CHAPTER III
METHODOLOGY

This chapter discusses research method in this study including research design, population and sample, data collection and data analysis.

3.1 Research Design and Implementation

The objective of this study was going to find out the effectiveness of the using SRS toward ESP students reading comprehensions, especially for management and to investigate how was students' responses related to SRS (kahoot! and Socrative) ussage. This study used quantitative approach because it used numerical data. Creswell (2014) stated that quantitative research explains phenomena by collecting numerical data is analyzed mathematically based on experimental group and control group methods in particular statistics. For answering the first research question, the design of the study used quasi-experimental. The researcher conducted this study using quasi- experimental research because it isn't possible for intacting the group because of the university policy which classes have already divided by their own majors, so it is impossible to randomize or regroup them. Quasi-experimental can be used if there is no possibility to randomize or classify the sample. Quasi-experimental methods involve creation comparison group are mostly used when it isn't possible for randomizing individuals or groups to treatment and control groups (White and Sabarwal, 2014).

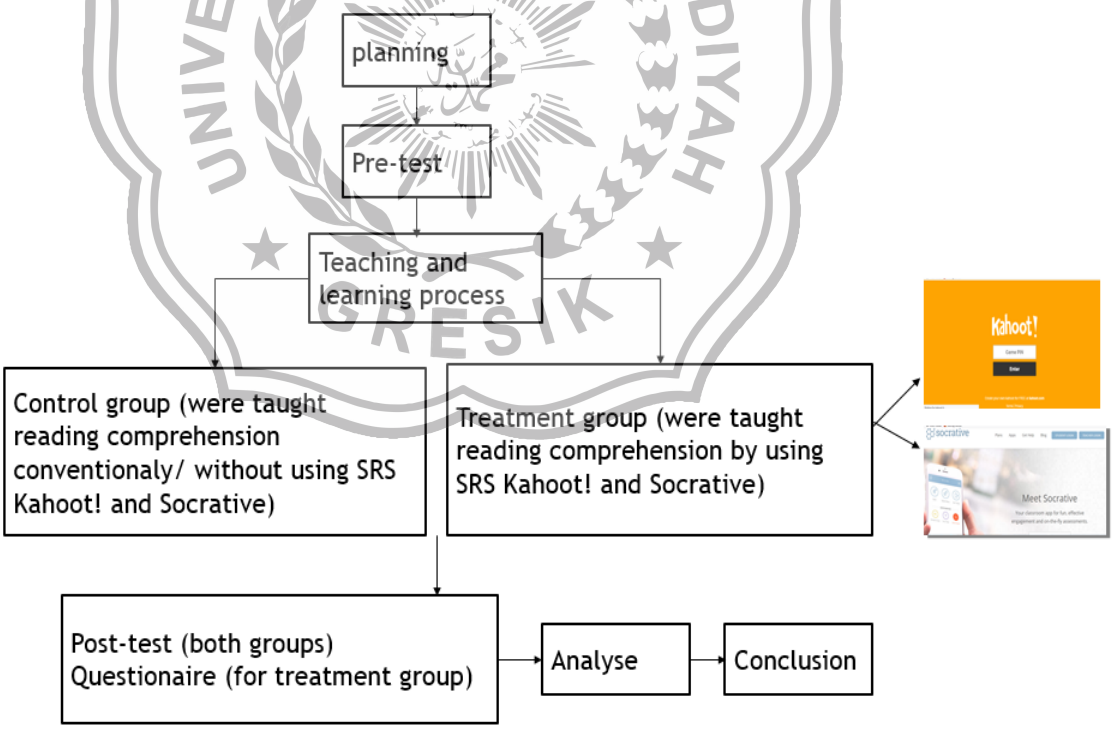
For answering the second research problem it used quantitative descriptive survey design since this study described the students' percpective related to the SRS (kahoot! and Socrative) ussage. The researcher used quantitative method for discovering the important information related to the use of SRS (Kahoot! and Socrative) which the information was collected at just one point in time. Survey methods were used to explore student perceptions of learning and use of student response systems as a pedagogical strategy (Jeryl D. Benson, K. A., 2016). Survey Research is systematic gathering of information from respondents for the purpose

of understanding or predicting some aspects of behavior of the population's interest (Sukamolson, 2007). A survey is simply data collection tool to carry out survey research (Glasow, 2005). Crosswell (2012) stated that survey research is the procedure of quantitative which investigators administer survey to a sample or entire population of people for describing attitudes, opinions, behaviors, or characteristics of population. In this procedure, survey researchers collect quantitative, numbered data using questionnaires (e.g., mailed questionnaires) or interviews (e.g., one-on-one interviews). In survey used for sampling data from respondents that representative of population which uses closed ended instrument or open-ended items (Williams, 2007).

