

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter the researcher present research method including research design, population and sample of the study, variable of the study, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method, and data analysis.

#### **A. Research Design**

This research used experimental research design. According to Creswell (2003), experimental research is most appropriate for answering a research question about the effect of a treatment. The essential feature of experimental research is that investigators deliberately control and manipulate the conditions which determine the events, in which they are interested, introduce an intervention and measure the differences that it makes. An experiment involves making a change in the value of one variable – called the independent variable and observing the effect of that change on another variable – called the dependent variable (Louis, 2007:291).

To investigate the effectiveness of Schoology in teaching writing and to enhance students' writing in narrative text the researcher use one of the type of experimental research design that is pre-experimental design. Furthermore, conforming to why using pre-Experimental research because there is no visible to have random assignment to determine the sample of the research. In this case the

teacher/school only provided one class for the researcher to conduct this study. It means that, the researcher does not have an authority to choose the sample. In the one group pre-test and post-test design, a single group was measured or observed. The requirement of this design is stated by Donald (2010: 302), pre-experimental design does not have random assignment of subject to groups or other strategies to control extraneous variable.

In this case the independent variable is the use of Schoology and the dependent variable is students' achievement in narrative text, independent variable influences the dependent variable. To know the result whether the dependent is influenced well positively, the researcher use pre-test and post-test to measure that. The design of the research can be summarized as follows:

**Table 3.1: The procedure of the One Group Pretest-Posttest Design**

Pre-test	Treatment	Post-test
Y1	X	Y2

X : Schoology Learning Management System Platform treatment

Y1 : Students' achievement on writing narrative text before taught by using Schoology Learning Management System Platform

Y2 : Students' achievement on writing narrative text after taught by using Schoology Learning Management System Platform

Referring to the table 3.1 above, the procedure of pre-experimental research that use one-group pre-test and posttest design in this study are described as follows:

1. Administering a pre-test (Y1) with a purpose of measuring writing narrative text of Second grade students at SMAN 1 Tulungagung before applying treatment.
2. Applying the experimental treatment (X) teaching writing narrative text by using Schoology Learning Management System Platform to the second grade students at SMAN 1 Tulungagung.
3. Administering a post-test (Y2) with a purpose of measuring writing narrative text of eight grade student at SMAN 1 Tulungagung after applying treatment.

## **B. Population and Sample**

To make the study more feasible, it was important for the writer to know the research area where the research was conducted. This research was conducted at SMAN 1 Tulungagung. This research was intended for second grade student of SMAN 1 Tulungagung in academic year 2017-2018.

### **1. Population**

Population is all that subject of this study should is investigated. Population is all member of well defined class of people, events, or object (Ary et al, 2010:148). According to Nawawi (2012), population is the whole research objects which include human, things, animals, plants, indications, test value or events as data sources which have particular characteristics in a research. Population not only the

total in the object or subject where study, but also all of the character that belongs by subject or object. In this research the population was all of second grade student at SMAN 1 Tulungagung in period 2017/2018 which consists of 240 students and those are divided into seven classes. Four class of Sains and three of class Socials. It can be seen in the table 3.2 below:

**Table 3.2 Population of Research**

no	Class	Gender	
		male	Female
1	XI IPA 1	11 students	25 students
2	XI IPA 2	11 students	25 students
3	XI IPA 3	11 students	25 students
4	XI IPA 4	11 students	25 students
5	XI IPS 1	16 students	16 students
6	XI IPS 2	18 students	14 students
7	XI IPS 3	17 students	15 students
Total students		240 students	

## 2. Sample

In selecting the sample of the study, the researcher used purposive sampling technique. According to Cohen et al.,(2007) in purposive sampling technique, sample is satisfactory to specific need. As its name suggest, the sample has been chosen for a specific purpose. The researcher took XI 3 IPS as the sample of the research because the researcher was given the suggestion by English teacher of SMAN 1 Tulungagung to conduct this research in this class. This class has low achievement in writing. Besides, the students of this classroom use laptop and smart phone in daily learning activity. The fact supported this research since

Schoology only can be accessed through class use laptop or smart phones that connect to internet.

More clearly, in XI 3 IPS class, there were 32 students consisting of 17 males and 15 females as the samples of the study. Those 32 students were given a pretest, treatment, and posttest during the research.

### **C. Research Instrument**

Any scientific study needs essential instruments to gather the required data. The selection and construction of appropriate, valid and reliable research instrument are very essential step a scientific investigation. Instrument is a means for gathering data and any equipment used to collect data (Arikunto, 2010:262). As an experimental research, the instrument used in this research was writing test. According to Ary et al (2006:201) test is a set of stimuli presented to individual in order to elicit responses on the basis of which a numerical score can be assigned.

