

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

This chapter presents and discusses the statistical result based on the instruments that are used in conducting the research. The data is presented which are presentation of data, hypothesis testing, and measurement of validity and reliability of the test.

A. Presentation of Data

As stated in chapter I that there is two research problem of this study, the problem is whether Do kindergartens students learning vocabulary with Multisensory method have better memorizing vocabulary achievement and How significant is the impact of Multisensory method on students' memorizing vocabulary at Halimah Kindergarten Prenduan Sumenep.

In this part, after computing all of the data during the researcher process as a form of the result of the research, the researcher has to present the data to know the comparison of both variable as include in the research problem above that is independent and dependent variable. The researcher uses test and documentation as research instruments in collecting the data. Data will be described is the data that researcher got during the research process, that is the result of test and documentation data as method to collect the data related to variable X (multisensory method) and variable Y (memorizing vocabulary).

The researcher takes all the sample as population sampling whether this research is one group design, so pre-test and post-test the researcher conducts TK B Class in fifth-sixth years old that consist of 11 (eleven) students. The test was given to kinds of test by researcher, pre-test and post-test by using instruments of the test.

1. Data Presentation of the Test

a. The Presentation of Pre-test

In this part, as the researcher stated in the Chapter III that the test uses to measure students' memorizing vocabulary by Orton Gillingham multisensory method from the score of the test. The form of the test is fill in the blank or gap filling on guessing picture. In scoring for answering of the test, the researcher gives 10 scores for each items of correct answer and 0 score for wrong answer which have been provided by the researcher. The test consists of 10 questions. If the students can answer all of the questions correctly the score are 100 scores. After the students submitted the test to researcher, then, researcher score it based on the criteria of scoring which are taken from Teacher made test and Asesmen Anak Usia Dini Book which submitted by Didith P, and other references. The students' test score is displayed in the table 1 below.

Table I. The Result of Pre-test

NO.	NAME OF CORRESPONDENTS	Pre- test Score
1	Lee	80
2	Bian	20
3	Arin	60
4	Faida	0
5	Feby	60
6	Caca	30
7	Rani	50
8	Nasywa	40
9	Afika	60
10	Mala	30
11	Ila	20
SUM		450

Based on the table above, it is known that the students are eleven. The first column is a number of the students and the second column nick name of students', and the third column is table of pre-test score. It is found that the total pre-test score of students' memorizing vocabulary is 450 scores before giving treatment.

From the table above, there are many various scores. Students who get score above 60 are 4 students, it can be called as good memorizer, and students who get score under 59 are 7 students or it is called as weak memorizer.

b. Presentation of Post-test

After the researcher conducted treatment of multisensory method on two days. The researcher conducted the post-test in testing memorizing vocabulary to collect the score after treatment in 7 days. The scores of post-test were presented in table as follow:

Table II. The Result of Post-test

NO.	NAME OF CORRESPONDENTS	Pre-test Score
1	Lee	90
2	Bian	90
3	Arin	90
4	Faida	70
5	Feby	90
6	Caca	70
7	Rani	70
8	Nasywa	80
9	Afika	70

10	Mala	50
11	Ila	40
SUM		810

Based on the table above, it is known that the students are eleven. The first column is a number of the students and the second column nick name of students', and the third column is table of post-test score It is found that the total score of students' memorizing vocabulary is 810 scores after the teacher gave treatment.

From the table above, there are many various scores. Students who get score above 60 are 9 students, it can be called as good memorizer, and students who get score under 59 are 2 students or it is called as weak memorizer.

2. Data Presentation of Documentation

The data were obtained from documentation are as follow:

- a. TK B students consist eleven students name list of Halimah Kindergarten Prenduan Sumenep.
- b. Students Score.
- c. Lesson Plan
- d. The Photos for collecting the test.
- e. Teaching Learning Activities of Multisensory method, collecting data with students photos.

After researcher counted the score of Pre-test and Post-test, the researcher compared the mean of pre-test and Post-test through data analysis.

