

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses the research methodology applied in this study. It deals with the description of the Type of the Research, Time and Location, Population and Sample, Variable of the research, Data Collection Technique, Research Instrument, Research Procedures, and Data Analysis.

3.1. Type of Research and Research Design

3.1.1. Type of Research

According to Ruth Ravid (2011:22) most textbooks on educational research describe method and approaches as either quantitative or qualitative. Quantitative research is defined in these textbooks as research that focuses on explaining cause and effect relationships, studies a small number of variables, and uses numerical data. While, Qualitative research is defined in most textbooks as that which seeks to understand social or educational phenomena. It is usually in such research, the researcher focuses on one or a few cases, which are studied in-depth using multiple data source.

Regarding the textbooks on educational research, this research constitutes a quantitative research.

3.1.2. Research Design

In this research, the researcher uses quantitative. It is because the researcher wants to seek the improvement of student's grammar accuracy after learning grammar through songs as the expected result by conducting fixed procedures. It is relevant with the statement of Arikunto (2010) that the quantitative research has

clear procedures and expected result. Thus, the quantitative method is appropriate to be used in this research.

The experimental research is applied in this research. Ary *et al* (2007:338) states that Experimental research design is a scientific in which the researcher manipulates one or more independent variables, controls any other relevant variables, and observes the effect of a manipulation on the dependent variables. It means that the experimental research design is a research design in which the researcher manipulates the experimental group. In this case, the researcher serves treatment to manipulate that experimental group. The treatment is in the form of kind teaching grammar.

The experimental research design is classified into pre-experimental design, true experimental, and quasi-experimental. Pre-experimental research does not have random assignment of subject to groups or other strategies to control extraneous variables. Quasi-experimental research lack randomization but employ other strategies to provide some control over extraneous variables. While, True-experimental research uses randomization and provides maximum control of extraneous variables (Ary *et al*, 2002:302). The true-experimental is chosen as the experiment that it can neutralize the differences between the experimental group and control group, so, those groups can be opined as the balanced in everything. If two groups are balanced, they can be opined as every difference which was happened after having treatment as the result from the own treatment, not from another variable.

In experimental design, the researcher takes two classes and divided into two groups. The experimental group and control group are the name of groups to be tested (Collidge, 2000). The experimental group is the classes that receive the grammar teaching through songs while the control group is the class that receive the grammar teaching through conventional teaching. The researcher conducts several meeting in teaching grammar (conditional sentence). In the first meeting, the researcher gives a test of grammar (conditional sentence), called pre-test. Second, after having pre-test, the researcher teaches the grammar (conditional sentence), called treatment. And the last, the researcher gives the test again, called post-test.

3.2. Time and Location of Research

Before the researcher conducts the research, these are some schedules as below:

Time : March,

Location: at SMKN 1 JETIS Mojokerto

Table 3.1
The researcher's schedule

No.	Time	Schedule
1.	At March, 24 th 2015	Send permission letter at SMKN 1 JETIS Mojokerto
2.	At April, 20 th 2015	Interview the English teacher about the students' understanding on grammar, and grammar assessment rubric
3	At May, 4 th 2015	Try Out
3.	At May, 11 th 2015	Pre-test
4.	At May, 18 th - 19 th 2015	Prepare lesson plan and teaching materials

		(treatment)
5.	At May, 25 th 2015	Post-test

From the research's schedule above, the researcher is easy to do the experiment, through three phases for collecting the data, especially in English lesson.

3.3. Population and Sample

3.3.1. Population

According to Gay (1992:140) population is the group which the researcher would like take the result of a study to be generalizable. While according to Ary, (2002:163) population is the largest group that the researcher wants to generalize, it includes all members of study to define the students, events, or objects. To get the real data in this research, the researcher chooses the population of the eleventh grades of Senior High School of SMKN 1 JETIS Mojokerto in the academic of 2014/2015.

3.3.2. Sample

Gay (1992:123) states that sample is the individual selected comprise. Selection of a sample is a very important step in conducting a research study. The steps in sampling include identification of the population, determination of required sample size and selection sample.

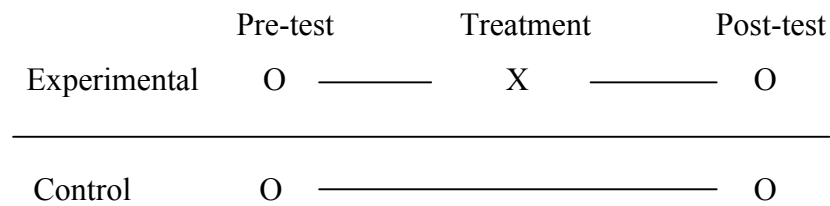
In this study, the researcher takes the sample randomly, it was taken two classes (Teknik Elektronik Industri and Teknik Kendaraan Ringan) from all the

classes of the eleventh grades in SMKN 1 JETIS Mojokerto. One class is as experimental group and the other as control group.

