage the environment
   c. To make a pollution
   d. To cause the bad effect of environment
6. Water pollution is also *suffering* from pollution by domestic…
   What is the synoym of *suffering*?
   a. Hurt
   b. Happy
   c. Dissapointed
   d. Sick

Text 2 is for questions 7-10

Tornado

Tornados occur when the conditions that cause thunderstorms are unusually violent. Winds blowing in opposite directions around a strong updraft start a narrow, violent whirl. Centrifugal force effectively throws the air away from the centre, leaving a core of very low pressure. This is much like stirring water in a cup, thus forming a vortex-like dip in the surface.

This low-pressure core acts as a partial vacuum, sometimes helping to lift the roofs off houses. Most of the damage, though, results from the force of the wind itself. Around the edges of the whirl, wide speeds may reach 300 miles (480 kilometers) per hour. At first, the tornado's funnel is whitish-grey because it is composed of minute's water droplets formed as the air in the funnel expands and cools. After touching down, the funnel becomes dark because of all of the debris it has picked up. This debris can include soil, tree limbs, and parts of buildings; tornados have been known to pick up automobiles, horses and whole trees.

A tornado usually moves toward the east (or often northeast in the northern Hemisphere and southeast hemisphere) at 25 to 40 miles (40 to 65 kilometers) per hour. Fortunately, most tornados are less than half a mile (800 meters) wide; the edge of one may destroy all of the houses on one side of a street while leaving those on the other side completely undamaged. Death from tornados in the United States averaged roughly 100 per year over the last century. However, they have dropped somewhat in recent decades as better forecasting and warning systems have been implemented.

(www.pustakabahasainggris.com)

7. Why have deaths from tornados in the United States decreased in the recentdecades?
   a. Most tornados are less than half a mile wide
   b. There are no more tornados in the united states
   c. There are better forecasting and warning systems
   d. The tornado has left the united states completely undamaged
8. Why is the tornado's funnel dark as soon as it touches the ground?
   a. It contains water droplets
   b. The temperature is changed
   c. Whirl of winds
   d. It has picked up debris
9. What are the impacts of tornados?
   a. Water dropping
   b. Heavy disasters
   c. Whirl of winds
   d. Grey and dark sky
10. "... While leaving those on the other side completely undamaged" (par 3)

    The underlined word has similar meaning to...

    a. Ruined
    b. Vanished
    c. Wounded
    d. Safe

Text 3 is for questions 11-15

Acid rain can severely damage both plant and animal life. Certain lakes, for example, have lost all fish and plant life because of acid rain. Acid rain comes from sulfur in coal and oil. When they burn, they make sulfur dioxide (SO2). Most sulfur leaves factory chimneys as the gaseous sulfur dioxide (SO2) and most nitrogen are also emitted as one of the nitrogen oxides (NO or NO2), both of which are gasses. The gasses may be dry deposited–absorbed directly by the land, by lakes or by the surface vegetation. If they are in the atmosphere at any time, the gasses will oxidize (gain an oxygen atom) and go into solution as acids.

Sulphuric acid (H2 SO4) and the nitrogen oxides will become nitric acid (HNO3). The acids usually dissolve in cloud droplets and may travel great distances before being precipitated as acid rain. Catalysts such as hydrogen peroxide, ozone, and ammonium help promote the formation of acids in clouds. More ammonium (NH4) can be formed when some of the acids are partially neutralized by airborne ammonia (NH3). Acidification increases with the number of active hydrogen (H+) ions dissolved in acid. Hydrocarbons emitted by, for example, car exhausts will react in sunlight with nitrogen oxides to produce ozone. Although it is invaluable in the atmosphere, low-level ozone causes respiratory problems and also hastens the formation of acid rain.

When acid rain falls on the ground it dissolves and liberates heavy metals and aluminum (Al). When it is washed into lakes, aluminum irritates the outer surfaces of many fish. As acid rain falls or drains into the lake the pH of the lake falls. Forests suffer the effect of acid rain through damage to leaves, through the loss of vital nutrients, and through the increased amounts of toxic metals liberated by acid, which damage roots and soil microorganisms.