There were two kinds of test in this study, those were pre-test and post-test. Pre-test was intended to measure students' writing achievement in narrative text before the treatment given. While, post-test was to measure students' writing achievement in narrative text after treatment given. The tests were in the form of subject test is writing narrative text to measure students' writing achievement in narrative text. Both of the tests have deferent on the topics but they have similarity on the type of narrative text. The type used on this test was legend story.

Furthermore, the writer gave score to the students' writing by using scoring guide of writing according to Cohen (1994:328-329) in the following below:

**Table 3.3: Scoring guide of writing**

<b>Aspects</b>	<b>Scores</b>	<b>Indicators</b>
Content	5 (Excellent)	Main ideas, started clearly and accurately, change of opinion very clear
	4 (Good)	Main ideas stated fairly clearly and accurately, change of opinion relatively clear
	3 (Average)	Main ideas somewhat unclear and inaccurate, change of opinion somewhat weak
	2 (Poor)	Main ideas not clear or accurate, change of opinion weak
	1 (very Poor)	Main ideas not all clear or accurate, change of opinion very weak
Organization	5 (Excellent)	Well organized and perfectly coherent
	4 (Good)	Fairly well organized and generally coherent
	3 (Average)	Loosely organized but main ideas clear, logical but incomplete sequencing
	2 (Poor)	Ideas disconnected, lacks logical sequencing
	1 (Very Poor)	No organization, incoherent
vocabulary	5 (Excellent)	Very effective choice of words and use of idioms and word forms
	4 (Good)	Effective choice of word and use of idioms and word forms
	3 (Average)	Adequate choice of words but some misuse of vocabulary, idioms and word forms

	2 (Poor)	Limited range, confused use of words, idioms and word forms
	1 (Very poor)	Very limited range, very poor knowledge of words, idioms and word forms
Grammar	5 (Excellent)	No errors, full control of complex structure
	4 (Good)	Almost no error, good control of structure
	3 (Average)	Some errors, fair control of structure
	2 (Poor)	Many errors, poor control of structure
	1 (Very Poor)	Dominated by errors, no control of structure
Mechanics	5 (Excellent)	Mastery of spelling and punctuation
	4 (Good)	Few errors in spelling and punctuation
	3 (Average)	Fair number of spelling and punctuation errors
	2 (Poor)	Frequent errors in spelling and punctuation
	1 (Very Poor)	No control over spelling and punctuation

Score:

The total number gotten x 100 = n

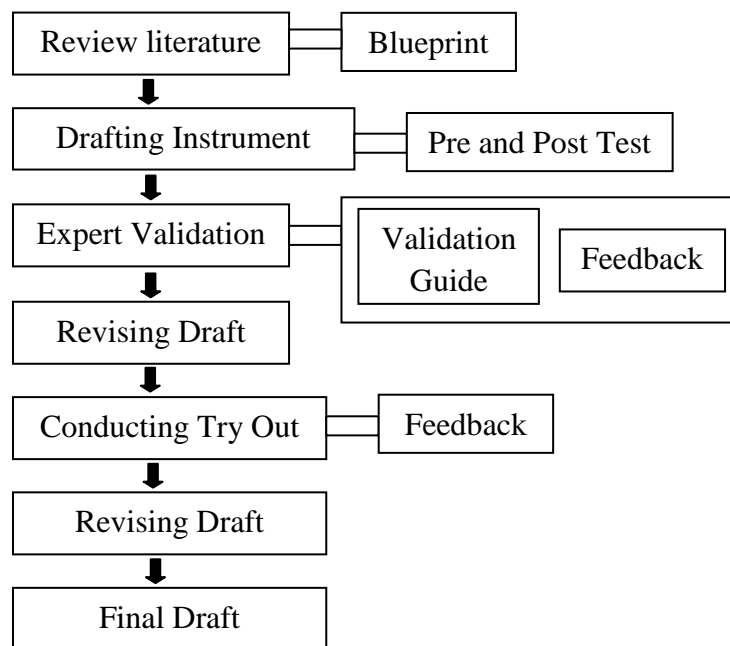
The maximal score

#### D. Validity and Reliability Testing

To gain valid result, there are two important characteristic that every measuring instrument should go through a process of validity and reliability check.

