

CHAPTER III

RESEARCH METHOD

A. Research Design

The researcher conducted the quantitative research. It was applicable to phenomena that can be expressed numerically (Khotari, 2004). This research used to prove and dismiss a theory. This method used to investigate the different parts of learning. The goal was to acquire a comprehension some of theories. It was made using numerical models and theories. Thus, quantitative research focused in parts of objectives estimation phenomena in society and investigation in conclusion realities and measurement the theory.

Experimental research measures the effect of one manipulated and controlled (Independent) variable to another (Dependent) variable (Nurhayati, 2018:39). It was an immediate trial variable, and test the speculation. The researcher used the experimental method in order to determine the effect of utilizing a flipped classroom.

The researcher used quasi experimental design in this research. The researcher took two groups in this research. There were experimental group and control group. Experimental class was taught using flipped classroom. The control class was taught using teacher centered method. According to Donald (2010), there were two categories of quasi experimental designs, they were pre-test and post-test.

B. Subject of the Study

1. Population

Population is the object that have some qualities and characteristics that are chosen to be learned by the researcher (Nurhayati, 2018:40). It is not just people in specific situation yet but also people that connect specific standards can also be examined. The population of research connected with the research. A study requires a large population to be used as a data source. In this study, the population was all students of class X in SMK MAARIF NU Jatirejo consisting of 10 classes.

2. Sample

Researcher concentrated on a group of population, it was known as a sample (Marczyk, 2005). The researcher can utilized as delegate of population to choose the research sample. The researcher separated the sample into two groups. The groups were experimental class and control class. The sample class was X-TKJ-1 (consist 30 students) and X-BDP-2 (consist 30 students).

3. Sampling

Purposive sampling was the procedure of determining a sample by selecting a subject based on specific purpose rather than level or area (Arikunto, 2010). The researcher used purposive technique to take the samples of this research. Purposive techniques include non-probability techniques that take sample based on purpose rather than randomly. The criteria were between the groups that will be a sample must have an equal cognitive level of the students. Thus, give sufficient data regarding students' ability to learn English, especially reading comprehension.

C. Variables

Variable is a key term in research (Nurhayati, 2018:40). The functional of variables were:

1. Independent variable

Flipped classroom is a teaching technique that utilizes video at night before the students come to the classroom to assist in understanding material.

2. Dependent variable

Students' reading comprehension on narrative text is the students' capability to comprehend a passage, especially narrative text regarding an entertaining story consisting of main idea, grammatical feature, and etc.

D. Research Instrument

Research instrument used to gather information for a research, for example observation forms, interview schedules, questionnaires and interview guides. A research instrument in quantitative research should be connected with the objectives of the research. The instrument question should be connected with the goals of the research. Thus, the researcher ought to be careful to developing the instrument of the research.

In this study, the researcher utilized 30 questions of pre-test and 30 questions of post-test. All of questions were multiple choice. There were the aspects of reading that can be utilized to test the reading ability (Brown, 2007). Based on the theory of Brown, (2007), it was the organization of the instrument.

Table 3.1 The Aspect of the Test for Pre-test and Post-Test

| No. | Aspect | Pre-Test | Post-Test |
|-----|--|----------------------------------|--|
| 1. | Main idea (topic) | 1, 25 | 11, 21, 27 |
| 2. | Expressions/idiom/phrases in context | 9, 14 | 18, 28 |
| 3. | Inference (implied detail) | 4, 13 | 4 |
| 4. | Grammatical features | 2, 3, 23, 30 | 13, 16 |
| 5. | Detail (Scanning for a specifically stated detail) | 5, 8, 11, 12, 16, 17, 22, 27, 28 | 1, 2, 3, 5, 6, 9, 12, 14, 15, 19, 22, 25, 29 |
| 6. | Excluding fact not written (unstated details) | 7, 18, 21, 26, 29 | 8, 10, 20, 26, 30 |
| 7. | Supporting idea | 20 | 17 |
| 8. | Vocabulary in the context | 6, 10, 15, 19, 24 | 7, 23, 24 |

E. Validity and Reliability Testing

1. Validity

Validity is an intergrated evaluative of how much experimental proof and theory support the sufficiency and propriety of deductions and activities in view of grades or different method of assessment (Teo, 2013). A test can be said valid if the data utilized calculate accurately that ough to be estimated in the study. A data was the score of the students. Those were the aspects:

a. Content Validity

Content validity is extent an estimating instrument gives satisfactory inclusion of the subject of the study (Khotari, 2004). It guarantees ensures that estimations are taken with things that suitable and delegate things that uncover the idea of the study. It instructed to students. Therefore, the researcher made the reading instrument test in view of the curriculum for the tenth grade of SMK MAARIF NU Jatirejo. The instrument was amended by the English teacher at SMK MAARIF NU Jatirejo to guarantee the correct istrument.

b. Construct Validity

Construct validity is most theoretical and complex (Khotari, 2004). A measurement should be connected with the functional meaning. Construct validity decipher an estimation idea. It centers on sort of test utilized to quantify the ability of students especially reading ability. The researcher verified the instument to the English teacher of

2. Reliability

The reliability is a file of how reliably a test estimates anything that it should quantify (Teo, 2013). Reliability is a degree of estimation test stays predictable behind rehashed try regarding similar circumstances. At the point when researcher produces steady results for the similar estimations, it is considered reliable. It cannot be reliable if the result is different. A test is variable as an estimating instrument that should be reliable, that is basis of reliability. In this research, the researcher used 20 students for the sample, in the same grade.