(https://www.pustakabahasainggris.com/contoh-soal-ujian-dan-jawaban-bahasa-inggris)

11. What is the text mainly about?
    a. The definition of acid rain.
    b. The process of acid rain.
    c. The effect of acid rain
    d. Acid rain.
12. What is the result of the burning of the coal and oil?
    a. Ammonium
    b. nitric acid
    c. sulphuric acid
    d. sulfur dioxide
13. Which of the following is not true about acid rain?
    a. It contains lower pH than the normal rain.
    b. It has a higher pH than the normal rain
    c. It can damage animal and plant life.
    d. It contains dangerous gasses.
14. ….. is dangerous for the scale of fish in the lake.
    a. Acid rain
    b. Heavy metal
    c. Aluminum
    d. Vital Nutrient
15. Acid rain can severely **damage** both plant and animal life. The bold word has the closest meaning to ….
    a. Harm
    b. Hang
    c. Endow
    d. produce

Teacher's Note

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

The distribution of exercise items

The Aspect of Reading Comprehension	Items	Number
Word Comprehension	3	4, 6, 12
Sentence Comprehension	5	2, 5, 7, 8, 9
Paragraph Comprehension	4	1, 3, 11, 13
Text Comprehension	3	10, 14, 15

Appendix G. Difficulty Index of Try Out Test

Item Numbers	JPT	JJB	P	Criteria
1	33	26	0.78	Fair
2	33	25	0.75	Fair
3	33	25	0.75	Fair
4	33	24	0.72	Fair
5	33	26	0.78	Fair
6	33	23	0.69	Fair
7	33	25	0.75	Fair
8	33	26	0.78	Fair
9	33	25	0.75	Fair
10	33	22	0.66	Fair
11	33	24	0.72	Fair
12	33	26	0.78	Fair
13	33	25	0.75	Fair
14	33	24	0.72	Fair
15	33	23	0.69	Fair

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 H. The Result of Try Out Test of the Odd Numbers (X)

No	Multiple Choice								Total
	1	3	5	7	9	11	13	15	
1	1	0	1	1	0	1	1	1	6
2	1	1	1	1	1	0	1	0	6
3	1	0	1	1	1	1	1	0	6
4	0	1	1	1	0	1	1	1	6
5	1	1	0	1	1	0	1	0	5
6	1	1	1	0	0	1	1	1	6
7	1	0	1	1	1	1	0	1	6
8	0	1	1	1	1	0	1	1	6
9	1	1	1	0	1	0	1	0	5
10	1	1	1	1	0	1	0	1	6
11	1	0	1	1	1	1	0	1	6
12	0	1	1	1	1	0	1	1	6
13	1	1	0	1	1	0	1	1	6
14	1	1	1	0	1	1	0	1	6
15	0	1	0	1	1	0	1	1	5
16	1	0	1	1	0	1	1	1	6
17	1	1	1	1	0	1	1	1	7
18	0	1	1	1	1	1	0	1	6
19	1	1	1	1	1	1	0	0	6
20	1	1	1	0	0	0	1	1	5
21	1	1	1	1	0	1	0	1	6
22	1	1	0	1	1	0	1	1	6
23	1	0	1	1	1	1	0	1	6
24	1	1	0	1	1	1	1	0	6
25	1	0	1	1	1	1	1	0	6
26	1	1	1	0	1	1	1	0	6
27	1	1	1	0	1	1	1	0	6
28	1	0	1	1	1	1	1	1	7
29	1	1	1	0	1	1	1	1	7
30	0	1	1	0	1	1	1	1	6
31	1	1	0	1	1	1	1	0	6
32	1	1	0	1	1	1	1	1	7
33	0	1	1	1	1	1	1	1	7
Total	**26**	**25**	**26**	**25**	**25**	**24**	**25**	**23**	**199**

Appendix I. The Result of Try Out Test of the Even Numbers (Y)