The researcher uses random sampling in this research by observing the data. The researcher gained the information from the English teacher that taught two classes (Teknik Elektronik Industri and Teknik Kendaraan Ringan). Both of them are given the same treatment and are taught by the same textbook and materials of curriculum but not the same method. To limit the students that the researcher has decided from the random sampling, it started from the amount students were 67 students, 31 students are from Teknik Kendaraan Ringan while 36 students are from Teknik Elektronik Industri. To make it even between those two classes, the researcher randomized the amount to 30 students in each class. The remaining 7 students in Teknik Kendaraan Ringan 1 student and Teknik Elektronik Industri 6 students are not counted but they still took the test. From 60 students who have been taken selection, those students are divided into two classes randomly into two groups which are experimental group and control group.

This design uses comparing group (class) with analyzing the treatment group (X) from pre-test (O) and post-test (O). The purpose of doing the experimental research to know the comparison result between experimental group and control group of pre-test and post-test.

The following formula is employed to describe the process of the researcher Creswell (2009:192):



3.4. Variables of the Research

Two variables were classified in this research; independent variable and dependent variable. Creswell (2009: 60) The independent variable are those that (probably) cause, influence, or affect outcomes. They are also called treatment, manipulated, antecedent, or predictor variables. While, the dependent variables are those depend on the the independent variables; they are the the outcomes or results of the influence of the independent variables. Other names for dependent variables are criterion, outcome, and effectm variables The independent variable of this research is the use of song lyric to teach grammar. The dependent variable is the students' understanding on.

3.5. Data Collection Technique

Data collection technique of this research uses testing method. The test that is done is achievement test, that is used for measuring the accomplishment of students after learning lesson. The achievement test is given after the students learn the lesson that is appropriate with the test given (Arikunto, 2006: 151). The achievement test that is used of this research is *pre-test and post-test*.

3.6. Research Instrument

According to Sugiono Instrument is the generic term that researcher uses for a measurement device (survey and test) (2008:102). Research instrument is the

process of developing, testing and using the device. The researcher uses test as research instrument. Arikunto (2010:193) states that test is a set of question or exercise or any means which is used to measure the skill and the knowledge, intelligence, ability or taken proposed by individual or a group of people.

3.6.1. Pre Test

Pre-test is conducted to find out the initial ability of the students. It enables this research to conduct the first step in a research, fixing two groups that have similar initial ability in understanding grammar (conditional sentence) to be the experimental group and control group. In this research, 25 questions in 10 questions are multiple choice, 10 questions are fill the blank with the correct verb, and 5 questions are underline the correct tense.

3.6.2. Post Test

Post-test is administered to find out the improvement of students' understanding on grammar (conditional sentence) of both two groups (experimental group and control group) after receiving the treatment. Furthermore, the result of the post-test of both two groups can be compared to answer the question whether song lyric can be effectively to improve students' understanding on grammar (Conditional Sentence) or not.

3.7. Research Procedures

In this experiment research, it needs observe to the steps of experiment's implementation. Here, the steps are:

3.7.1. Preparing the instrument

The first procedures that conducted in this research is preparing the instrument. In this procedure, the instruments of the research is prepared. The instruments prepared are teaching material (including lesson plan), and try out, pre-test and post-test questions.

3.7.2. Try out

The try out test is administered to examine the feasibility of the instrument before conducting the pre-test and post-test. There are four points to reveal in the try out test namely difficulty index, validity, and reability.

Twenty five questions were given to 15 students of SMKN 1 JETIS Mojokerto who were selected another sample of experimental and control group. The question of try out was same with pre-test and post-test given. The try out test was conducted at May, 4 2015.

3.7.3. Pre-Test

To measure the students' ability on conditional sentence before receiving the test is the purpose of conducting the pre-test. Thus, the initial of students' ability are revealed.

At May, 11 2015 the pre-test was conducted. This test was distributed to two classes of second grade senior high school of SMKN 1 JETIS in Mojokerto. The test was given to 60 students, 30 students of Teknik Kendaraan Ringan and 30 students of Teknik Elektronik Industri. The students were asked to answer 25 questions, 10 questions were multiple choice, 10 questions were fill the blank with the correct verb, and 5 questions were underline the correct tense.

