

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter presented the research method. It focused on the method used in conducting this study. The decision covers research design, population and sample, research instrument, validity and reliability testing, data collection method, and data analysis.

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

The research approach used by researchers is the quantitative approach. Where quantitative approach is research data in the form of figures and analyzed with analysis statistics to seek answers from the formulation of a research problem. As for the methods used by researchers is the experimental method. . The experimental research is a scientific investigation in which the researcher manipulates one or more independent variable, control any other relevant variables, and observe the effect of the manipulation on the variables (Ary, 2002:276).

This study is classified as pre experimental design because it has no control variable. In other words, in this study the writer just puts one group pretest posttest in one of class at firts grade Mts Darul Falah Bendiljati, Sumbergempol, to see the result of the treatmet. In one group pre test-post test design usually involves three steps: (1)administering a pretest measuring the dependent variable, (2) applying the experimental treatment X to the subjects, and (3) administering a

posttest, again measuring the dependent variable (Ary, 2002:304). The pre experimental design describes in the following table:

**Table 3.1. The Table of Diagram One Group Pretest-Posttest Design**

A Diagram of One Group Pretest- Posttest Design:

Pre test	Treatment (Independent variable)	Post test
$Y_1$	X	$Y^2$

A variable is a general class of objects, events, situations, characteristics and attributes that are of interest to the researcher (Balnaves and Caputi, 2001:46). The variables there are two variables of the research. The dependent variable and independent variable.

#### 1. Independent Variable

Independent variable is a variable which influence dependent variable, in order words independent variable is causes variable. In this research independent variable is nursery rhyme video.

#### 2. Dependent Variable

Dependent variable is the consequence of or dependent variable upon antecedent variables. The dependent variable in this research is the students' vocabulary mastery.

In this study, the procedures of experimental research that use One group pretest-posttest design are:

1. Administering a pretest before applying strategy with a purpose of measuring vocabulary mastery of second grade at MTs Darul Falah Bendiljati Sumbergempol
2. Applying the experimental treatment teaching vocabulary by using nursery rhyme video to the second grade of MTs Darul Falah Bendiljati Sumbergempol.
3. Administering a posttest measuring vocabulary achievement of second grade of MTs Darul Falah Bendiljati Sumbergempol.

In the application of experimental treatment is evaluated by comparing the pretest and posttest scores. The reasons the researcher chooses experimental research because this research design is simple. We can use one class to carry out research and use two treatments. The effectiveness of the strategy is known from differentiate score between pre-test and post-test, if the post-test score higher than pre-test score the strategy is effective.

## **B. Population, Sample and Sampling**

### **1) Population**

Population is all of subject in research that before founding from the interesting researcher to the region that occupy the subject. More technically, the population is a sample space of elementary event. Another way to think of the population is a set of units from which the researcher will sample. The units need not to be restricted to people; researchers may be interested in animals or objects (Wampold, 1990:84)

The population is totality samples or research subjects. The populations in this research are all students of class VIII MTs Darul Falah Bendiljati, Sumbergempol. The number of population 136 students consisted of for classes; each class consisted of 32-36 students.

## **2) Sample**

Sample is part or representative of population that will be research (Arikunto, 2013: 174). In this study, the researcher took the VIII-A class as a sample of this research. This class consisted of 32 students of first grade at MTs Darul Falah Bendiljati Sumbergempol. The sample consisted of 17 boys and 15 girls.

## **3) Sampling**

The technique of sampling or sampling technique used in this research in purposive sampling. Purposive sampling is a sampling technique with particular consideration (Sugiyono, 2011). Can also be interpreted determine the sample with particular consideration that deemed to provide the data to the fullest.

Often many restrictions that prevent researchers took samples at random (random). So if using random sampling (random sampling), will complicate the researcher. By using purposive sampling, the expected criteria for samples obtained completely in accordance with the research to be conducted.

Choosing the sample is based on purposive sampling depends on what criteria are used. So first determined what criteria samples taken researchers took samples of class VIII. The researcher choose the class VIII-A at the sample

because among other classes the students of the class VIII-A had average proficiency.

### **C. Research Instrument**

The researcher used one kind of instrument to do this research, it is vocabulary test. The aim of using test is to know whether students are successful or not in teaching English vocabulary by using nursery rhyme video. The material of the test will be taken from English book and other resources to add more vocabularies which related to their subject and based on Junior High School curriculum.