No	Multiple Choice							Total
	2	4	6	8	10	12	14	
1	1	1	0	0	1	1	1	6
2	1	1	0	0	1	1	1	6
3	1	0	1	0	1	1	0	5
4	1	0	1	1	0	1	1	6
5	0	1	1	0	1	1	1	6
6	0	1	1	0	1	1	1	6
7	0	1	0	1	1	1	0	5
8	1	0	1	1	0	1	1	6
9	1	0	1	1	0	1	1	6
10	0	1	1	1	1	0	0	5
11	0	1	0	1	1	1	1	6
12	1	1	0	1	1	0	1	6
13	1	0	1	1	1	1	1	7
14	1	0	0	1	1	1	1	6
15	0	1	0	1	1	1	1	6
16	0	1	0	1	1	1	1	6
17	0	1	1	0	1	1	1	6
18	1	0	1	0	1	1	0	5
19	1	1	0	1	0	1	1	6
20	1	1	0	1	1	1	1	7
21	1	1	1	1	0	0	1	6
22	1	0	1	1	0	1	1	6
23	1	0	1	1	1	0	0	5
24	1	1	1	1	0	0	1	6
25	1	1	1	1	0	1	1	7
26	1	1	1	1	1	1	0	7
27	1	1	1	1	1	1	0	7
28	1	1	1	1	1	0	1	7
29	1	1	1	1	1	0	0	6
30	1	1	1	1	1	1	1	6
31	1	1	1	1	0	1	1	7
32	1	1	1	1	0	1	1	7
33	1	1	1	1	1	1	0	7
Total	**25**	**24**	**23**	**26**	**22**	**26**	**24**	**202**

Appendix J. The Division of Odd (X) And Even (Y) Numbers of Try Out Test

No.	X	Y	X^2	Y^2	XY	X+Y
1	6	6	36	36	36	12
2	6	6	36	36	36	12
3	6	5	36	25	30	11
4	6	6	36	36	36	12
5	5	6	25	36	30	11
6	6	6	36	36	36	12
7	6	5	36	25	30	11
8	6	6	36	36	36	12
9	5	6	25	36	30	11
10	6	5	36	25	30	11
11	6	6	36	36	36	12
12	6	6	36	36	36	12
13	6	7	36	49	42	13
14	6	6	36	36	36	12
15	5	6	25	36	30	11
16	6	6	36	36	36	12
17	7	6	49	36	42	13
18	6	5	36	25	30	11
19	6	6	36	36	36	12
20	5	7	25	49	35	12
21	6	6	36	36	36	12
22	6	6	36	36	36	12
23	6	5	36	25	30	11
24	6	6	36	36	36	12
25	6	7	36	49	42	13
26	6	7	36	49	42	13
27	6	7	36	49	42	13
28	7	7	49	49	49	14
29	7	6	49	36	42	13
30	6	6	36	36	36	12
31	6	7	36	49	42	13
32	7	7	49	49	49	14
33	7	7	49	49	49	14
Total	**199**	**202**	**1209**	**1250**	**1220**	**401**

Appendix K. Post-Test

Reading Comprehension Test
Post-Test

Subject : English
Grade/ Semester : XI / I
Language Skill : Reading
Text Type : Explanation Text
Time Allocation : 45 minutes

Answer the text by crossing (x) the letter a, b, c, or d for the correct answer based on the text below!

Text 1 is for questions 1-6

There are lots of environmental problems nowadays, mainly because of pollution. It is the contamination of air, water and soil by different materials that interfere with human health and quality of life.

The emissions from industries and engines, including cars, are big causes of air pollution and simple things that we do at home, like using aerosols, have bad effects on the ozone layer, which protects life on Earth from ultraviolet radiation.

Water is also suffering from pollution by domestic, municipal and also industrial waste. It is up to us to stop damaging the environment. We all should be environment friendly!

(*http://www.englishiana.com/2016/08/20-contoh-explanation-text-terjemahannya.html*)

1. What is the appropriate title from the text above?
   a. Water
   b. Environment
   c. Emissions
   d. Pollution
2. What is the biggest enemy of the environment?
   a. Water
   b. Soil
   c. Pollution
   d. Industries of engine
3. Which statement is true as the cause of air pollution?
   a. It causes ozone layer
   b. The emissions form industries and engines, including cars, are big causes of air pollution.
   c. To save human and earth.
   d. Industries discharge a variety of pollutants in their wastewater

4. "*It* is the contamination of air, water and soil by different materials" (in line 2)
   What does the word "It" refer to?
   a. Water
   b. Pollution
   c. Soil
   d. Industries
5. What is the function of the ozone layer?
   a. To protect life on Earth from ultraviolet radiation.
   b. To damage the environment
   c. To make a pollution
   d. To cause the bad effect of environment
6. Water pollution is also *suffering* from pollution by domestic…
   What is the synoym of *suffering*?
   a. Hurt
   b. Happy
   c. Dissapointed
   d. Sick

Text 2 is for questions 7-10

Tornado

Tornados occur when the conditions that cause thunderstorms are unusually violent. Winds blowing in opposite directions around a strong updraft start a narrow, violent whirl. Centrifugal force effectively throws the air away from the centre, leaving a core of very low pressure. This is much like stirring water in a cup, thus forming a vortex-like dip in the surface.