3.1.1 The design of study

The design of the study, as ilustrated in this table 1.1 below:

Table 1.1
(The design of the study)



The schedule of implementation, as ilustrated in this table 1.2 below:

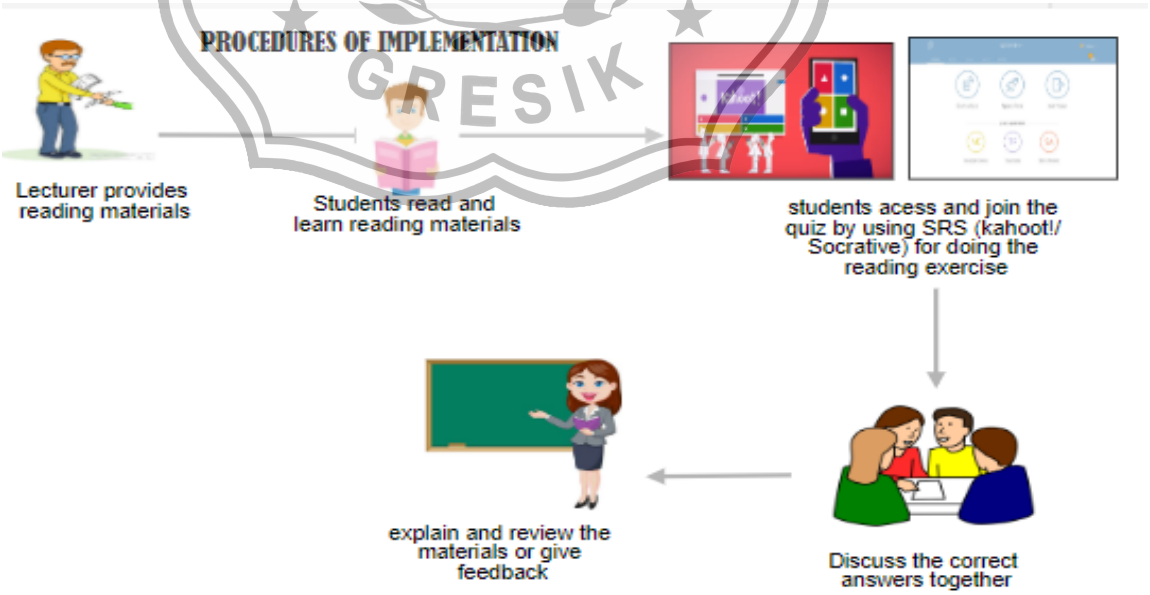
Table 1.2
(Schedule of implementation)

Meeting	Topic	Material discussed	Application
Week 1	Topic1: business (text 1)	Literal	Kahoot!
Week 2	Topic1: business (text 2)	Literal, reorganization	Kahoot!
Week 3	Topic1: business (text 3)	Literal, reorganization, inference, prediction	Kahoot!
Week 4	Topic1: business (text 4)	Literal, reorganization, inference, prediction, evaluation, personal response	Kahoot!
Week 5	Topic 2: labor (text 5)	Literal	Socrative
Week 6	Topic 2: labor (text 6)	Literal, reorganization	Socrative
Week 7	Topic 2: labor (text 7)	Literal, reorganization, inference, prediction	Socrative
Week 8	Topic 2: labor (text 8)	Literal, reorganization, inference, prediction,evaluation, personal response	Socrative

