

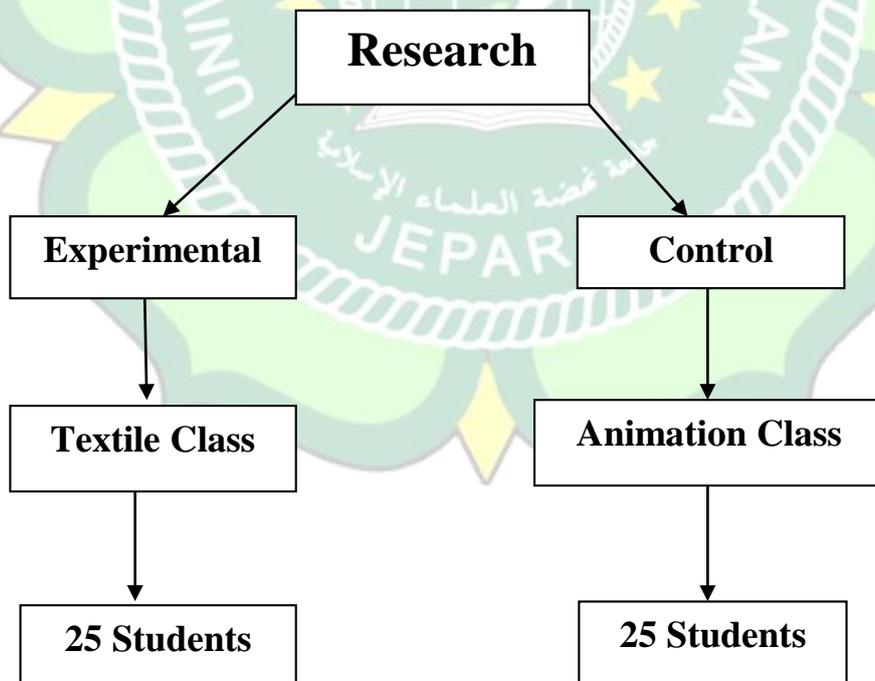
CHAPTER III

RESEARCH METHODOLOGY

This chapter reviews of research methodology that consists of setting of the research, population and sample, research design, research instrument, method of data collection, method of data analysis, hypothesis of statistic, and rubric assessment.

3.1 Setting of the Research

The research conducted at the eleventh grade students of SMKN 2 Jepara was located on Jl. RMP. Sosrokartono No.1 Jepara - 59415. The research was conducted in two classes, namely Animation Class and Textile Class.



3.2 Population and Sample

The population in eleventh grade students of SMKN 2 Jepara in the 2017/2018 on academic years is 350 students. The researcher took two classes for sample which consisted of 25 students. Each class there are Textile as an experimental group and Animation for control group.

3.3 Research Design

The researcher used experimental in this research, especially quasi experimental research. The reason is that researcher wants to know the significance of using the Project-Based Learning method in teaching writing narrative text. Arikunto (2013: 9) states that experiment is a way to find out the correlation of cause and effect between two factors raised by the researcher in a goal to reduce or eliminate distracting factor.

The experimental design in this research is the development of a quasi-experimental design that is difficult to imply. This design has a control group, but that can't fully function to control external variables that affect the implementation of treatment. Quasi Experimental Design is used because it is actually difficult to get the control group used for research. (Mubarok, 2015)

Quasi Experimental Design

Class	Pre-Test	Variable	Post-Test
Experimental	O1	X	O2
Control	O3	-	O4

The explanation is:

Textile : The Experimental group

Animasi : The Control group

O1 and O3 : The pre test administered before the treatment

X : The independent variable or using PBL

O2 and O4 : The post test administered after the treatment

In this research, students in the experimental class was learning writing narrative text using the Project-Based Learning method while control class did not use Project-Based Learning method in teaching. The researcher needed four meetings to collect data through pre-test, treatments, and post-test. The process in experimental research can be presented as in the table below:

There are two variables in this research. Writing narrative text is a dependent variable and Project-Based Learning is an independent variable.

Experimental Class	<p>Meeting 1 : Pre test</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher divided the students into 7 groups and every group consists of 5 students. 2. Teacher explained about writing narrative text. 3. Teacher asked and answered to students in understanding narrative text material. 4. Teacher gave pre-test about narrative text to students before learned the material.
	<p>Meeting 2 : Treatment</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher divided the students into 7 groups and every group consists of 5 students like a last meeting. 2. Teacher gave the material about narrative text.