This low-pressure core acts as a partial vacuum, sometimes helping to lift the roofs off houses. Most of the damage, though, results from the force of the wind itself. Around the edges of the whirl, wide speeds may reach 300 miles (480 kilometers) per hour. At first, the tornado's funnel is whitish-grey because it is composed of minute's water droplets formed as the air in the funnel expands and cools. After touching down, the funnel becomes dark because of all of the debris it has picked up. This debris can include soil, tree limbs, and parts of buildings; tornados have been known to pick up automobiles, horses and whole trees.

A tornado usually moves toward the east (or often northeast in the northern Hemisphere and southeast hemisphere) at 25 to 40 miles (40 to 65 kilometers) per hour. Fortunately, most tornados are less than half a mile (800 meters) wide; the edge of one may destroy all of the houses on one side of a street while leaving those on the other side completely undamaged. Death from tornados in the United States averaged roughly 100 per year over the last century. However, they have dropped somewhat in recent decades as better forecasting and warning systems have been implemented.

(www.pustakabahasainggris.com)

7. Why have deaths from tornados in the United States decreased in the recent decades?
    a. Most tornados are less than half a mile wide
    b. There are no more tornados in the united states
    c. There are better forecasting and warning systems
    d. The tornado has left the united states completely undamaged
8. Why is the tornado's funnel dark as soon as it touches the ground?
    a. It contains water droplets
    b. The temperature is changed
    c. Whirl of winds
    d. It has picked up debris
9. What are the impacts of tornados?
    a. Water dropping
    b. Heavy disasters
    c. Whirl of winds
    d. Grey and dark sky
10. "... While leaving those on the other side completely undamaged" (par 3)
    The underlined word has similar meaning to...
    a. Ruined
    b. Vanished
    c. Wounded
    d. Safe

Text 3 is for questions 11-15

Acid rain can severely damage both plant and animal life. Certain lakes, for example, have lost all fish and plant life because of acid rain. Acid rain comes from sulfur in coal and oil. When they burn, they make sulfur dioxide (SO2). Most sulfur leaves factory chimneys as the gaseous sulfur dioxide (SO2) and most nitrogen are also emitted as one of the nitrogen oxides (NO or NO2), both of which are gasses. The gasses may be dry deposited–absorbed directly by the land, by lakes or by the surface vegetation. If they are in the atmosphere at any time, the gasses will oxidize (gain an oxygen atom) and go into solution as acids.

Sulphuric acid (H2 SO4) and the nitrogen oxides will become nitric acid (HNO3). The acids usually dissolve in cloud droplets and may travel great distances before being precipitated as acid rain. Catalysts such as hydrogen peroxide, ozone, and ammonium help promote the formation of acids in clouds. More ammonium (NH4) can be formed when some of the acids are partially neutralized by airborne ammonia (NH3). Acidification increases with the number of active hydrogen (H+) ions dissolved in acid. Hydrocarbons emitted by, for example, car exhausts will react in sunlight with nitrogen oxides to produce ozone. Although it is invaluable in the atmosphere, low-level ozone causes respiratory problems and also hastens the formation of acid rain.

When acid rain falls on the ground it dissolves and liberates heavy metals and aluminum (Al). When it is washed into lakes, aluminum irritates the outer surfaces of many fish. As acid rain falls or drains into the lake the pH of the lake falls. Forests suffer

the effect of acid rain through damage to leaves, through the loss of vital nutrients, and through the increased amounts of toxic metals liberated by acid, which damage roots and soil microorganisms.

(https://www.pustakabahasainggris.com/contoh-soal-ujian-dan-jawaban-bahasa-inggris)

11. What is the text mainly about?
    a. The definition of acid rain.
    b. The process of acid rain.
    c. The effect of acid rain
    d. Acid rain.
12. What is the result of the burning of the coal and oil?
    a. Ammonium
    b. Nitric acid
    c. Sulphuric acid
    d. Sulfur dioxide
13. Which of the following is not true about acid rain?
    a. It contains lower pH than the normal rain.
    b. It has a higher pH than the normal rain
    c. It can damage animal and plant life.
    d. It contains dangerous gasses.
14. ….. is dangerous for the scale of fish in the lake.
    a. Acid rain
    b. Heavy metal
    c. Aluminum
    d. Vital Nutrient
15. Acid rain can severely **damage** both plant and animal life. The bold word hasthe closest meaning to ….
    a. Harm
    b. Hang
    c. Endow
    d.produce