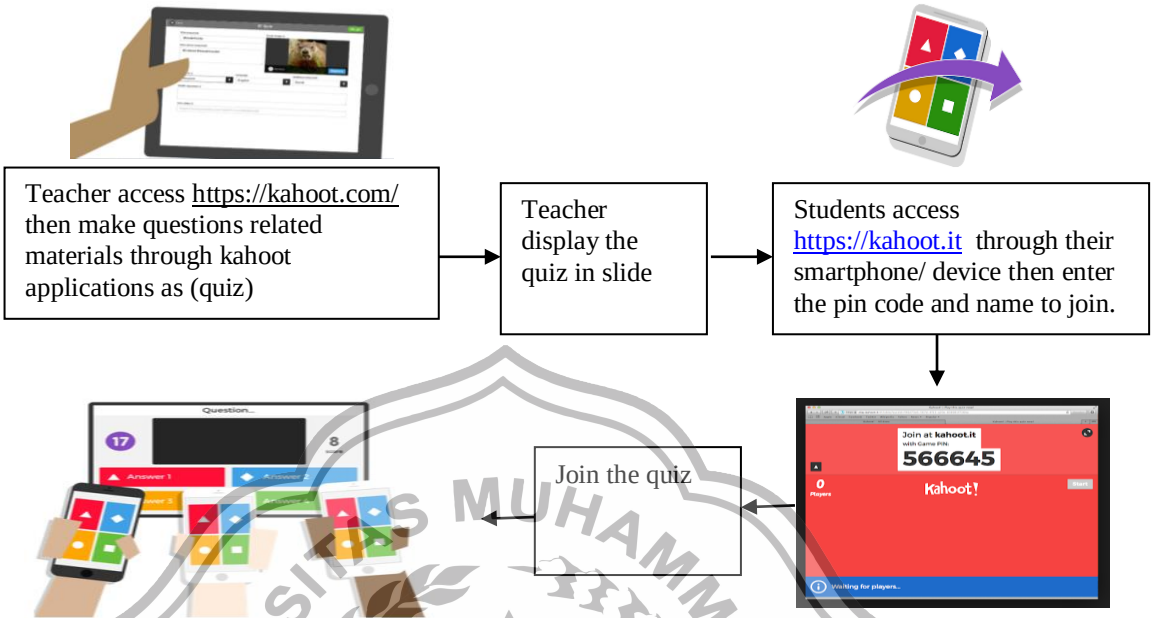
3.1.2 The Design of SRS Procedures Implementation

The procedures of applying SRS (kahoot! and socrative) in this study can be implied as ilustrated in pictures below:

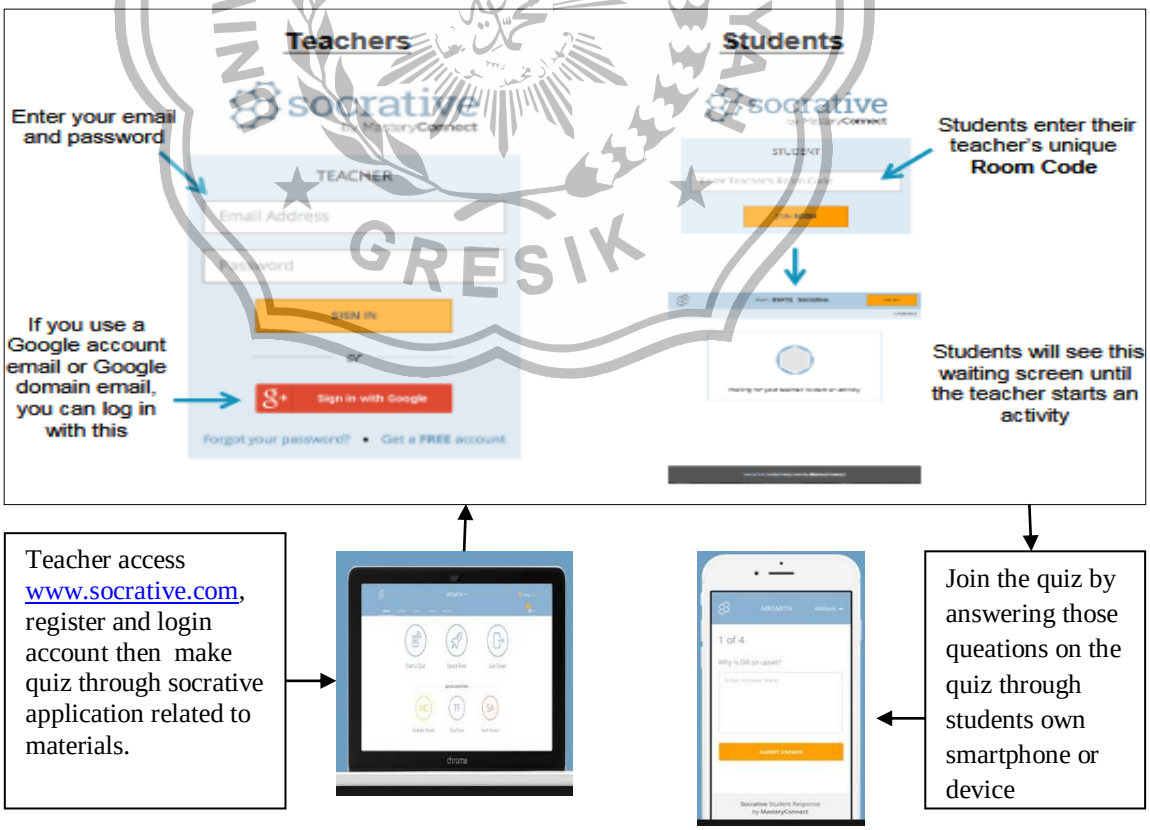
Picture 2.1
(Procedure of implementation)



