CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

This chapter present presentation of data that are collected, the validity and reliability of the research instrument, hypotheses testing, and analyzing data.

A. Research Findings

1. Presentation of Data

To collect data, researcher presents some result of the data based on the research instruments. Researcher used two instruments, test and documentation. To know the effect of free fire game to the students' vocabulary mastery, researcher needs students' score on vocabulary by using test, they are pretest and posttest, and then the researcher got the data.

a. Data Presentation of Test

Presentation of pretest and posttest as follow:

1) The Presentation of Pretest

The researcher conducts pretest to know students score before given a treatment. Pretest conducted on 13 October 2021 at 09.40 am. The researcher gives test that was provided by researcher. The test consist of 10 items, they

were in multiple choice. Researcher gives 15 minutes for students to complete the pretest, it was submitted, and after that the researcher scores it. In giving score, the researcher gives 10 point for correct answer and 0 point for wrong answer. Maximum score is 100 point. The result of pretest is provided in the table. (See Appendix 2)

From the table above, it can be seen that the number of Respondent (N) were 14 students and total score of pretest (before the students get a treatment) is 430. The highest score is 60 point, while the lowest score is 10 point. To calculate the mean of pretest on students' vocabulary mastery, the researcher uses the following formula:

$$X = \frac{\sum X}{N}$$

$$= \frac{430}{14}$$

$$= 30, 7$$

2) The Presentation of Treatment

For the next meeting on 27 October 2021 at 09.40 am, the researcher gave a treatment. The researcher took three treatments, the first is about invitation, the second is about opinion and

thought, and the third is suggestion and offer. The researcher implemented free fire game as a treatment with its step. In the first treatment, there were some steps in free fire game as follow:

a) Researcher entered to the classroom.
b) Researcher explains about invitation.
c) Students understood, researcher told that she would conduct a game related with the material that has been explained, that was free fire game.
d) The researcher explained about free fire game and how to do it.
e) The researcher showed how to practice it.
f) The researcher divided the students into two groups.
g) Each group is divided into seven students.
h) The researcher allowed 45 minutes for students to discuss the material and practice it.
i) Researcher closed the class and left the classroom.

In second treatment, there were some steps in free fire game as follow:

a) Researcher entered to the classroom.

b) The researcher explains about opinion and thought.
c) The students understood, the researcher told that she would conduct a game related with the material that has been explained, that was free fire game.
d) The researcher explained about free fire game and how to do it.
e) The researcher showed how to practice it.
f) The researcher divided the students into two groups.
g) Each group is divided into seven students.
h) The researcher allowed 45 minutes for students to discuss the material and practice it.
i) Researcher closed the class and left the classroom.

In third treatment, there were some steps in free fire game as follow:

a) Researcher entered to the classroom.
b) The researcher explains about suggestion and offer.
c) The students understood, the researcher told that she would conduct a game related with

the material that has been explained, that was free fire game.

d) The researcher explained about free fire game and how to do it.
e) The researcher showed how to practice it.
f) The researcher divided the students into two groups.
g) Each group is divided into seven students.
h) The researcher allowed 45 minutes for students to discuss the material and practice it.
i) Researcher closed the class and left the classroom.

3) The Presentation of Post-test

In the next meeting researcher gave a treatment, after obtained score of pretest. Researcher taught same material about English subject that they learned in the eleventh grade (explained about invitation etc). Posttest was conducted on 17November 2021 after the finishing the explanation about English subject that they learned in the eleventh grade (explained about invitation etc). The researcher gave the students test that was provided by researcher. It

consists of 10 items in multiple choices. The students get 15 minute to compute the posttest, it submitted, and after that the researcher scores it, after that the researcher compared it with pretest.

From the table above, it can be seen that the number of Respondent (N) were 14 students and total score of posttest (after the students get a treatment) is 920. The highest score is 90 point, while the lowest score is 50 point. To calculate the mean of posttest on students' vocabulary mastery, the researcher uses the following formula:

$$X = \frac{\sum X}{N}$$

$$= \frac{920}{14}$$

$$= 65, 7$$

Based on the calculation above, it can be known that the mean of posttest is higher than the mean of pretest of vocabulary mastery. The results of them are in the table: (See Appendix 4)

b. Data Presentation of Documentation

The data were obtained from documentation are as follow:

1) Students' name list: see page 53
2) Syllabus: see page 105

c. Validity and Reliability of Instrument

1) Validity of the instrument

Content validity is a concept of test making empahasing the aspect to which test are made by representative of the materials being taught. The researcher states that it has content validity because test that is given to the students contains the material that has been learned by the students.