Teacher's Note

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

The distribution of exercise items

The Aspect of Reading Comprehension	Items	Number
Word Comprehension	3	4, 6, 12
Sentence Comprehension	5	2, 5, 7, 8, 9
Paragraph Comprehension	4	1, 3, 11, 13
Text Comprehension	3	10, 14, 15

Appendix L. The Result of Reading Post-test of the Experimental and Control Groups

No	Experimental Class		Control Class	
	Name	Post-test Score	Name	Post-test Score
1	AK	80	AIAP	87
2	AF	80	ANH	67
3	ANI	80	ASAI	73
4	ANA	80	ATM	80
5	ATW	85	CF	87
6	BF	80	DF	80
7	BK	75	EAP	87
8	CW	80	GCF	80
9	DIN	75	GN	73
10	DA	80	GDI	87
11	DM	80	HS	87
12	DAW	80	HNF	60
13	DD	85	HH	87
14	DL	85	IND	87
15	EH	80	LEA	70
16	FF	75	MA	87
17	FYP	80	MAAS	70
18	GA	80	MHK	80
19	LE	73	MDM	70
20	MNF	80	MU	70
21	MAS	87	MI	80
22	MR	75	MS	67
23	MS	80	PNF	67
24	MIIB	80	RD	73
25	MRS	80	RR	80
26	MRP	80	RW	60
27	NH	85	S	67
28	PNO	80	SNA	80
29	Q	80	SDRS	80
30	RH	80	TT	87
31	RS	80	VF	80
32	RD	80	Y	60
33	TAY	80	YWS	60
34	TAZ	80		
35	YT	80		

Appendix M. The Tabulation of the Score of the Reading Comprehension Post-test of the Experimental Group and Control Group

Students Number	Experimental Group	Control Group
	X	Y
1	80	87
2	80	67
3	80	73
4	80	80
5	85	87
6	80	80
7	85	87
8	80	80
9	75	73
10	80	87
11	80	87
12	80	60
13	85	87
14	85	87
15	80	70
16	75	87
17	80	70
18	80	80
19	73	70
20	80	70
21	87	80
22	75	67
23	80	67
24	80	73
25	80	80
26	80	60
27	85	67
28	80	80
29	80	80
30	80	87
31	80	80
32	80	60
33	80	60
34	80	
35	80	

Appendix N. Students' Worksheet

STUDENT WORKSHEET

A. Read the text carefully! Do investigate in group! Write your plan and answer in this worksheet! Every group should have different text!

Group Worksheet:

Group: Kelompok I Members: 1. Doni Damara (13) 2. Alvin nur Irfani (03) 3. Lukman Andigwan (20) 4. Ahmad Afandi (02) 5. Dinda Ayu (12) 6. Defil Aini (10)	
Title	
Gen. Statement	Air is the most polluted environmental resource it is the introduction of harmful substances in the air that results in detrimental impacts to the environmental and humanity.
Explanation	The common air pollutants include hydrocarbons volatile organic compounds (VOCs) dust particles carbon monoxide, sulfur oxides, particule matter. chlorofluorocarbons (CFCs) and nitrogen oxides.
Important information	- Air pollution reduces air quality by making it unclean or contaminated. - It occurs - - -
Summary	The common air pollutants include hydrocarbons volatile organic compounds (VOCs) dust particles carbon monoxide, sulfur oxides, particule matter
Please make some question based on your text!	1. How to deal with air pollution produced by the factory. ? 2. 3. What is the government's policy to deal with air pollution 4. 5.