The researcher applied two kinds of test, there were pre-test and post-test. The tests form of multiple choice test and match word with picture and suitable meaning. The items for pre-test consist of 20 questions. Pre-test is taken before doing an experimental study or before teaching English vocabulary by using nursery rhyme video. The kinds of test are 10 items for multiple choice test and 10 items for match the words with picture and suitable meaning. After doing pre test and get the result, the researcher doing the treatment, teaching English vocabulary by watching and listening nursery rhyme video. After doing treatment the researcher conduct post-test, its taken after doing an experimental study or after teaching English vocabulary by using nursery rhyme video by the same format test of pre-test.

## **D. Validity and Reliability Testing**

In quantitative research is always depends on measuring instrument that used in research, to measure the instrument through two concepts that must understand when the researcher measuring test. They are validity and reliability.

### **1. Validity**

Validity is the degree to which a test measure what it is supposed to measure. Ary, Jacobes and Sorensen (2010: 224-225) states that validity is the most important consideration in developing and evaluating measuring instruments. It is the extent to which inferences made from assessment result are appropriate, meaningful, and useful in terms of the purpose of the assessment. A test should test what the writer wants to test. There are four different types of validity; they are content, construct, concurrent; and predictive. This research measure test to be a good validity by analyzed the test from content validity and construct validity.

- a. Content validity is a kind of validity which depends on careful analysis of the language being tested and particular test. Test content must be seen by the expert that can be covered of all subjects in content area. L.R. Gay (1992: 156-157) states that content validity is the degree to which a test measures an intended content area. A test with good content validity adequately samples the appropriate content area. So, content validity is appropriate with the instrument that used the researcher because it correspondence between curriculum objectives and objectives being assessed. The researcher made vocabulary test which consist of multiple choice and match word with picture and suitable

meaning. In this test, the students' are asked to answer the test to measure their vocabulary achievement.

- b. Construct validity is testing that done to measure the behavior of students. Brown (2004:25) mentioned that a construct is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception. Based on the theory above, in the test, the researcher asked the students to answer the question based on recount text to measure to the students' vocabulary mastery and fulfill the construct of vocabulary test and therefore valid in the term of construct validity.

## 2. Realibility

Reliability is a necessary characteristic of any good test for it to be valid at all and test must be reliable as measuring instrument. The researcher gives test 20 questions for students of MTs Darul Falah Bendiljati Sumbergempol to know the reliability of test.

The researcher used KR-20 formula to measure the test to be a reliable, most of them used this formula because not crucial and requires test administration only once (Fraenkel and Wallen, 2005:156)

### KR-20 Formula

$$r_{11} = \left[ \frac{n}{n-1} \right] \left[ \frac{s_t^2 - \sum p1-q1}{s_t^2} \right]$$

where,

$r_{11}$  = reliability coefficient

$n$  = number of test items

$s_t^2$  = standard deviation

p1 = the right response

q1 = the wrong response

The researcher found the result of test to know the reliability of students' tryout. After knowing the result of pretest and posttest, the researcher can find mean and the standard deviation to know the reliability of the students score in the tests. This way to seen the result the realibility of the test. It can be reliable or no.

Based on the coefficient of correlation, the class of reliability test can show in the criteria of coefficient of correlation below:

**Table 3.2. The Table Of Coofesien And Correlation Criteria**

1.	Very high	Between 0.09 and 1.00
2.	High	Between 0.70 and 0.89
3.	Sufficient	Between 0.50 and 0.69
4.	Low	Between 0.30 and 0.49
5.	Very low	$\leq 0.30$

Therefore, it can be inferred that both the test have a high scores of reliability. In try out test, the researcher asks the students to answer the questions for pre test and post test as follow:

**Table 3.3. The preparatory to Compute The Standard Deviation**

1. Pre-test

No.	Name	Xt	Xt <sup>2</sup>
1	AY	15	225
2	AP	16	256
3	AAS	17	286



4	AI	15	225
5	AZK	12	144
6	AM	15	225
7	ALS	13	169
8	DAS	14	196
9	DAR	14	196
10	EM	18	324
11	FI	14	196
12	FKS	14	196
13	KM	16	256
14	LSK	12	144
15	MAA	11	121
16	MAN	13	169
17	MBK	10	100
18	MFI	12	144
19	MS	10	100
20	MAH	12	144
		$\sum xt = 273$	$\sum xt^2 = 3816$