Picture 2.2
(kahoot implementation)



Picture 2.3
(Socrative implementation)



3.2 Population and Sample

The population of this study was University students in D1 Equivalent English prorgam major in management at University Of Muhammadiyah Gresik academic year 2018-2019. The D1 Equivalent English prorgam held by LC (Language Center). Students' ages ranged from 18 to 19. They get both EAP and ESP classes 4 times in a week for 16 weeks in both 1st and 2nd semesters of their first year academic. Those two courses using English for Academic and English for management course books covers 4 skills (listening, Reading, Speaking and Writing) as guidance. The supplements were also provided to support the learning materials, but this study focused on the ESP course in 2nd semester especially in reading class for management morning class. There were 5 different classes of management morning class (C, D, E, F and G class which consist of 203 students).

The researcher measured those five classes' final scores from EAP course in the first semester to find out the homogeneity and normality before deciding treatment and control group. The scores consisted of total scores from 4 different skills (Listening, Reading, Writing and Speaking) that became learning outcome for one semester. The scores analyzed by using SPSS 15.0. For homogeneity tested by using Levene test and oneway ANOVA. Much interest has been shown in Levene's (1960) test of variance homogeneity that it is becoming standard output in statistical packages (O'Neill, M., 2006). While to find out the normality analysed by using Saphiro-wilk test. The Shapiro-Wilk test is one of the most popular tests for normality assumption (Keya Rani Das, A. H.,2016).

Table 1.3
Levene Test

Levene Statistic	df1	df2	Sig.
,708	1	73	,403

Table 1.4
ANOVA

score	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7,698	1	7,698	1,312	,256
Within Groups	428,248	73	5,866		
Total	435,947	74			

The researcher found the result that class C (management A morning) and class D (management B morning) were homogen. The result of Levene test showed 0,403 > 0,05. The result of one way ANOVA showed that the score of EAP between class C and D class is 0,256 > 0,05. It meant that the data variable between class C and D were having the same variance or homogeny.

Table 1.5
Tests of Normality

	Class	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
score	class C (manj A)	,134	37	,090	,958	37	,180
	class D (manj B)	,105	38	,200(*)	,944	38	,054

* This is a lower bound of the true significance.
a Lilliefors Significance Correction

From the output test of Normality in table 1.5 above, the score significance of group A (Class C) is 0,180. While the significance score for group B (class D) is 0,054. Because the significance score from group A and B are > 0,05 so it could be concluded that the data of the students' achievement were having normal distribution. It is as illustrated in the **appendix 1.1 and 1.2**

From the result of that homogeneity and normality test, the researcher then decided the samples. Bedside from the result of homogeneity and normality test, the reason why the researcher chose the sample was because the researcher considerated the character of participation and interaction of students' learning style. Regarding of the character from traditional style wasn't optimal yet, it needed interactive media which considerated interaction aspect and atmosphere aspect that fulfiled the students' need and it was also expected to make them still

feel fun. So, the researcher decided the samples were class C (management A morning class) as treatment group consisted of 37 students (7 males and 30 females) and Class D as control group (management B moring class) consisted of 38 students (6 males and 32 females). The reason why did the researcher choses management major was because management major students are impressed the readiest global business than other several majors in preparing future general with the global era, such as online business. Recently online business grow rapidly, which in online business they are also communicate with other people around the world. Of course English become the communication language that they will use during conducting online business transaction. There are also many sites for buying and selling that used English terms that they need to understand, so they need both read and comprehend the English terms.