In this research ensured that the instrument (test) was valid and reliable by doing validity and reliability testing. The way to make valid and reliable instrument can be figured as the table 3.4 below:

**Figure 3.4 Process in making valid and reliable instrument**



Based on figure 3.4, the first step to get validity and reliability of the instrument is the researcher review the book and syllabus to draft the test. After drafting the test (pre and post test), the researcher shows both of the tests to expert validator to get feedback by considering with the validation guide. Then, the researcher revises the draft of the tests agree with the feedback given. Next, the researcher conduct the Try out to the test to students in different class as the



sample to get feedback from students. The class is conducted in XI IPS 2. The last, the researcher revises the test again after getting input or feedback from the Try out and based on that term the researcher get final draft to test to XI IPS 3 as sample of population of this research.

### **1. Validity**

Validity is measuring what it is designed to measure. In language testing Brown (2004) defines validity as the extent to which inference made from assessment result are appropriate, meaningful, and useful in terms of the purpose of assessment.

These are four types of validity; 1) Content validity, 2) Criterion related validity, 3) Construct validity, 4) Face validity. In this researcher, to measure whether the test has a good validity, the researcher analyzed the test from content validity and construct validity.

#### **a. Content validity**

Lodico et al. (2006:93) stated that content validity is composed of two items of validity: sampling validity and item validity. Both sampling validity and item validity involve having experts examine items that make up the instrument.

Content validity is correspondnce between curriculum objectives and objectives being assesed. The instrument in this research achieved content validity if the test is designed based on core competence and basic competence. The researcher will conduct consultation with the expert as the way to validate the test that has been set up.

**Table 3.4: main competence and Basic Competence in Curriculum of 2013**

Core competence	Basic competence
3. Understanding, implementing, analyzing factual, conceptual, and procedural knowledge based on the curiosity towards science, technology, art, culture, and humanity with the knowledge of. humanism, nationalism, and civilization related to the cause of phenomena and events, and implementing the procedural knowledge in a specific field according to the skill and interest to overcome the problem	3.14 Analyzing social function, text structure, and language features in narrative text related to the simple fable and legend story according to its context
4. Analyzing, thinking, and performing in both concrete and abstract field related to the development of what has been learnt in school individually, and being able to use the method based on the theory in science	4.18 Comprehend the purpose of simple written and spoken narrative text about fable and legend story according to its context

#### **b. Construct validity**

Construct validity is validity which show how far the tests are suitable with the theory that becomes a foundation on composing those tests. Construct validity deals with the relationship between a test and a particular view of language and language learning (Johnson, 2001: 303). In this research, the test had high construct validity since it contained prompt in form of guided questions

to measure students' skill in writing narrative text. See the construct of validation in the term of blue print on appendix 3.

**c. Face validity**

A test is said to have face validity if it measures what is supposed to measure. Face validity is hardly a scientific concept that is very important. A test which does not have face validity may not be accepted by test takers, teachers, educations, authorities or employers. In this test, there are some aspects that are consideration from this test to make a good test based on the validity.

- a. The instruction must be clear for the students
- b. the topic must be familiar with the students
- c. Time allocation must be adequated. The teacher gives about 60 minutes to write an essay of narrative text.

**2. Reliability**

Based on Harrison in Johnson (2001) says that the reliability of a test is its consistency, dependability or fairness of scores resulting from administration of particular examination. Ary et al (2006:236) also defines reliability as the degree of consistency with which an instrument measures whatever it is measuring. Thus, it can be said that a reliable test is consistent.

Before giving pretest and posttest, the researcher made test to be tried out to the students to know how far the reliability of the instrument. It was done on Thursday, 12<sup>th</sup> April 2018 in the XI IPS 2 class. To find out the reliability of the score obtained either from the pretest or posttest, the researcher calculated two sets of score to get the correlations between them. The formula to find the

correlation was *Pearson Product-Moment* in IBM SPSS Statistics 20. Table 3.6 showing the statistical calculation of *Pearson Product-Moment* from IBM SPSS Statistic 20

**Table 3.5: Try-out's Result of Pre-test**

Pre-test Tryout		Post-test Tryout	
Rater 1	Rater 2	Rater 1	Rater 2
65	60	60	60
75	80	50	50
50	55	55	55
55	50	50	50
55	55	55	50
55	55	70	65
55	50	80	80
50	50	95	90
60	50	55	60
60	50	70	70
50	60	55	55
90	85	80	80
50	45	50	60
65	60	60	60
65	70	70	75

**Table 3.6: Reliability Pre-test**

**Correlations**

		Rater_1	Rater_2
Rater_1	Pearson Correlation	1	.874**
	Sig. (2-tailed)		.000
	N	13	13
Rater_2	Pearson Correlation	.874**	1
	Sig. (2-tailed)	.000	
	N	13	13