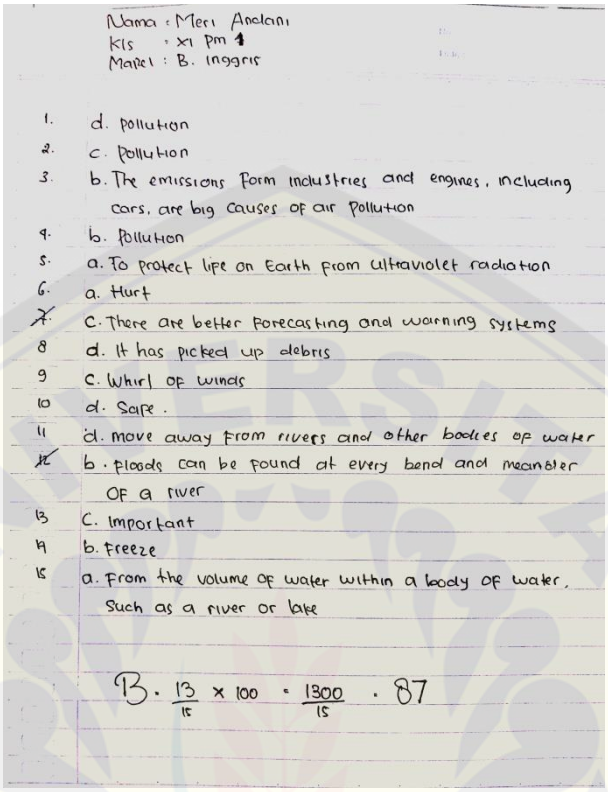
STUDENT WORKSHEET

A. ***Read the text carefully! Do investigate in group! Write your plan and answer in this worksheet! Every group should have different text!***

Group Worksheet:

Group: 4 Members: 1 Ade Frishadi 2 Meilina Ardriani 3 Yusmiati 4 Alvi Nur Annisa 5 Dedi Ilman 6 Riky Shadi	
Title	Noise Pollution
Gen. Statement	- Noise pollution is any loud sounds that are either harmful or annoying to humans and animal
Explanation	- Noise pollution similarly affect marine and wildlife animals and can even cause their death
Important information	- Noise has become a permanent aspect owing to the ~~daily~~ daily activity - noise pollution lacks the element of accumulation in the environment - noise pollution similarly affects marine and wildlife animals -
Summary	Noise pollution is any ~~loud~~ loud sounds that are either harmful or annoying to humans and animals. It is measured in decibels (dB) and sounds levels beyound 100 dB can cause permanent hearing loss. the industrial sound limits according to the world healt organi-tation (WHO) is 75 dB.
Please make some question based on your text!	1. What are the causes of noise pollution ? 2. Please mention, what is the effect of noise pollution? 3. 4. 5.

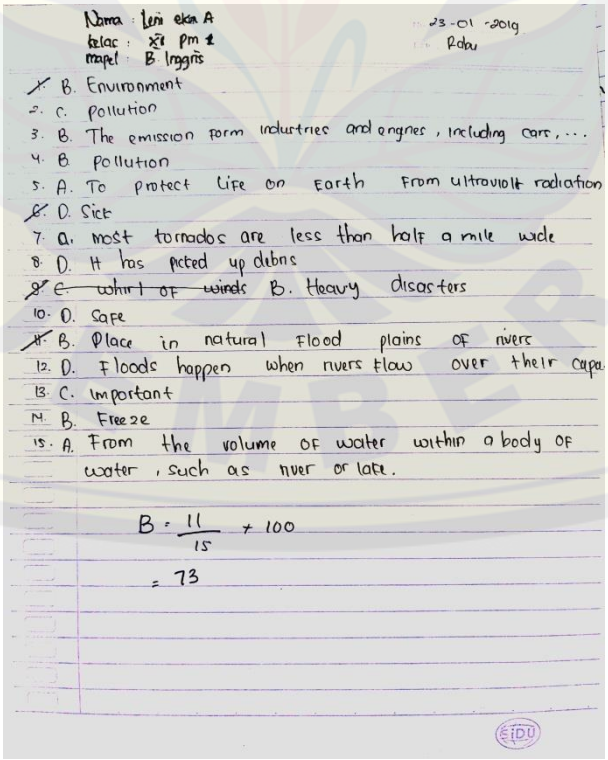
Appendix O. The Post Test Result of the Experimental Group



Nama : Meri Anelani
Kls : XI PM 1
Mapel : B. Inggris

1. d. pollution
2. c. pollution
3. b. The emissions form industries and engines, including cars, are big causes of air pollution
4. b. pollution
5. a. To protect life on Earth from ultraviolet radiation
6. a. Hurt
7. c. There are better forecasting and warning systems
8. d. It has picked up debris
9. c. Whirl of winds
10. d. Safe.
11. d. move away from rivers and other bodies of water
12. b. floods can be found at every bend and meander of a river
13. C. Important
14. b. Freeze
15. a. From the volume of water within a body of water, such as a river or lake