**Table 3.4. The preparatory to compute the standard deviation**

2. Post-test

No.	Name	Xt	Xt <sup>2</sup>
1	AY	18	324
2	AP	17	286
3	AAS	18	324
4	AI	16	256
5	AZK	20	400
6	AM	15	225
7	ALS	17	286
8	DAS	19	361
9	DAR	17	286
10	EM	20	400
11	FI	16	256
12	FKS	17	286
13	KM	18	324
14	LSK	15	225
15	MAA	15	225
16	MAN	14	196
17	MBK	13	169
18	MFI	13	169

19	MS	14	196
20	MAH	13	169
		$\sum xt = 325$	$\sum xt^2 = 5363$

**Table 3.5 The Result of Standart Deviation**

**→ Frequencies**

[DataSet0]

**Statistics**

		pre	post
N	Valid	20	20
	Missing	0	0
Mean		13.65	16.25
Median		14.00	16.50
Mode		12 <sup>a</sup>	17
Std. Deviation		2.207	2.221
Sum		273	325

a. Multiple modes exist. The smallest value is shown

**pre**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	2	10.0	10.0	10.0
	11	1	5.0	5.0	15.0
	12	4	20.0	20.0	35.0
	13	2	10.0	10.0	45.0
	14	4	20.0	20.0	65.0
	15	3	15.0	15.0	80.0
	16	2	10.0	10.0	90.0
	17	1	5.0	5.0	95.0
	18	1	5.0	5.0	100.0
Total		20	100.0	100.0	

**post**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 13	3	15.0	15.0	15.0
14	2	10.0	10.0	25.0
15	3	15.0	15.0	40.0
16	2	10.0	10.0	50.0
17	4	20.0	20.0	70.0
18	3	15.0	15.0	85.0
19	1	5.0	5.0	90.0
20	2	10.0	10.0	100.0
Total	20	100.0	100.0	

Therefore, it can be inferred that both the test have a high scores of reliability. The reseacher using Microsoft Excel to find the realibility result, as follows:

### 3.6 The table to compute the reliability by using Kuder Richardson formula (KR-20)

Item	Np	P1	Nq	Q1	P1Q1
1	15	0,7	5	0,3	0,21
2	16	0,7	4	0,3	0,21
3	17	0,65	3	0,35	0,22
4	15	0,8	5	0,2	0,16
5	12	0,7	8	0,3	0,18
6	15	0,8	5	0,2	0,16
7	13	0,55	7	0,45	0,24
8	14	0,75	6	0,25	0,18
9	14	0,65	6	0,35	0,22
10	18	0,7	2	0,3	0,18
11	14	0,65	6	0,35	0,22
12	14	0,7	6	0,3	0,21
13	16	0,7	4	0,3	0,18
14	12	0,7	8	0,3	0,18
15	11	0,65	9	0,35	0,22
16	13	0,65	7	0,35	0,22
17	10	0,55	10	0,45	0,24
18	12	0,6	8	0,4	0,24
19	10	0,8	10	0,2	0,16
20	12	0,4	8	0,6	0,24

				$\Sigma P1Q1=$	<b>3,97</b>
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Therefore, the reliability is:

$$r_{11} = \left[ \frac{n}{n-1} \right] \left[ \frac{s_t^2 - \Sigma p1 - q1}{s_t^2} \right]$$