3.7.4. Treatment

The third procedure of this research is treatment. The treatment is conducted after knowing the initial of students' ability. Here, the researcher uses different method to teach the same material, that the using of song lyric in teaching grammar (conditional sentence) is only conducted in the experimental group, while, in the control group uses conventional teaching that only uses slide presentation (powerpoint) of conditional sentence. Both the groups get the treatment for two days that is conducted at May, 18th – 19th 2015. Below is the detail acitivities of experimental group and control group.

Table 3.2.
The Detail Activities of Experimental Group and Control Group

Experimental Group's treatment	Control Group's Treatment
<p>1. First Day</p> <ul style="list-style-type: none">• The researcher gives an explanation about the function and the pattern of conditional sentence that is followed by some examples from type I, II, and III.• The researcher guides the students to make an example of each type.• Drilling the students about the pattern of conditional sentence on each type.• The researcher asks the students to do the exercises on their English lesson book.• Correct and give the assessment on their exerxises.	<p>1. First Day</p> <ul style="list-style-type: none">• The researcher gives an explanation about the function and the pattern of conditional sentence that is followed by some examples from type I, II, and III.• The researcher guides the students to make an example of each type.• Drilling the students about the pattern of conditional sentence on each type.• The researcher asks the students to do the exercises on their English lesson book.• Correct and give the assessment on their exerxises.

<p>2. Second Day</p> <ul style="list-style-type: none"> • Review about the function and the pattern of conditional sentence in type I, II, III. • The researcher shows song lyric (If clause song and the top 10 conditional song lyric) by using LCD because they are in video. • The students are asked to identify the sentences by mentioning what type the sentences are based on the video. • Giving them assessment based on their identification. 	<p>2. Second Day</p> <ul style="list-style-type: none"> • Review about the function and the pattern of conditional sentence in type I, II, III. • The researcher shows more conditional sentences in type I, I II, III by using slide presentation (powerpoint) in LCD. • The students are asked to identify the sentences by mentioning what type the sentences are based on conditional sentence given. • Giving them assessment based on their identification.
---	---

The detail of the activities of the experiment can be seen on the lesson plan in Appendix 1. The indicators of lesson plans of experimental group can be seen in the following table;

Table 3.3.
Indicators of Lesson Plans of Experimental Group

Materials	Meeting	Indicators	Songs
Conditional Sentence	1	Identifying the patterns of conditional sentence. Understanding the use of conditional sentence in a situation.	-
	2	Understanding the sentence in the song lyric of conditional sentence.	If clause song, The Top 10 Conditional Song Lyric

3.7.5. Post-Test

The post-test is conducted in both experimental group and control group. The purpose of this test is to find out the students' improvement after receiving grammar teaching. Thus, the result can be analyzed whether the use of song lyric gives significant effect in improving students' understanding on grammar or not that it can be seen on grammar accuracy.

The test was conducted on May 25 2015. The post test given contained 25 questions, 10 questions were multiple choice, 10 questions were fill the blank with the correct verb, and 5 questions were underline the correct tense. The questions of pre-test and post-test can be seen in the Appendix 2. The form and the indicators of the questions were similar to the pre-test question. The indicators of the items can be seen in the table below.

Table 3.4.
Indicators of Items in the Pre-Test and Post-Test

No.	Aspect	Indicators	Number of Items	
			Pre-test	Post-test
1	Grammar	Arranging a conditional sentence type I,II,III based on the situation given	1,2,3,4,5,6,7,8, 9,10,21,22,23, 24,25	1,2,3,4,5,6,7,8, 9,10,21,22,23, 24,25
2	Grammar	Choosing a correct verb to use in a conditional sentence type I,II,III based on the situation given	11,12,13,14,15 ,16,17,18,19,2 0	11,12,13,14,15 ,16,17,18,19,2 0

3.8. Data Analysis

The purpose of data analysis is to know the effectiveness of using song lyric in conditional sentence in the second grade students of SMKN 1 JETIS Mojokerto in academic year 2014/2015.

To analyze the data from the test, the researcher conducts some steps:

3.8.1. Validity

Validity is concerned with how the test measure accurately and the test is also appropriate for the subject. Here, Anshori and Iswati (2009:83) states that validity is an measurement that indicates a level of originality instrument. In other words, validity can be defined as the instrument that measures what is supposed to be measured, so it can reveal the data of variable which is analysed as appropriate. High and low of instrument validity indicates how far the the data collected not deviated from the validity which is aim. Test validity is used for knowing whether every item is exactly to reveal a factor or indicator which will be analised. The way of testing instruments which is used by doing a factor analysis. Factor analysis can be done by correlating scored factor by scored total (Anshori and Iswati, 2009:83). If the correlation of every factor is positive and $> 0,3$ or more, it is strong construct and validity.