2) Reliability of the instrument

To know the reliability of the test, the researcher uses K-R.21 formula because test that conducted in the form of multiple choices, and the items on the test are scored right or wrong as categorical scores. For right answer scored by 10 and for the wrong answer scored by 0.

The explanations of reliability of the test, they are reliability of pretest and reliability of posttest is in the following:

a) Reliability of pretest

To compute the reliability of pretest or posttest is uses K-R.21 formula. It will be explain

$$r_{11}=\left(\frac{k}{k-1}\right)\left(1-\frac{M(k-M)}{k.Vt}\right)$$

Where :

r_{11} : Instrument reliability

k : The number of items

Vt : Variances Total

M : Mean Score

Mean score of pretest the analysis of the item score of pretest are in the table: (See Appendix 5 and 6)

N = 14

$\sum x$ = 43

$\sum x^2$ = 167

Vt $= \sum x^2 - \frac{(\sum x)^2}{\frac{N}{N}}$

= 167 - ¿¿

$$= 167 - \frac{\frac{1849}{14}}{14}$$

$$= 167 - \frac{132,07}{14}$$

$$= 167 - 9, 4335$$

$$= 157, 5665$$

$$M = \frac{\sum X}{N}$$

$$= \frac{43}{14}$$

$$= 3, 07$$

After knowing the value of Variance Total (Vt) and Mean Score (M), the next consult them to K-R.21 formula as follow:

$$r_{11} = \left(\frac{k}{k-1}\right) ¿)$$

$$= \left(\frac{10}{10-1}\right)\left(1 - \frac{3,07(10-3,07)}{10.157,5665}\right)$$

$$= \frac{10}{9}\left(1 - \frac{3,07(6,93)}{1575,665}\right)$$

$$= \frac{10}{9}\left(1 - \frac{21,2751}{1575,665}\right)$$

$$= \frac{10}{9}(1 - 0,0135)$$

= 1,111x (0, 9865)

= 1, 0960

b) Reliability of posttest

To calculate the reliability of posttest is same with the calculation of posttest. The first step is determining the total score of posttest ($\sum x$) and the total quadrate score of posttest ($\sum x^2$). The total score of posttest is 92, the total quadrate score of posttest is 624, number of item is 10. (See Appendix 7 and 8)

Before calculating the reliability of the instrument, the researcher should determine the value of Variance total (Vt).

$$Vt = \sum x^2 - \frac{\frac{(\sum x)^2}{N}}{N}$$

$$= 624 - \frac{\frac{(92)^2}{14}}{14}$$

$$= 624 - \frac{\frac{8464}{14}}{14}$$

$$= 624 - \frac{604{,}571}{14}$$

$$= 624 - 43,1836$$

= 580, 8416

M $= \frac{\sum X}{N}$

$= \frac{92}{14}$

= 6, 57

And then, the researcher consult the value of Variance total (Vt) and Mean of posttest score (M) to the K-R21 formula.

$r_{11} = (\frac{k}{k-1}) ¿)$

$= (\frac{10}{10-1}) (1 - \frac{6,57(10-6,57)}{10.580,8416})$

$= \frac{10}{9} (1 - \frac{6,57(3,43)}{5808,416})$

$= \frac{10}{9} (1 - \frac{22,5351}{5808,416})$

$= \frac{10}{9}(1-0,0038)$

= 1,111x (0, 9962)

= 1, 1067

Based on the calculation above, it is found that the reliability of pretest is 1, 0960, while the reliability

of posttest is 1, 1067. It should be consulted to r-table to know whether the test is reliable or not. The number of sample (N) is 14, and df (the degree of freedom) is N-2, so the degree of freedom: 14-2=12. The critical value of r-table on the level of significance 5% is 0,532, where on the level of significance 1% is 0,661.

And then the researcher compares with r-table after knowing the reliability of pretest and posttest: (See Appendix 9 and 10)

Based on the table above, it can be seen that the reliability of pretest (r-value) is higher than r-table either on the level of significance 5% (1,0960> 0,532) or the level significance 1% (1,0960 > 0,661), and the reliability of posttest is higher than r-table either on the level of significance 5% (1,1067 > 0,532) or the level of significance 1% (1,1067 > 0,661).