$$= \left[ \frac{20}{20-1} \right] \left[ \frac{48,71 - 3,97}{48,71} \right]$$

$$= \left[ \frac{20}{19} \right] \left[ \frac{44,74}{48,71} \right]$$

$$= [1,05] [0,93]$$

$$= 0,97$$

**Table 3.7 The Result of Reability Testing**

M30		$f_x = ((20)/(20-1)) * ((W22-V24)/W22)$																				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
AY	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	0	15
AP	1	1	1	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	16
AAS	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	17
AI	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	15
AZK	1	1	0	1	0	1	0	1	1	0	1	1	1	0	1	0	1	0	1	0	1	12
AM	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	0	15	
ALS	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	1	0	13	
DAS	1	0	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	0	14
DAR	0	1	1	1	1	1	0	0	1	1	1	0	1	1	1	0	1	1	1	0	14	
EM	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	18
FI	1	1	0	1	1	1	1	1	0	1	1	0	1	0	1	0	0	1	1	1	1	14
FKS	1	1	0	1	1	0	1	1	1	1	0	1	0	1	1	0	1	1	0	1	0	14
KM	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	16
LSK	0	1	0	0	1	1	0	0	1	1	1	1	0	1	1	0	1	0	1	0	1	12
MAA	1	1	0	1	0	1	0	1	1	0	0	1	1	0	1	1	0	1	0	0	1	11
MAN	1	0	1	1	0	1	0	1	0	1	1	1	1	1	0	1	0	1	1	0	13	
MBK	0	1	1	1	1	0	1	0	1	0	1	1	0	0	0	1	1	0	0	0	10	
MFI	1	1	0	1	0	1	0	1	1	1	0	0	0	1	1	1	0	0	1	1	1	12
MIS	0	1	1	0	1	1	0	1	1	0	0	1	1	0	0	0	0	1	1	0	10	
MAH	1	1	1	1	1	0	1	1	0	0	1	0	1	0	0	1	0	1	0	1	12	
P	0,7	0,7	0,65	0,8	0,7	0,8	0,55	0,75	0,8	0,75	0,65	0,7	0,7	0,7	0,7	0,65	0,55	0,6	0,8	0,4	VT	48,71
q=(1-p)	0,3	0,3	0,35	0,2	0,3	0,2	0,45	0,25	0,2	0,25	0,35	0,3	0,3	0,3	0,3	0,35	0,45	0,4	0,2	0,6		
Pq	0,21	0,21	0,22	0,16	0,18	0,16	0,24	0,18	0,16	0,18	0,22	0,18	0,18	0,21	0,18	0,22	0,24	0,24	0,16	0,24	3,97	

$$r_{11} = \left[ \frac{n}{n-1} \right] \left[ \frac{s_t^2 - \Sigma p1 - q1}{s_t^2} \right]$$

KR 20 **0,97**

The result shows that the test was reliable with the reliability coefficient of 0.97 or 97%, it means that the reliability of test is high.

### E. Normality Testing

Normality testing is used to know whether the data is normal distribution or not. It is important to get the normality data because the data can be considered to represent to population when it is in normal distribution (Priyatno, 2012:33). In this research, the researcher intended to test the normality of the data by using SPSS 16.0 with One-Sample Kolmogorov-Smirnov method. The normality testing was done toward the pre-test and post-test score.

The hypotheses for testing normality are:

a. Ho: Data is in normal distribution

b. Ha: Data is not in normal distribution

The hypotheses for normality testing say that the data is in normal distribution if Ho is accepted and it is automatically, the data is not in normal distribution if Ha is accepted. The Ho is rejected when the significance value is lower than 0,05 ( $\alpha = 5\%$ ), while Ho is accepted if the significance value is higher than 0,05 ( $\alpha = 5\%$ ). The result analysis for normality testing can be seen in table, as follow:

**Table 3.8 The Result of Pre-test and Post-test Normality Testing**

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		20
Normal Parameters <sup>a</sup>	Mean	.0000000
	Std. Deviation	4.14403201
Most Extreme Differences	Absolute	.151
	Positive	.151
	Negative	-.113
Kolmogorov-Smirnov Z		.676
Asymp. Sig. (2-tailed)		.751

a. Test distribution is Normal.

From the table 3.3, it can be know that the significance value of pre-test and post-test. As stated before, the hypotheses for normality testing say that the data is in normal distribution if H0 is accepted and it is automatically, the data is not in normal distribution if Ha is accepted. The H0 is rejected when the significance value is lower than 0,05 ( $\alpha = 5\%$ ).