$B. \frac{13}{15} \times 100 = \frac{1300}{15} = 87$



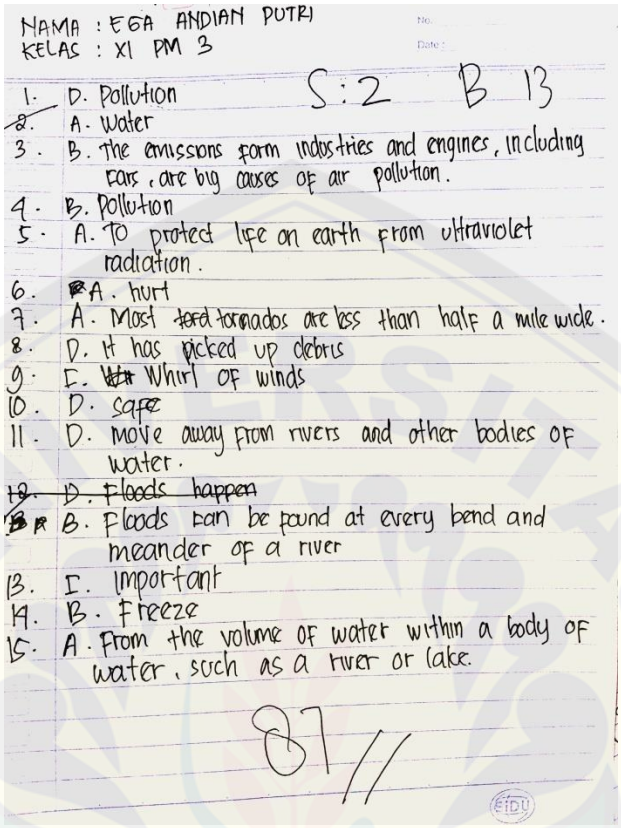
Nama : Lesi eka A
kelas : XI PM 1
mapel : B Inggris
23-01-2019
Rabu

1. B. Environment
2. C. Pollution
3. B. The emission form indurtries and engines, including cars, ...
4. B. pollution
5. A. To protect life on Earth from ultraviolt radiation
6. D. Sick
7. a. most tornados are less than half a mile wide
8. D. It has acted up debris
9. ~~C. whirl of winds~~ B. Heavy disasters
10. D. Safe
11. B. Place in natural flood plains of rivers
12. D. Floods happen when rivers flow over their capa
13. C. Important
14. B. Freeze
15. A. From the volume of water within a body of water, such as river or lake.

$B = \frac{11}{15} \times 100$

$= 73$

Appendix P. The Post Test Result of the Control Group

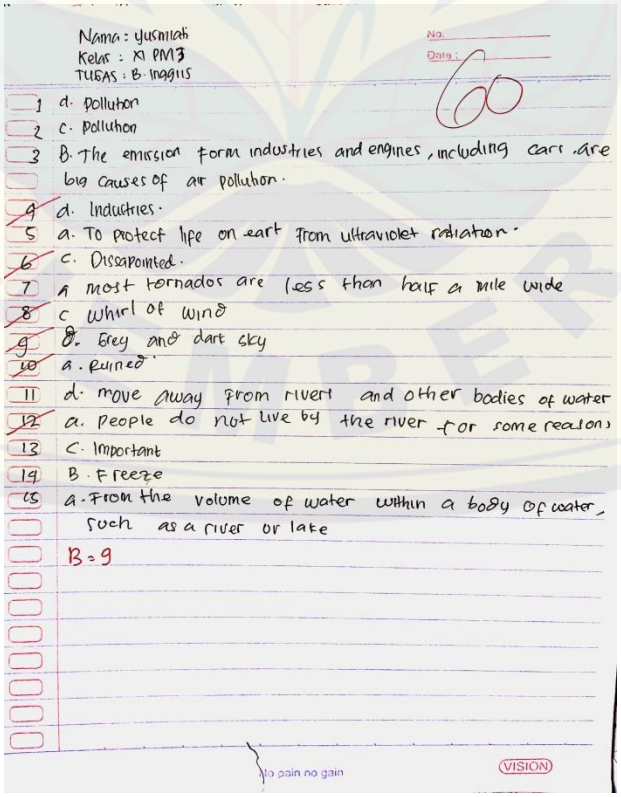


NAMA : EGA ANDIAN PUTRI
KELAS : XI PM 3

S : 2 B 13

1. D. Pollution
2. A. Water
3. B. The emissions form industries and engines, including cars, are big causes of air pollution.
4. B. Pollution
5. A. To protect life on earth from ultraviolet radiation.
6. A. hurt
7. A. Most ~~tord~~ tornados are less than half a mile wide.
8. D. It has picked up debris
9. E. ~~Wh~~ Whirl of winds
10. D. safe
11. D. Move away from rivers and other bodies of water.
12. ~~D. Floods happen~~
13. B. Floods can be found at every bend and meander of a river
14. I. Important
15. B. Freeze
16. A. From the volume of water within a body of water, such as a river or lake.