3. Teacher gave instruction to students to discuss the material that they have taught.
4. Teacher gave instruction to students for made a short narrative text.

Meeting 3 : Treatment

Activity :

1. Teacher made some groups like a last meeting.
2. Teacher gave some reflexes and example about narrative text.
3. Teacher gave instruction to students for made a narrative text that appropriate to the procedure in writing narrative text.
4. Teacher gave themes for writing narrative and every group can chose one of themes.

Meeting 4 : Post-Test

Activity :

1. Teacher made some groups like a last meeting.

	<ol style="list-style-type: none"> 2. Teacher asked the students to make narrative text that is to measure their knowledge of narrative text. 3. Teacher gave post-test about narrative text
Control Class	<p>Meeting 1 : Pre test</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher explained about narrative text. 2. Teacher asked and answered about narrative text material with students. 3. Teacher gave pre-test about narrative text to students before giving the material.
	<p>Meeting 2 : Treatment</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher gave the material about narrative text. 2. Teacher gave instruction to students for searching the material. 3. Teacher gave instruction to students for made a short narrative text.

	<p>Meeting 3 : Treatment</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher gave some reflexes and example about narrative text. 2. Teacher gave instruction to students for made narrative text but appropriates with the procedure in writing narrative text.
	<p>Meeting 4 : Post-Test</p> <p>Activity :</p> <ol style="list-style-type: none"> 1. Teacher gave post-test to made a narrative text that is to measure their knowledge of narrative text.

3.4 Research Instrument

Test was used in this research. A test, in simple terms, is a method of measuring a person's ability knowledge, or performance in a given domain. It is an instrument, a set of techniques, procedures, or items that require performance on the part of test-taker (Mubarok, 2015:59). The test is divided into two test, they are pre-test and post-test in the experiment and control class. A pre-test is a form of a question, which the teacher asked the students before

teacher begin the learning process. The question asked is the material that was taught on that day (new material). Post-test is a form of a question given after the lesson/material has been delivered. The post-test is the final evaluation when the material that has been taught on that day has been awarded which a teacher gives a post-test with the intention of whether the student has understood the material that has been given the question is usually done by the teacher at the beginning of the lesson.

Validity is very important to measure in the test. Validity is the extent to which the interpretations of the results of a test are warranted, which depends on the particular use the test is intended to serve. The responsiveness of the measure to change is of interest in many of the applications in health care where improvement in outcomes as a result of treatment is a primary purpose of the research (Kimberlin, 2008).

Instruments in the form of test to measure learning outcomes must have content validity. Test that has content validity is the tests can measure competencies developed with indicators and learning materials. Examine content validity by comparing the contents of the instrument with the competencies developed and the subject matter studied.

Content validity includes all achievements in indicators to develop competence. In preparing the instrument, it must be guided by the syllabus, that is basic competencies, indicators and learning objectives. If the instrument does not match the indicator, the instrument can be invalid (Widoyoko, 2018:233).

3.5 Method of Data Collection

Based on the research, the researcher collects data by using quantitative data. The quantitative data derived from the students' obtained score of the pre-test and post-test. Experimental and Control class are given pre-test and post-test to make a paper for every student. In the experimental class in learning process divide students' to make some group into 7 groups and every group consist of 5 students.

a. Pre-test

1. Please write narrative text by following the topic!

b. Post-test

1. Please write narrative text by following the topic!

3.6 Method of Data Analysis

Data analysis is the process of systematically applying statistic and logical techniques to describe and illustrate, condense, recap evaluate data. Data analysis is an activity in reflecting the data of Classroom Action Research. Data analysis is used to answer the research question stated in problem statement (Mubarok, 2015:35)

In this study, there are two kinds of test, pre-test and post. The result pre-test and post test would be analyzed by the formula as follow:

a) Mean

To find out the rate of average of pre-test (x) and the rate of post-test (y), the formula is:

$$M_1 = \frac{\Sigma x}{N_x} \quad (\text{Experimental})$$

$$M_2 = \frac{\Sigma y}{N_y} \quad (\text{Control})$$

Explain:

M_1 : Mean score of post-test experimental

M_2 : Mean score of post-test control

N : Total Number of respondent (students)

b) Deviation Standard

To find out the deviation standard, the writer will use the formula:

$$SD_1 = \sqrt{\frac{\Sigma X^2}{N_x}} = \text{Experimental}$$

$$SD_2 = \sqrt{\frac{\Sigma Y^2}{N_y}} = \text{Control}$$

c) Determining Standard Error Mean of variable

$$SE_{M1} = \frac{SD_1}{\sqrt{N-1}} = \text{Experimental}$$

$$SE_{M2} = \frac{SD_2}{\sqrt{N-1}} = \text{Control}$$

d) Determining Standard Error of different Mean of variable X and Mean of variable Y

$$SE_{M_1-M_2} = \sqrt{SE_{M_1}^2 + SE_{M_2}^2}$$

e) T-test Calculation

To find out significance between pre-test and post-test by calculate t-count, the writer will use this formula in order to analyze the effectiveness of using Project-Based Learning in the learning process, the formula is:

$$t_0 = \frac{M_1 - M_2}{SE_{M_1 - M_2}}$$

Where,

M_1 : Mean of variable X (experimental class)

M_2 : Mean of Variable Y (control class)

SE : Standard Error

X : Experimental Class

Y : Control Class

N : Students

t_0 : t observation

(Sudijono, 2006:314)

3.7 Hypothesis of Statistic

The hypothesis of statistic that will be used in this research is:

H_0 : $\mu_1 = \mu_2$

Ha : $\mu_1 \neq \mu_2$

Where :

Ho : Null hypothesis

Ha : Alternative hypothesis

μ_1 : Achievement of students' development in writing narrative text using Project Based Learning

μ_2 : Achievement of students' development in writing narrative text without using Project Based Learning

The assumption of the hypothesis is:

1. If $t_{\text{count}} > t_{\text{table}}$: Ho is rejected and Ha is accepted. That means there are have a significant difference between the student score using Project Based Learning and without using Project Based Learning in teaching writing narrative text.

($\mu_1 \neq \mu_2$)

2. If $t_{\text{count}} < t_{\text{table}}$: Ho is accepted and Ha is rejected. That means there are not have a significant difference between the student score using Project Based Learning and without using Project Based Learning in teaching writing narrative text. ($\mu_1 = \mu_2$)

3.8 Rubric Assessment

Rubrics are rating scales-as opposed to checklists that are used with performance assessments. They are formally defined as scoring guides, consisting of specific pre-established performance criteria, used in evaluating

student work on performance assessments. Rubrics are typically the specific form of scoring instrument used when evaluating students' performances or products resulting from a performance task. There are two types of rubrics: holistic and analytic. A holistic rubric requires the teacher to score the overall process or product as a whole, without judging the component parts separately. In contrast, with an analytic rubric, the teacher scores separate, individual parts of the product or performance first, and then sums the individual scores to obtain a total score (Mertler, 2005:1). Based on the background of the study, the researcher uses holistic rubric assessment in teaching writing narrative text.

Score	Description
4	<ul style="list-style-type: none"> a. Content: Perfect idea, focused and appropriate topic b. Vocabulary: The writing has very many kinds variation words c. Organization :They can write the narrative text in the perfect order appropriate to generic structure d. Mechanic: No spelling errors at all, neat and clear, and careful in punctuation
3	<ul style="list-style-type: none"> a. Content : Good idea, focused and appropriate topic b. Vocabulary: The writing has many kinds variation words

	<p>c. Organization : They can write the narrative text in the good order appropriate to generic structure</p> <p>d. Mechanic: Not many mistakes spelling errors, neat and clear, and careful in punctuation</p>
2	<p>a. Content : Enough good idea, browsing but just take the core of story internet focused and appropriate topic</p> <p>b. Vocabulary : The writing has enough kinds variation words</p> <p>c. Organization : They can write the narrative text in the enough good order appropriate to generic structure</p> <p>d. Mechanic : Some spelling errors, not neat and clear, and not careful in punctuation</p>
1	<p>a. Content: bad idea, browsing internet, not focused and not appropriate topic</p> <p>b. Vocabulary : The writing hasn't kinds variation words</p> <p>c. Organization : They can't write the narrative text in the order appropriate to generic structure</p> <p>d. Mechanic : Spelling errors at all, not neat and clear, and not careful in punctuation</p>

Final score : score x 25 =

Max score : 100

