

## CHAPTER IV

### THE RESULT OF RESEARCH METHODOLOGY

#### A. DATA DESCRIPTION

A researcher looked for the data by teaching the students. The teaching was done at two classes. A class was using pictures test, and B class was without using pictures. Both of them are favorite classes, they were to know vocabulary mastery by students by and without using pictures.

In teaching learning process, a researcher was teaching them and also giving warming up (A class was using pictures and B class was without using pictures). She had been teaching first grade of MTs Babussalam for two weeks. A week was third meeting, therefore a test was given both classes in the last meeting (fifth meeting). But for a test, both classes are without using pictures.

There are 15 items divided by three categories, they included five multiple choices, five essays, and six blank spaces.

The score result in this research is as follow:

**Table I**

#### **Final Score of Experiment Class**

<b>No</b>	<b>Name</b>	<b>Score</b>
1.	Nur Fitriana	80
2.	Visda Aliyatul Azizah	80
3.	Devi Amelia Putri	60

4.	M. Nurul Huda	80
5.	Ari Kuswoyo	70
6.	Lita Furiawan	40
7.	M. Arif Shofiudin	30
8.	Angga Afiffudin	70
9.	Fuji Rahmat agung	70
10.	Abd. Rahman	80
11.	M. Syifak Syamsudin	70
12.	Irwan Budiono	60
13.	M. Jairobi	40
14.	Fiqi Hidayatul Jannah	80
15.	Nurul Abidah	70
16.	Shinta Dewi	80
17.	Umi Maslikhah	70
18.	Siti Qomariyah Al- Mufidah	80
19.	Nindy Istighfariyah	80
20.	Luqman Erianto	60
21.	Intan Triaswulan	80
22.	M. Rifa'i	80
23.	Fitria Filatul Karimah	70
24.	Dimas Nila Rahmatullah	80
25.	Muhimmatul Hasanah	60
26.	Mariatul Iftitah	100
27.	Ida Rosyidah	50
28.	Siti Rizkatin	80
29.	M. Rifki Aditya	90
30.	Lia Rahayu Ningsih	80
31.	M. Fahmi Ahsan Hidayat	70

32.	Ainur Rahman	70
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**Table II**

**Final Score of Control Class**

<b>No</b>	<b>Name</b>	<b>Score</b>
1.	Linda Widiastutik	30
2.	St. Maulida	40
3.	Isnawati	60
4.	Yayuk Puji Astustik	60
5.	Aprilia Puput Sucia I.	60
6.	ST. Maimunah	70
7.	Fitriatin Nisa'	60
8.	Ria Purniati	50
9.	Nur Abidah	70
10.	Rahayu Dian Ika Susanti	70
11.	ST. Nur Jannah	50
12.	Elok Ulul Azmi	40
13.	Titik Nur Hayati	70
14.	Tiara Chandra	50
15.	ST. Jannatul Firdaus	70
16.	Oktafi Wijaya	40
17.	Zudi Abdurrohim	30
18.	A. Rukhot Tohari	60
19.	Dodik Mizwar	50
20.	Defi Prasetyo	50
21.	M. Yunus	50

22.	Nur Walis Ibnu H	60
23.	M. Khoiri	50
24.	Sutriswanto	60
25.	M. Cahyo Fani Ma'arif	60
26.	Qolid Jumadil Kubro	60
27.	A. Lutfi	70
28.	Miftakhul A	70
29.	M. Fiqi	60
30.	M. Arifudin	50
31.	M. Hasan Yusuf	70
32.	Yasin Mustofa	60
33.	Imam Hanafi	60
34.	Luqman Purwanto	50

### 1. Normality

Based on the procedure that has explained in chapter III, therefore the procedure of normality tests is as follow:

#### - **EXPERIMENT CLASS**

Range = biggest data – smallest data

$$= 100 - 30$$

$$= 70$$

Many classes (K) =  $1 + 3,3 \log (32)$

$$= 1 + 4,805$$

$$= 5,805$$

$$= 6$$

Therefore many classes that can be used are 5 or 6, in this analysis that many classes data is used 6

$$\text{High class} = \frac{\text{Range}}{\text{Many classes}}$$

Many classes

$$= \frac{70}{6}$$

$$= 11,666$$

$$= 12$$

Therefore, high class that can be used is 11 or 12, in this analysis that high class data is used 12

### ***Calculating Mean***

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n}$$

$$= 80 + 80 + 80 + 80 + 80 + 80 + 80 + 80 + 60 + 80 + 80 + 80 + 80 + 80 + 70$$

$$+ 70 + 70 + 70 + 70 + 70 + 70 + 60 + 60 + 60 + 60 + 50 + 40 + 40 + 100$$

$$+ 30$$


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32

$$= 70,62$$

**Calculating Standard Deviation**

$$\begin{aligned}
 S^2 &= \frac{\sum (x_i - \bar{x})^2}{n - 1} \\
 &= \frac{(80 - 70,62)^2 \cdot (13) + (70 - 70,62)^2 \cdot (9) + (60 - 70,62)^2 \cdot (4) + (40 - 70,62)^2 \cdot (2) + (50 - 70,62)^2 + (100 - 70,62)^2 + (90 - 70,62)^2 + (3070,62)^2}{32 - 1} \\
 &= \frac{6787,45}{31} \\
 S^2 &= 218,95 \\
 S &= 14,79
 \end{aligned}$$