87 //



Nama : yusmiah
Kelas : XI PM3
TUGAS : B. Inggris

60

1. d. pollution
2. c. pollution
3. B. The emission form industries and engines, including cars are big causes of air pollution.
4. d. Industries.
5. a. To protect life on eart from ultraviolet radiation.
6. c. Dissapointed.
7. a most tornados are less than half a mile wide
8. c whirl of wind
9. B. Grey and dart sky
10. a. ruined.
11. d. move away from rivers and other bodies of water
12. a. people do not live by the river for some reason
13. C. Important
14. B. Freeze
15. a. From the volume of water within a body of water, such as a river or lake

B = 9

no pain no gain VISION

Appendix Q. Permission Letter for Conducting Research from The Faculty of Teacher Training and Education of Jember University

KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
UNIVERSITAS JEMBER
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
Jalan Kalimantan 37 Kampus Bumi Tegalboto Kotak Pos 159 Jember 68121
Telepon (0331)-330224, 334267, 337422, 333147 • Faximile (0331)-339029
Laman : www.unej.ac.id

Nomor : 8202 / UN25.1.5 / LT / 2018
Lampiran : -
Perihal : Permohonan Izin Penelitian

14 NOV 2018

Yth. Kepala SMKN 1 Jember
Jember

Diberitahukan dengan hormat, bahwa mahasiswa FKIP Universitas Jember di bawah ini.

Nama	: Devi Syarifah Septiana
NIM	: 140210401001
Jurusan	: Pendidikan Bahasa dan Seni
Program Studi	: Pendidikan Bahasa Inggris

Berkenaan dengan penyelesaian studinya, mahasiswa tersebut bermaksud melaksanakan Penelitian di Sekolah yang Saudara pimpin dengan judul: "The Effect of Applying Group Investigation Method on Vocational High School Students' Reading Comprehension". Sehubungan dengan hal tersebut, mohon Saudara berkenan memberikan izin dan sekaligus memberikan bantuan informasi yang diperlukan.

Demikian atas perkenan dan kerjasama yang baik kami sampaikan terima kasih.

Dekan,

Prof. Dr. Suratno, M.Si
NIP. 196706251992031003

Appendix R. Statement Letter for Accomplishing the Research from SMK Negeri 1 Jember

PEMERINTAH PROVINSI JAWA TIMUR
DINAS PENDIDIKAN
SEKOLAH MENENGAH KEJURUAN NEGERI 1
JEMBER
Bidang Keahlian : Bisnis dan Manajemen/Pariwisata/Teknologi Informasi dan Komunikasi
JALAN JAMBU NO. 17 TELP. (0331) 483108 FAX. (0331) 429690
Website : www.smknegeri1jember.sch.id email : smknegeri1jember@yahoo.com
ISO 9001 : 2008 No. 26259/A/0001/UK/En Tanggal 01 Juli 2010
JEMBER 68111

SURAT KETERANGAN
Nomor : 670/028/101.6.5.19/2019

Yang bertanda tangan di bawah ini, Kepala SMK Negeri 1 Jember menerangkan dengan sebenarnya bahwa :

Nama	: DEVI SYARIFAH SEPTIANA
NIM	: 140210401001
Program Studi	: Pendidikan Bahasa Inggris
Jurusan	: Pendidikan Bahasa dan Seni

Benar-benar telah melakukan penelitian dengan judul: "The Effect of Applying Group Investigation Method on Vocational High School Students Reading Comprehension" pada Minggu ke-1 Tanggal 16-17 Januari 2019 dan Minggu ke-2 tanggal 22-23 Januari 2019.

Demikian surat keterangan ini dibuat dengan sebenarnya untuk dapat dipergunakan sebagaimana mestinya.

Jember, 24 Januari 2019
Kepala Sekolah,

SMKN 1 JEMBER

Drs. H. FURQONADI SUCIPTO, MM
NIP. 19621110 198703 1 020