The researcher also uses content validity to ensure test validity. The objective of this research is testing grammar on conditional sentence that the researcher holds the validation with the teacher and the test given based on the curriculum 2013 of the eleventh students of SMKN 1 Jetis Mojokerto in the second semester.

The material of the test should be appropriate with material that the English teacher given. So, to conduct a testing of content validity, the researcher holds a consultation with the expert judgements. They are Gusti Nur Hafifa as supervisor, Waode Hamsia, S.Pd, M.Pd as a structure lecturer and Ary Kuntidiono S.Pd as English teacher of SMKN 1 Jetis Mojokerto.

Table 3.5.
The Validity of The Test

No	Name	Validity of the test		Date of validation
		Yes	No	
1.	Gusti Nur Hafifa, S.Pd, M.Pd	√	-	April, 19 th 2015
2.	Waode Hamsia, S.Pd,M.Pd	√	-	April, 19 th 2015
3.	Ary Kuntidiono, S.Pd	√	-	April, 27 th 2015

3.8.2. Reliability

Realibility refers to measure repeatedly delivering the same result, it means that the same population and same condition have the same result of measure. The reability of measuring instrument is consistency with which it measures (Anshori and Iswati, 2009:75).

Reability is tested by using formula of coefficient reability Alpha Cronbach because the data is scale assessment. Testing of realibility is done by the another sample of experimental group and control group that is tested before conducting pre-test and post-test. (Nunnally of Ghozali, 2006:42) states that the research instrument can be said a realiable if it has reliability coefficient or *alpha* > 0.6 or more. Here, is the scale intrepertation to measure the realibility of the test by using Alpha Cronbach as Triton in Sujianto (2009: 97):

Table 3.6.
Scale of Interpretation

Scale	Level of Reliability
0.00 – 0.20	Not reliable
> 0.21 – 0.40	Less reliable
> 0.41 – 0.60	Reliable enough
> 0.61 – 0.80	Reliable
> 0.81 – 1.00	Very reliable

3.8.3. Normality test

Normality test is basic requirement that should be fulfilled in parametric analysis. Before analysis towards the data, normality of the data should be tested first. It is intended to investigate whether the data is in normal distribution or not. In this case, the normality test used formula of Kolmogorov-Smirnov. The researcher uses the hypotheses for testing normality.

$$H_0 = \text{Data is in normal distribution}$$

$$H_1 = \text{Data is not in normal distribution}$$

In testing the hypotheses, the data is in normal distribution if H_0 is the data more than 0,05 (α : 5%), and if H_1 is the data less 0,05 (α : 5%) (Nurgiyantoro, 2004: 118).

3.8.4. Homogeneity Test

Homogeneity test is intended to know whether homogeneous or not. In this case, the homogeneity will be tested to the experimental group and control group that were used to collect the data. The data is gotten by the score of experimental group and control group pretest.

The prerequisite of homogeneity test is when F_{count} is bigger than F_{table} , so the variant is not homogen and when F_{count} is smaller than F_{table} , so it means that the variant is homogen.

3.8.5. T-test

T-test is used for knowing the result of the data whether there is different significance between experimental group and control group. Thus, it can be known the different effectiveness between those groups. The researcher uses paired sample T-Test through SPSS 16.0 to analyze the data. Here, the researcher uses the hypotheses to compare between t_{value} and t_{table} and the steps to analyze the data:

$H_0 =$ If the t_{table} is greater than t_{count} , it means that there is no significant difference between the students who are taught by using song lyric and the students who are not taught by using song lyric.

$H_1 =$ If the t_{count} is greater than t_{table} , it means that there is significant difference between the students who are taught by using song lyric and the students who are not taught by using song lyric.

The researcher uses the hypotheses to compare between t_{count} and t_{table} .

- Formulating the hypotheses. The hypotheses are in the form of H_0 and H_1
- Determining the value of t_{count} . It can be seen on the output of SPSS analysis

- Determining the value of t_{table} . It can be seen from statistical table in significant level $0.05 : 2 = 0.025$ (two tailed test) with degree of freedom (df) is $N-1$
- Determining the significant value based on the output of SPSS 16.0 analysis. In this case, the significant value should be lower than 5% significant level (<0.05)
- Determining hypotheses testing. Simply, the hypotheses testing are follows:
 - a. If $-t_{count} < -t_{table}$ and $sig < 0.05$, so, H_0 is rejected
 - b. If $-t_{count} > -t_{table}$ and $sig > 0.05$, so, H_1 is accepted
- Making conclusion
 If H_0 rejected, it means that there is no significant difference of the students' understanding on conditional sentence before and after being taught by using song lyric. while, H_1 is accepted, it means that there is significant difference of the students' understanding on conditional sentence before and after being taught by using song lyric.