From the explanation above, it can be concluded that the instruments (pretest and posttest) are reliable.

d. Data Analysis

The next step after obtaining the score of pretest and posttest is researcher would analyze the data. This research uses t-test formula especially one

$$t = \frac{Md}{\sqrt{\sum x^2 d}}$$

group pretest posttest design to analyze the data. The formula of t-test (pretest and posttest) as below:

Where :

Md : mean of difference between pretest and posttest (**Md=**$\frac{\sum d}{N}$)

Xd : deviation of each subject (**d – Md**)

$\sum x^2$d : the sum of quadrate deviation

N : sample of subject

d.b : determined with N – 1

The computation of mean of difference of pretest and posttest in table: (See Appendix)

Md $= \frac{\sum d}{N}$

$= \frac{194}{14}$

= 13,857

After counting Md (mean of difference of pretest and posttest), the next step is the researcher would determine xd (deviation of each subject) and

x^2d (the sum of quadrate deviation). Computation of them is in table: (See Appendix 12)

Based on the table above, to know that the number of subject is 14 students, ∑Md is 13,857, and $\sum x^2$d is 7208,366368. And then the researcher would analyze those data by using t-test formula as follow:

$$t = \frac{Md}{\sqrt{\frac{\sum x^2 d}{N(N-1)}}}$$

$$= \frac{13,857}{\sqrt{\frac{7208,366368}{14(14-1)}}}$$

$$= \frac{13,857}{\sqrt{\frac{7208,366368}{14\,x\,13}}}$$

$$= \frac{13,857}{\sqrt{\frac{7208,366368}{182}}}$$

$$= \frac{13,857}{\sqrt{39,60640861}}$$

$$= \frac{13,857}{6,29336226}$$

t_v = 2, 20184369

Based on the calculation above, the researcher finds t_v or t-value = 2, 20184369. And then it must be done the process of hypothesis testing to know whether null hypothesis is accepted or rejected.

B. Hypothesis Testing

From the calculation above, it can be known that the t-value is 2, 20184369. The researcher determines the value of degree of freedom (df) to know the result of hypothesis testing. Formula of df is N-1, N is number of participants. It is 14 students, so the degree of freedom is:

df = N-1

= 14-1

= 13

After researcher knowing the value of d, the next is consulted to the t-table.[1] It can be seen in the table: (See Appendix 13)

Based on the table above, it can be known that t-value is higher than t-table either on the level of significance 5% (2, 20184369 > 2,16) or on the level of significance 1% (2, 20184369 > 3,01).

From the result above, it can be concluded that Ha (alternative hypothesis) is accepted, and Ho (null hypothesis) is rejected. The researcher states that students who are taught by free fire game have higher achievement than before being taught by free fire game on students' vocabulary mastery at the eleventh grade of MA Hidayatut-Thalbin at Rembang Pragaan Daya Sumenep.

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1 Anas, Sudijono, *Pengantar Statistik pendidikan,*(Jakarta: Raja Wali Press, 2009), 401

C. DISCUSSION

In this research, there are two problems. The first is whether the students who are taught by free fire game have higher achievement than before being taught by free fire game on their vocabulary mastery at the eleventh grade of MA Hidayatut-Thalibin at Rembang Pragaan daya Sumenep. Free Fire is a war game that collects up to fifty players on a large map, where each player must kill each other and become the only person who can survive to become the winner.[2] Researcher has to analyze the data by using the formula of t-test (pretest and posttest).

And also present the statistical analysis that t-value is higher than t-table either on the level significance 5% (2, 20184369 > 2,16) or on the level of significance 1% (2, 20184369 > 3,01), it means that the eleventh grade of MA Hidayatut-Thalibin at Rembang Pragaan Daya Sumenep taught using free fire game have higher vocabulary mastery.

The second is to measure the significant effect of free fire game to the students' vocabulary mastery at the eleventh grade of MA Hidayatut-Thalibin at Rembang Pragaan Daya Sumenep.

The researcher uses t-test formula (pretest and posttest) to analyze the data. From thus result, it can be concluded that how significance is the

2https://id.m.wikipedia.org/wiki/Garena_Free_Fire. Accessed on friday 19 february 2021 at 13:46

effect of free fire game to the students' vocabulary mastery at the eleventh grade of MA Hidayatut-Thalibin at Rembang Pragaan Daya Sumenep.