**Table III**  
**The Observation and Expectation Frequency List**

Interval Class	Class Limit	Z Class Limit	Area Table Z	Ei	Oi	$\frac{(O_i - E_i)^2}{E_i}$
30- 41	29,5	-2,78	0,0217	0,6944	3	2, 3056
42- 53	41,5	-1,97	0,416	13,312	1	-12, 312
54- 65	53,5	-1,15	-0,0697	-2,2304	4	-1, 7696
66- 77	65,5	-0,35	-0,0515	-1, 648	9	-7, 352
78- 89	77,5	-0,47	-0,2149	-6, 8768	13	-6, 1232
90- 101	89,5	1,28	-0,1024	-3, 2768	2	1, 2768
	101,5	2,09				

***Determining Hypothesis***

*Ho* : Sample is from population distributes normal

*Hi* : Sample is from population does not distribute normal

***Determining alpha*** ( $\alpha$ ) = 0, 01

**Calculating the value of  $X^2$  by chi square**

$$\begin{aligned} \chi^2 &= \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} \\ &= 2,3056 - 12,312 - 1,7696 - 7,352 - 6,1232 + 1,2768 \\ &= -23,9744 \end{aligned}$$

Therefore:

$$\begin{aligned} &\chi^2(1-\alpha)(k-3) \\ &- (1-0,01)(6-3) \\ &- (0,99)(3) = 11,3449 \end{aligned}$$

**Conclusion**

- 23,9744 < 11,3449, it means that  $H_0$  is received Sample is from population distributes normal.

- **CONTROL CLASS**

$$\begin{aligned} \text{Range} &= \text{biggest data} - \text{smallest data} \\ &= 70 - 30 \\ &= 40 \end{aligned}$$

$$\begin{aligned} \text{Many classes (K)} &= 1 + 3,3 \log(34) \\ &= 1 + 4,831 \\ &= 5,831 \\ &= 6 \end{aligned}$$

Therefore many classes that can be used are 5 or 6, in this analysis that many classes data is used 6



$$\begin{aligned}
 \text{High class} &= \frac{\text{Range}}{\text{Many classes}} \\
 &= \frac{40}{6} \\
 &= 6,66 \\
 &= 7
 \end{aligned}$$

Therefore, high class that can be used is 6 or 7, in this analysis that high class data is used 7

***Calculating Mean***

$$\begin{aligned}
 \bar{x} &= \frac{\sum_{i=1}^n x_i}{n} \\
 &= \frac{70 + 70 + 70 + 70 + 70 + 70 + 70 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 40 + 40 + 40 + 40 + 40 + 30 + 30}{34} \\
 &= \frac{1910}{34} \\
 &= 56,18
 \end{aligned}$$

***Calculating Standard Deviation***

$$S^2 = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

$$= (70 - 56, 18) (8) + (60 - 56, 18) (12) + (50 - 56, 18) (9) + (40 - 56, 18) (3) +$$

$$\frac{(30 - 56, 18) (2)}{34 - 1}$$

$$34 - 1$$

$$= \frac{4202,93}{33}$$

$$33$$

$$s^2 = 123,61$$

$$s = 11,12$$

**Table IV**  
**The Observation and Expectation Frequency List**  
**(Control class)**

Interval Class	Class Limit	Z Class Limit	Area Table Z	Ei	Oi	$\frac{(O_i - E_i)^2}{E_i}$
30 - 36	29,5	-2,40	0,0302	1,0268	2	0,9732
37 - 43	36,5	-1,77	0,4059	13,8006	3	-10,8006
44 - 50	43,5	-1,14	-0,1358	-4,6172	9	-4,3828
51 - 57	50,5	-0,5	0,1477	5,0218	-	5,0218
58 - 64	57,5	0,12	-0,2296	-7,8064	12	-4,1936
	64,5	0,75				

65 - 71			-0,1428	-4,8552	8	-3,1448
	71,5	1,38				

***Determining Hypothesis***

*Ho* : Sample is from population distributes normal

*Hi* : Sample is from population does not distribute normal

***Determining alpha*** ( $\alpha$ ) = 0,01

***Calculating the value of  $X^2$  by chi square***

$$\begin{aligned}
 \chi^2 &= \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} \\
 &= 0,9732 - 10,8006 - 4,3828 + 5,0218 - 4,1936 - 3,1448 \\
 &= -16,5268
 \end{aligned}$$

Therefore:

$$\begin{aligned}
 &\chi^2 (1 - \alpha)(k - 3) \\
 &- (1 - 0,01)(6 - 3) \\
 &- (0,99)(3) = 11,3449
 \end{aligned}$$

***Conclusion***

-16,5268 < 11,3449, it means that  $H_0$  is received Sample is from population distributes normal.