3.3 Data Collection

The data collection involves the design of SRS procedures implementation, instruments and data procedures.

3.3.1 Instrument

This study used two kinds of test as the first instrument. They were pre-test and post-test. The test contained 20 items of multiple choice. The test items were made by the researcher which questions level guidance of reading comprehension components refered to Day and Park (2005) and Muayanah (2014). The detail test items for pre and post test consisted of 8 questions of literal, 5 questions of reorganization, 4 questions of inferring, 1 question of prediction, 1 question of evaluation and 1 question of personal response. For detail instrument illustrated in **appendix 1.5, 1.6 and 1.7.** For the readability text that used in pre and post test, the researcher used readability formula online application. The result showed that the text used in pre and post test are proper for collage students with the age 18-19 years old (grades Level 13/ collage level entry). The result can be seen in **appendix 1.8.1 and 1.8.2**

Before the test distributed to both treatment and control groups, the researcher conducts to try-out the test to the students in G-class (manangement E and entreprenership morning class). To get validity of the instruments analyzed by using correlation product moment pattern and for reliability analyzed by cronbach's Alpha. Mohsen Tavakol, (2011) stated that Alpha is a commonly employed index of test reliability.

The instrument tried out several times until the researcher getting the valid result. The first test tried out on 8th may 2019, from those result there were unvalid items for pre test number (1,2,4,6,7,8,10,14,15,16,18) while there were 10 unvalid items for post test no (1,3,4,5,6,7,8,12,17,18). Then the researcher revised unvalid items and tried out for the second time on 10th may 2019. The result there were 8 unvalid items of pre test no (2,4,6,7,8,10, 14, 15), while 6 unvalid items for post test no (1,3,4,6,7,8). The researcher revised and tried out for the third time on 15th may 2019. The result showed that there were 6 unvalid items for the pre test no (2,6,7,8,10,14) and 4 unvalid items for post test no (3,6,7,8). After revising then researcher tried out for the four time on 17th may 2019 then the result showed that there were 3 unvalid items of pre test no (6,7,8) and 1 unvalid item for post test no (6). Next researcher tried out for the fifth time on 22nd may 2019 and result that tere were 2 unvalid items for pre test no (6,7) while item for the post test had already valid. The sixth tried out on 24th may 2019 showed that the result of pre test was also already valid.

The validity measured by using correlation *product moment pattern.* By comparing r value and r tabel. The sempel (n) = 30 and alpha (α) = 0,05. From r tabel = 0,361, so the validity is from r value > 0,361. If $r_{value} > r_{tabel}$ = Valid, and if $r_{count} < r_{tabel}$ = Un-Valid. As we can see in output Correlated Item-Total Correlation compare with r table = 0,361 which result showed that pre and post items are > 0,361. As illustrated in **appendix 1.9.**

From the table in appendix 1.9 showed the result of validity that score r value of indicator from variabel pretest and post test, r_{value} is higher compare with r_{table} ($r_{value} > r_{tabel}$). So indicator used from variable pretest and post test, reading skill

stated valid to be used as measurement tool of variabel. While for the reliability measurement can be gotten from *one shott* way where the measurement is only do once and the compare with other statement or measure correlation between questions answers. It measured by statistic test using *Cronbach Alpha* (α). Result of reliability test can be seen as following table:

Tabel 1.6

Variabel	*Cronbach's Alpha*	Standard Reliability	Result
Pretest	0,881	0,700	Reliabel
Posttest	0,858	0,700	Reliabel

The score of *cronbach's alpha* all variabel pretest and posttes is higher than 0,700, So it can be concluded that indicator used in variabel pre test and post test all are reliable used as variabel measurements. The size of alpha is determined by both the number of items in the scale and the mean inter-item correlations. provide the following rules of thumb: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable" (George and Mallery, 2003 (p. 231) in Gliem, J. A. & Gliem, R.R., 2003). The detail result of realiability pre and post test can be seen in **appendix 1.10 and 1.11**

The second instrument is questionnaire adapted from Bicen (2018). The questionnaire items is General Perceptions about SRS (Kahoot! and Socrative) consist of 20 items using 5 point Likert-type scale (completely agree, agree, indecisive, disagree, and completely disagree). An answer of "Completely agree" by the student is associated with a score of point 5, "agree" with a score point 4, "indecisive" with a score point 3, "disagree" with a score point 2 and "completely disagree with the score 1. The detail items of questionnaire can be seen in **appendix 1.12.**