#### F. Homogeneity Testing

Homogeneity testing is used to know whether the data is homogeny or not. When homogeny fulfilled, so the research can do next analysis data stage. In this research, the researcher intended to test the homogeneity of the data by using SPSS 16.0 with One-way ANOVA method. The homogeneity testing was done toward the pre-test and post-test score. The formula from homogeneity (Tulus, 2006:100) is:

$$F_{\max} = \frac{\text{high variance}}{\text{low variance}}$$

**Table 3.9 Table of The Result Homogeneity testing**

**Test of Homogeneity of Variances**

test			
Levene Statistic	df1	df2	Sig.
3.044	1	38	.089

#### G. Data Collection Method

The collection of data is systematic and standardized procedures to obtain the necessary data. In this research the researcher is going to use the test method,

the test method in this case is used to get data of students' vocabulary mastery in listening. The method of data collection this study is test method.

The test will be used by researchers here contains about tests increase vocabulary. The shape of the test is written, because it can be used to determine how much increase student's vocabulary of the material that has been taught by the teacher.

In order to get the good quality of data, the researcher must choose the good instrument that used in research. In this research, the researcher used test as instrument they were pre-test and post-test. Before doing treatment, the researcher applied a pretest. It lasted in 60 minutes. The test consists of 20 questions. The items were 10 questions for multiple choice, 10 items for match the word with picture and suitable meaning. The researcher wants to know how far the vocabulary mastery of the students is before they use of nursery rhyme video.

After doing pretest the researcher gave treatment for the students. Is this step the researcher choosing nursery rhyme media in teaching simple past tense. In this research, the researcher focused the vocabulary. At the first the treatment, the researcher first introduced what is the nursery rhyme video media. After that, The writer handed out the text of the nursery rhyme to the students or wrote it on the blackboard. Then, The writer explained what the nursery rhyme is about. The writer asked the students to find difficult words then the teacher explained them. The writer also introduced the pronunciation. After that, The writer played the nursery rhyme video on the LCD twice. In this step, the writer let the students watch and listen to the nursery rhymes. The next step was the writer sang the first

line, then the students repeated it. After that she sang the next line, then she asked them to repeat it and soon. After mastering the intonation of each line, the writer asked the students to sing the nursery rhymes by following her or the video. Finally she asked them to sing the nursery rhymes without her guidance or video. When singing the nursery rhymes, the writer showed pictures or real objects to represent the words of nursery rhymes. If possible, she also associated the words with action. The writer explained the instruction or meaning of a word or each line of the nursery rhyme to the students. The writer also gave new words related to the topic she taught to the students. The writer asked questions to check the students' comprehension. The students did the exercises given by the writer.

The steps for the control group:

- (1) For this group the teacher did not use nursery rhymes, instead he used a set of words that was written on the blackboard.
- (2) The students pronounced the words correctly after the teacher.
- (3) The teacher gave the meaning of the words to the students.
- (4) The students did the exercises prepared by the teacher.

Finished doing treatments the researcher doing posttest. It lasted for 60 minutes. The students must answer the questions as many 20 question. Posttest is known the increasing of vocabulary mastery after they have use nursery rhyme video. Pretest and Posttest are to knowing the differences of the students' ability before and after the teacher use the method. Before the researcher applying the pre-test, the researcher conducted tryout of the test in other class to know the tests are valid and reliable or not. The researcher chooses high-level than sample that



given treatment because the high-level certainly know test was appropriate with the seventh class or not because before that they never accept that materials.

## H. Data Analysis

Data analysis is a review of a series of activities, grouping, systematization, interpretation, and verification of data that a phenomenon has social, academic, and scientific. This study uses pre-experimental in quantitative data analysis. In this study, pre-experimental are processed by comparing the two test (pre-test and post-test). The first data is data of student score before taught using Nursery rhyme video media (pre-test). The data result is after using Nursery rhyme video media (post-test). If the post-test of using nursery rhyme video media score test is higher than pre-test, it means that the method is effective.

The data of this study will be analyzed using t-test to know the effectiveness between two variables. The formula is the follows:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

<b>t</b>	= t value which is found
<b>X<sub>1</sub></b>	= the mean of the pre-test
<b>X<sub>2</sub></b>	= the mean of the post-test
<b>N</b>	= the number of subject
<b>D</b>	= the sum derivation of mean difference
<b>D<sup>2</sup></b>	= the different degree
<b><math>\bar{D}</math></b>	= $\bar{X}_2 - \bar{X}_1$

Uses sample T-test at SPSS 16.0 for windows:

Set 2 of variable – Klik Analyze – Compare means - Choose Paired Samples

T-Test – Put variable in each position – OK.