## 2. Homogeneity Test

Before using homogeneity test, she uses hypothesis test of 2 populations, by the result is as follow

$$\bar{x}_1 = \frac{80 + 80 + 80 + 80 + 80 + 80 + 80 + 80 + 60 + 80 + 80 + 80 + 80 + 80 + 70 + 70 + 70 + 70 + 70 + 70 + 70 + 70 + 60 + 60 + 60 + 60 + 50 + 40 + 40 + 100 + 30}{32}$$

$$= 70,62$$

$$s_1^2 = \frac{(80 - 70,62)^2 \cdot (13) + (70 - 70,62)^2 \cdot (9) + (60 - 70,62)^2 \cdot (4) + (40 - 70,62)^2 \cdot (2) + (50 - 70,62)^2 \cdot (1) + (100 - 70,62)^2 \cdot (1) + (90 - 70,62)^2 \cdot (1) + (30 - 70,62)^2 \cdot (1)}{32 - 1}$$

$$= 6787,45$$

31

$$= 218,95$$

$$\bar{x}_2 = \frac{70 + 70 + 70 + 70 + 70 + 70 + 70 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 60 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 50 + 40 + 40 + 40 + 40 + 30 + 30}{34}$$

34

$$= 1910$$

34

$$\begin{aligned}
 &= 56,18 \\
 S_2^2 &= \frac{(70 - 56,18)(8) + (60 - 56,18)(12) + (50 - 56,18)(9) + (40 - 56,18)(3) + (30 - 56,18)(2)}{34 - 1} \\
 &= \frac{4202,93}{33} \\
 &= 123,61
 \end{aligned}$$

***Determining Hypothesis***

*H<sub>0</sub>* : sample is from population that has variants homogeneity

*H<sub>i</sub>* : sample is from population that has not variants homogeneity

***Determining alpha*** ( $\alpha$ ) = 0,05

***Test statistic***

$$\begin{aligned}
 F_{hit} &= \frac{S^2_{big}}{S^2_{small}} \\
 &= \frac{218,95}{123,61} \\
 &= 1,78
 \end{aligned}$$

$$F_{tab} = 0,05; 31, 33 = 1,84$$

***Conclusion***

1,78 < 1,84 *H<sub>0</sub>* is received, it means that sample is from population that has variants homogeneity

### 3. Differences between Means

#### **Determining hypothesis**

*Ho* : Students who are using pictures can master their vocabulary are worse than students who are without using pictures can master their vocabulary.

*Hi* : Students who are using pictures can master their vocabulary are better than students who are without using pictures can master their vocabulary.

#### **Determining Alpha = 0, 05**

#### **Calculation Test Statistic**

$$\begin{aligned}
 t &= \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \\
 &= \frac{70,62 - 56,18}{\sqrt{\frac{218,95}{32} + \frac{123,61}{34}}} \\
 &= \frac{14,44}{\sqrt{6,84 + 3,75}} \\
 &= \frac{14,44}{3,25} \\
 &= 4,44
 \end{aligned}$$

$$\begin{aligned}
V &= \frac{\left( \frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} \right)^2}{\frac{\left( \frac{s_1^2}{n_1} \right)^2}{n_1 - 1} + \frac{\left( \frac{s_2^2}{n_2} \right)^2}{n_2 - 1}} \\
&= \frac{\left( \frac{218,95}{32} + \frac{123,61}{34} \right)^2}{\frac{\left( \frac{218,95}{32} \right)^2}{31} + \frac{\left( \frac{123,61}{34} \right)^2}{33}} \\
&= \frac{109,83}{\frac{46,82}{31} + \frac{13,25}{33}} \\
&= \frac{109,83}{1,51 + 0,40} \\
&= \frac{109,83}{1,91} \\
&= 57,50
\end{aligned}$$

**Conclusion**

1,671 < 4,44  $H_0$  is refused; it means that Students who are using pictures can master their vocabulary are better than students who are without using pictures can master their vocabulary.

## **B. DISCUSSION**

As we know from the result of methodology that students who are using pictures to master vocabulary skill is better than students who are without using pictures to master vocabulary skill. Learners' problems in English understanding are the meaning of words, word form differentiations, and in applying words in sentence. Some words forms grammatically; such as noun, verb, adjective, adverb, pronoun, (parts of speech). Therefore Vocabulary is the most important component to be learnt by all people, the more they master their vocabulary, the better they communicate with all people.

Vocabulary items for first grade of junior high school is based on the syllabus of first grade of junior high school such as; self- identity, school life, things in the house, family, hobbies, etc. Picture is one of visual aids that can stimulate students' skill, motivation, focus on the topic in the classroom. Therefore it is valuable in using common vocabulary in teaching learning process.

Vocabulary is the smallest component to be learnt, when students look at the picture that is showed by the teacher, students will imagine about the picture and directly looking for the meaning of it in order to be easy to write on their paper.