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A perfect correlation, either positive or negative, is respectively denoted with +1 or -1. Thus, closer to 1, the stronger correlation is. If it is closer to +1, it has strong positive correlation. On the contrary, if it is closer to -1, it has strong negative correlation. Referring to Table 3.6, it can be seen that the result of Pearson Correlation is 0.922. Thus, it indicates that the instrument had the strong positive correlation. The same way was also conducted to check the reliability of instrument in post-test. Table 3.7 shows the result of post-test's try-out gained from the two raters, followed by Table 3.7 showing the statistical calculation of *Pearson*

*Product-Moment* from IBM SPSS Statistics 20

**Table 3.7: Reliability Post-test**

		Correlations	
		Rater_1	Rater_2
Rater_1	Pearson Correlation	1	.950**
	Sig. (2-tailed)		.000
	N	16	16
Rater_2	Pearson Correlation	.950**	1
	Sig. (2-tailed)	.000	
	N	16	16

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the table above, it can be seen that the result of correlation coefficient in pre-test (try out) is 0.900 or close with 1 means there is perfect positive relationship between two variables. Those are means the instrument is reliable to be tested

## **E. Normality and Homogeneity Testing**

### **1. Normality Testing**

Normality test is used to test whether a variable is normal or not. Normal here means if the data have a normal distribution. The main reason of conducting normality testing in a research is that it is necessary for the researcher to know that the population or data involved in the research is in normal distribution. To test the normality of the data can use the *One Sample Kolmogorov-Smirnov* test with the provision that if *Asymp. Sig* > 0,050 the data were normally distributed.

- If the significant value > 0.050, it means that data distribution is normal
- If the significant value < 0.050, it means that the distribution data is not normal
- If the data distribution is normal, next the researcher goes to homogeneity testing

### **2. Homogeneity Testing**

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing using SPSS Statistics 16 is One-Sample Kolmogrov-Smirnov test by the value of significance (  $\alpha$  ) = 0.050. Before doing homogeneity testing, the researcher decides hypothesis in this homogeneity as follow:

$H_0$ : 1 variance ( Experimental group) are same.

$H_a$ : 1 variance (Experimental group) are different

There is also certainty in taking decision of homogeneity testing, as follow: The value of significance  $> 0.050$ , so  $H_0$  is accepted means that the data of sample has same variance.

## **F. Data Collecting Method**

Data collection method is an important aspect of any type of research study. It can be defined as the various methods that have been adopted by an organization to analyze the accuracy of the data collected. In this research, the data was collected in three steps:

### **1. Pre-test**

Pre-test refers to a measure or test given to the subject prior to the experimental treatment. This aims to know the basic competence and their earlier knowledge before they get the treatment in writing narrative text. At the first meeting, the researcher gave pre-test to the students. It was done on Thursday, 12<sup>th</sup> April 2018. The pretest is writing in form of narrative text with the theme “LEGEND STORY” that decided by the researcher. After finishing the test or student work, the researcher used scoring rubric to calculate the score of pretest. The aim of calculating is to know the result of pre-test before being taught by using Schoology Learning Management System or the treatment.

## **2. Posttest**

Post-test is given to the students to investigate and measure the development their achievements in writing Narrative text after being taught by using Schoology Learning Management System. A Post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after treatment (Creswell, 2008:301). Post-test had done on Thursday, 26<sup>th</sup> April 2018. In that date, the researcher came to eleven grade again and asked them to write an essay in type of narrative text on their Schoology account. They may choose one of the topics that was given by the teacher. The number of students who got post-test was completely 32 students. After finishing the test or students' work, the researcher used scoring rubric to calculate the score of post-test. The aim of calculating is to know the result of post-test after being taught by using Schoology Learning Management System

### **Data analysis**

In managing and analyzing the data collected, the researcher use quantitative data analysis by using statistical technique. The analysis is used to find the significant difference of the students' writing achievement before and after using Schoology.

Analyzing data is a process of analyzing the acquired from the result of the research. The data which is needed in this research is students' achievement about narative text of the second grade students of SMAN 1 Tulungagung in the academic year 2017-2018 before and after using Schoology Learning



Management System Platform. To analyze the data, the researcher used Paired Samples Test in IBM Statistics 16.0. If the result of t-table was bigger than t-count at the level of significance 0.05, the null hypothesis could not be rejected indicating that Schoology was not effective on the students' writing achievement in narrative text. By the contrast if t-count was bigger than t-table at the level of significant 0.05, the null hypothesis could be rejected indicating that Schoology was effective on students' writing achievement in narrative text.