The questionaire tried-out to the students in G-class (manangement E and entreprenership morning class) too for getting Validity and Reliability of the instrument which also analyzed by using cronbach's Alpha. Subedi (2016) said

that Cronbach's alpha is generally used as a measure of reliability of instrument like Likert data. The instrument tried out on 24th may 2019.The validity measured by using correlation *product moment pattern* too with the sempel (n) = 30 and alpha (α) = 0,05 from r tabel = 0,361. As we can see in output Combach Alpha in the Correlated Item-Total Correlation compare with r table = 0,361 which the result showed that all items in questionaire are > 0,361. As illustrated in **appendix 1.13.**

The table in appendix 1.13 showed that r_{value} is higher compare with $r_{table.}$ So indicator used from quetionaire stated valid to be used as measurement tool of variabel. While for the reliability measurement measured by statistic test using *Cronbach Alpha* (α). Result of reliability test can be seen as following table 1.7:

Tabel 1.7

Variabel	*Cronbach's Alpha*	Standard Reliability	Result
Questionaire items	0,918	0,700	Reliabel

The score of *cronbach's alpha* all variabel questionaire items is higher than 0,700, So it can be concluded that indicator used in variabel questionaire items all are reliable used as variabel measurements. The detail result of validity and realiability questionaire items can be seen in appendix **1.13 and 1.14**

3.3.2 Data Collection Procedure

The procedures to collect the data covered 8 steps, they were; first, the researcher studied RPS (lesson plan for a semester) used by Language Center of University of Muhammadiyah Gresik. Detail RPS can be seen in **appendix 1.15**. Then second, researcher prepared to select the learning materials and designed 8 meetings lesson plans for both two groups. The details leasson plans for both treatment and control group can be seen in **appendix 1.16 and 1.17.** Third, the researcher continued by distributing pre-test. Fourth, the reaercher applied SRS in treatment group for 8 meetings consisted of (4 meetings used kahoot! and 4 meetings used Socrative). The researcher conducted traditional teaching method

in control group. There were two topics discussed in the class, they were "topic 1; business" and "topic 2; labor" with 4 different texts for each topic. The texts were from the module and supported by supplement related to the topic, detail can be seen in **appendix 1.18**. Fifth, the researcher provided post- test that given to both groups at the end. Sixth, the researcher provided questionnaire to the treatment group. Seventh, the researcher collected the data result from the instruments (pre - post test and questionnaire), the researcher then analyzed the data result. Eight, the reaercher intrepreteed the data.

3.4 Data Analysis

In this study, the researcher analyzed the data by using statistical method as quantitative. The technique used for finding significant differences on the students' comprehension which taught by using SRS (kahoot! and socrative) and taught without SRS. The hypothesis testing of this study as follow:

1. If T-test score is bigger than T-table, the alternative hypothesis (Ha) is accepted. **Ha: μ1 = μ2 (Ha** = there is significance effect of English for management students' reading comprehension toward using online students' response systems). It means that there is significant different in the score of English for management students' reading comprehension taught using SRS and taught without using SRS. The difference is significant.

2. If T-test score is smaller than T-table, the Null Hypothesis (Ho) is rejected.
   H_0 **: μ1 ≠ μ2 (**H_0 = there is no significance effect of English for management students' reading comprehension toward using online students response systems). It means that there is no different score of English for management students' reading comprehension taught using SRS and taught without using SRS. The difference is significant.

The data was gotten from the result of students score on pre and post test. The data result was processed by comparing with the pre-test and post-test of treatment group, also compare the post test of treatment and control group to see whether there would be significant difference between treatment and control group. Then the researcher analyzed the result by using SPSS 15.0 through T-test. According to Kim, T.K., (2005), He said that a t test is a type of statistical test that is used to compare the means of two groups. In this study, the paired sample T-test for comparing the result of pre and post test of treatment group. While using independent sample T-test for comparing the post test of both treatment and control group. Because the data was taken from the result of pre and post test, so the proper pattern was using T-test. The result would answer the 1st research question. After the data analyzed then it was intrepreted by the researcher. For answering the 2nd research question, the instrument used likert scale questionaire and the result analyzed by the researcher too for finding the frequencies of the questionnaire items result. The researcher calculated the percentage and counted the students' answer through the total of each item then then interpreted it.