The researcher involved split-half reliability in this test, which included two rates from the students' reading comprehension score. The two result contrasted and the known reliability coefficients. If the computation results are close to one, it means high correlation. Correlation will be low if the result is 0. After trying out the instrument, the researcher used SPSS version 26. According to Sarwono (2015), suggested the aspect of reliability as follow:

Table 3.2 Aspect of Test Reability

| No | Score | Criteria |
|----|--|------------|
| 1. | If the Guttman Split-Half Coefficient $\geq 0,80$ | Reliable |
| 2. | If the Guttman Split-Half Coefficient $\leq 0,80$ | Unreliable |

In this study, the researcher conducted try out before carrying out research instruments. The results of the try out analyzed using SPSS 26. The result was as follows:

1. Pre-Test

Reliability Statistics

| | | | |
|--------------------------------|---------------------------|------------|-----------------|
| Cronbach's Alpha | Part 1 | Value | ,858 |
| | | N of Items | 15 ^a |
| | Part 2 | Value | ,644 |
| | | N of Items | 15 ^b |
| | Total N of Items | | 30 |
| | Correlation Between Forms | | |
| Spearman-Brown Coefficient | Equal Length | | ,879 |
| | Unequal Length | | ,879 |
| Guttman Split-Half Coefficient | | | ,866 |

a. The items are: soal_1, soal_2, soal_3, soal_4, soal_5, soal_6, soal_7, soal_8, soal_9, soal_10, soal_11, soal_12, soal_13, soal_14, soal_15.

b. The items are: soal_16, soal_17, soal_18, soal_19, soal_20, soal_21, soal_22, soal_23, soal_24, soal_25, soal_26, soal_27, soal_28, soal_29, soal_30.

2. Post-Test

Reliability Statistics

| | | | |
|--------------------------------|------------------|------------|-----------------|
| Cronbach's Alpha | Part 1 | Value | ,825 |
| | | N of Items | 15 ^a |
| | Part 2 | Value | ,788 |
| | | N of Items | 15 ^b |
| | Total N of Items | | 30 |
| Correlation Between Forms | | | ,775 |
| Spearman-Brown Coefficient | Equal Length | | ,873 |
| | Unequal Length | | ,873 |
| Guttman Split-Half Coefficient | | | ,873 |

a. The items are: soal_1, soal_2, soal_3, soal_4, soal_5, soal_6, soal_7, soal_8, soal_9, soal_10, soal_11, soal_12, soal_13, soal_14, soal_15.

b. The items are: soal_16, soal_17, soal_18, soal_19, soal_20, soal_21, soal_22, soal_23, soal_24, soal_25, soal_26, soal_27, soal_28, soal_29, soal_30.

F. Normality and Homogeneity Testing

1. Normality Testing

Normality testing was required to identify that the information follows a typical dissemination. There are two kinds of normaly testing, Kolmogorov-Smirnov and Shapiro-Wilk. Kolmogorov-Smirnov is for more than 50 samples and Shapiro-Wilk for less than 50 samples. These were the steps of normality:

- a. H_0 : The data are normally distributed
- b. H_a : not normally distributed

If the data was normally distributed so the normality testing said that H_0 was accepted and if the data was not normally distributed so the H_a was accepted. The significance level is 0.05. This study used Kolmogorov-Smirnov because this study used 60 samples. The researcher used SPSS version 26.

2. Homogeneity Testing

Homogeneity testing decides if the change of two samples from a similar population is homogeneous. The researcher utilized SPSS 26 to decide the sample of homogeneity of change score. The significance (α) is 0,05. As indicated by Stanislaus (2009), the accompanying fundamental choices were made in homogeneity testing:

- a. If the significance value $> 0,05$ then the data distribution is homogeneous
- b. If the significance value < 0.05 then the data distribution is not homogeneous.

G. Data Collecting Method

The quantitative data ought to be gathered through structured test. Test is a sequence of statements and the instrument used to quantify expertise, data, or ability (Arikunto, 2011). The researcher had to utilize a few tests to determine the capability. In view of the reviewing theory of Arikunto (2011), the reseacher used a tests in this research to collect the data. The procedures were:

1. Pre-test

A pre-test was regulated gathering before the treatments are applied.

2. Post-test

A pre-test was regulated gathering after the treatments are applied.

The pre-test was carried out prior to the researcher administering the treatments. The pre-test was given for the two groups, they were experimental and control groups to see the score of reading ability on narrative text. In the pre-test, the students answered some questions. It has 30 questions and all of the questions are multiple choice. The post-test was performed after the treatments done. The experimental class taught by using flipped classroom and control class used teacher-centered teaching method. It planned to decide the impact of the teaching technique. In the post-test, the students answered some questions. It has 30 questions and all of the questions are multiple choice.

H. Data Analysis

The data gathered to require normality testing in this study that the data normally distributed or not (Aryel, 2010). The data was from pre-test and post-test. It will be compared with check whether there any distinctions in scores when using flipped classroom technique to teach. The data gathered is quantitatively analyzed by the researcher. The researcher used quantitative data analysis in this research to analyze. The statistical method is used to analyze the quantitative data (Nurhayati, 2018:41). The researcher used statistical to investigate the quantitative data. The researcher used to decide whether there is a significant difference in scores after using the flipped classroom.

The data value obtained from the tests that have been done and analyzed using SPSS 26 with a significant level of 5%. The test

determined the result of the research, whether there was a difference between students who use or do not use flipped classroom strategy.