3. Data Analysis

After measuring the reliability and validity of the instrument, the researcher needs to analyze the scores to statistical form, because in this research is pre-test and post-test. Then, Before testing the hypothesis, the researcher would like to analyze the data to take the result of this research. The research used dependent t-test to analyze the data which included two result of test instrument, namely pre-test and post-test. The calculation of dependent t-test is formed by considering the table as follow:

Table III. The Calculation of Paired Sample t-test (Post-test – Pre-test)

No.	Name of Correspondents	Memorizing Vocabulary Test		D=	D ² =
		Pre-test	Post-test	(X-Y)	(X – Y) ²
1	Lee	80	90	10	100
2	Bian	20	90	70	4900

3	Arin	60	90	30	900
4	Faida	0	70	70	4900
5	Feby	60	90	30	900
6	Caca	30	70	40	1600
7	Rani	50	70	20	400
8	Nasywa	40	80	40	1600
9	Afika	60	70	10	100
10	Mala	30	50	20	400
11	Ila	20	40	20	400
N=11		SUM=45	SUM=81	$\Sigma D = 36$	$\Sigma D^2 = 1620$
		0	0	0	0

Based on the table above, the computation of dependent t-test is administrated as follow:

$$N = 11$$

$$\Sigma D = 360$$

$$\Sigma D^2 = 16200$$

The counting steps t-test are as follow:

- a. Looking for D (difference) between score of pre-test and post-test, the calculation is $D = (X_2 - X_1)$. *See Table III*
- b. Summing D (Difference) until $\sum D = 360$ it is obtain by adding all of the score D. *See Table III*
- c. Looking for mean of difference, by formula : $M_D = \frac{\sum D}{N}$

$$M_D = \frac{360}{11} = 32.72727$$

- d. Square all of D score. Then, add all of square D score.
- e. Determining standard deviation from D by formula: $SD_D =$

$$\sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2}$$

$$SD_D = \sqrt{\frac{16200}{11} - \left(\frac{360}{11}\right)^2}$$

$$SD_D = \sqrt{1472.727 - 1071.074}$$

$$SD_D = \sqrt{401.6529} = 20.04128$$

- f. Determining standard error of mean of D by formula: SEM_D

$$= \frac{SD_D}{\sqrt{N-1}}$$

$$SEM_D = \frac{20.04128}{\sqrt{11-1}}$$

$$SEM_D = \frac{20.04128}{\sqrt{10}}$$

$$SEM_D = \frac{20.04128}{3.162278} = 6.337609$$

- g. Determining t_o by formula : $t_o = \frac{M_D}{SEM_D}$

$$t_o = \frac{32.727273}{6.337609} = 5.163978 = 5.164$$

Based on the calculation of dependent t-test, the researcher finds $t_0 = 5.164$, to know whether null hypothesis is rejected or accepted, it must be done the process of hypothesis testing.

B. Hypothesis Testing

Based on the result of t_0 , that is 5.164. to determine whether H_0 is rejected or accepted, it must be consulted with t-Value in t-table by using significant level 5%.

The researcher should determine df(Degree of Freedom) by formula $df = N - 1$. As the stated above the number of participants ($N = 11$). So the degree of freedom is calculated as follow;

$$df = N - 1$$

$$df = 11 - 1 = 10$$

based on df score above, in order to consult to t-value on the level of significance 5%. Obviously, in $df = 10$, t-value that can be obtained in t-table in the level significance 5% is 2.04.

After $t_0 = 5.164$, then, compare with t-value in t-table of 2.23. the researcher stated that null hypothesis is rejected and alternative hypothesis(H_a) is accepted because $t_0 > t_t$ ($5.164 > 2.23$).

Finally the researcher infers that alternative hypothesis is accepted. So, this research conclude that there is an impact of Multisensory method on students' memorizing vocabulary at TK B Kindergarten Prenduan Sumenep.

C. Validity and Reliability of the Instrument

1. Validity of the instrument

The researcher used content validity to measure students on memorizing vocabulary. The test is intended and explain clearly to students. The researcher asked to the students teacher how to made the test in every indicator. And before giving the test, the researcher observed students phenomena and search some references for assessing test. Moreover, the test have been arranged based on the syllabus of English material that is sign by the teacher.

2. Reliability of the instrument

After test validity had been provable. The next steps is determining reliability of the instrument. The reliability is tested by using Cronbach Alpha formula, because it suitable to measure reliability of performance test such as memorizing vocabulary which the answer is not scored simply as true and false and multiple choice test.

In this case, the reliability testing is applied individually, namely reliability testing pre-test and reliability testing of post-test. Those are presented as follow:

a. Reliability Testing of Pre-test

To know the reliability coefficient, the researcher would find sum of variance of each process on students' memorizing vocabulary. The researcher used Microsoft Excel application to count the score as follow:

1) The Variance of Pre-test Score

Before establish the variance of pre-test score, the researcher should determine the mean score of it. In determining the mean score, the researcher should sum $\sum X_i$ (Pretest Score) of memorizing vocabulary on table as follow:

Table IV. Calculation of Determining Variance of Pre-Test Score

NO.	NAME OF CORRESPONDENTS	Pre-test Score(X_i)	($X_i - \bar{X}$)	($X_i - \bar{X}$) ²
1	Lee	80	39.09091	1528.099
2	Bian	20	-20.9091	437.1901
3	Arin	60	19.09091	364.4628
4	Faida	0	-40.9091	1673.554
5	Feby	60	19.09091	364.4628
6	Caca	30	-10.9091	119.0083
7	Rani	50	9.090909	82.64463
8	Nasywa	40	-0.90909	0.826446
9	Afika	60	19.09091	364.4628
10	Mala	30	-10.9091	119.0083
11	Ila	20	-20.9091	437.1901
N=11		450	-	5490.909

Based on the table above, the sum of X_i (pre-test Score of memorizing vocabulary) is 450. Then, the researcher calculated the mean score of X_i which is gotten from sum of X_i divided by amount of participants. After that researcher calculated the variance of $(X_i - X)^2$. To get the variance, the researcher should determine X_i minus the mean score and multiplied and totaling. Therefore, the sum of $(X_i - X)^2$ is 5490.909.

For the formula to find mean score and variance of pre-test score of memorizing vocabulary calculation, it presented as following:

a) Determining the Mean Score

$$\bar{x} = \frac{\sum X_i}{N}$$

$$\bar{x} = \frac{450}{11} = 40.90909 = 40.9091$$

b) Determining the Variance

$$S_i^2 = \frac{\sum (X_i - X)^2}{N - 1}$$

$$S_i^2 = \frac{40.9091}{11 - 1}$$

$$S_i^2 = \frac{40.9091}{10} = 4.9091$$

From the formula above, it can be obtained that the mean score of memorizing vocabulary pre-test Score is 40.9091 and the variance is 4.9091.

b. Reliability Testing of Post-test

To know the reliability coefficient, the researcher would find sum of variance of each process on students' memorizing vocabulary. The researcher used Microsoft Excel application to count the score as follow:

1) The Variance of Post-test Score

Before establish the variance of post-test score, the researcher should determine the mean score of it. In determining the mean score, the researcher should sum $\sum X_i$ (Post-test Score) of memorizing vocabulary on table as follow:

Table V. Calculation of Determining Variance of Post-Test Score

No.	Name Of Correspondents	Posttest Score(X_i)	$(X_i - \bar{X})$	$(X_i - \bar{X})^2$
1	Lee	90	17.2727	298.347
2	Bian	90	17.2727	298.347
3	Arin	90	17.2727	298.347
4	Faida	70	-2.7273	7.43802
5	Feby	90	17.2727	298.347
6	Caca	70	-2.7273	7.43802
7	Rani	70	-2.7273	7.43802
8	Nasywa	80	7.27273	52.8926

9	Afika	70	-2.7273	7.43802
10	Mala	50	-22.727	516.529
11	Ila	40	-32.727	1071.07
N=11		810	-	2854.55

Based on the table above, the sum of X_i (post-test Score of memorizing vocabulary) is 810. Then, the researcher calculated the mean score of X_i which is gotten from sum of X_i divided by amount of participants. After that researcher calculated the variance of $(X_i - \bar{X})^2$. To get the variance, the researcher should determine X_i minus the mean score and multiplied and totaling. Therefore, the sum of $(X_i - \bar{X})^2$ is 2854.55.

For the formula to find mean score and variance of post-test score of memorizing vocabulary calculation, it presented as following:

a) Determining the Mean Score

$$\bar{x} = \frac{\sum X_i}{N}$$

$$\bar{x} = \frac{810}{11} = 73.63636 = 73.6364$$

b) Determining the Variance

$$S_i^2 = \frac{\sum (X_i - \bar{X})^2}{N-1}$$

$$S_i^2 = \frac{73.6364}{11-1}$$

$$S_i^2 = \frac{73.6364}{10} = 7.36364$$

From the formula above, it can be obtained that the mean score of memorizing vocabulary post-test Score is 73.6364 and the variance is 7.36364.

c. Reliability of Pretest-Posttest Memorizing Vocabulary

Based on the data calculation above, the variance and mean of pre-test and post-test memorizing vocabulary. In checking reliability of the instrument of this research, the researcher uses SPSS application for calculating the result of the test with Cronbach alpha as a model. The result as below:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.640	.663	2

From the output the researcher get the reliability coefficient of pre-test and post-test = 0.640. the numbers

ust be consulted r table. The number of the sample =11, it means $N=11$, and degree of freedom($N-nr$), $df=(11-2)$, $df=9$. According to level significances 5%, the critical value in r-table is 0.602. Because coefficient Alpha that 0.640 are significantly higher than r-table in significance 5%. So $\alpha > r$ table(reliable). So the researcher states that the data in pre-test and posttest are reliable.