

CHAPTER IV

RESEACRH FINDING AND DISCUSSION

This chapter will explain the finding and discussion of the research. The finding present about what the researcher found during the study, based on the instruments that are test and documentations. The items that will be presented are presentation of data hypothesis and discussion.

A. Presentation of the data

This research was held 16th of September at Eighth Grade of MTS AL-Hasan Proppo in academic year 2020/2021. The respondent of this research was the students of VIII A that consists of 34 students. In this chapter, the researcher wants to describe about the result of the research instruments to collect data. They are test and documentation. Test is given to know the student's vocabulary achievement. The researcher calculates by using T test formula.

1. The result of Data Test

Test is the main instrument in this research because by using test the researcher knows about the result of research. The data which are collected from the test instrument will be analyzed by using statistical analysis.

The researcher uses two kinds of test. These are pre-test and post-test. The researcher use some questions that would be answered into form to measure the students' vocabulary skill achievement. The test consist of twenty questions that used in pre-test and post-test. In scoring the test's answers, the researcher 5 score for each item number, so the total score that can be got by the students are 100 score

if they can answer all of the question correctly. Pre-test and post-test were given by the researcher in the different time. Pre-test was given by the researcher after the students got the material but without using ice breaking. In this case, the researcher determines two variables of the obtained test values.

a. The Result of Pre-test

The researcher did the pre-test to measure the vocabulary achievement before being given the treatment by using ice breaking. The researcher gave the pre-test at 16 September 2021 at 10.00 AM. The result of the pre-test as the following:

Table 1

The score of pre-test

N0	Students	Score pre-test
1	ROBIATUL ADANIYAH	40
2	FADLIYEH	45
3	FITRIYA	50
4	HALIMAH	60
5	IKLIMAH	65
6	KAMELIA	70
7	MARIYAH	35
8	MUSLIMAH	40

9	RISKA UMAMI	80
10	SAQILA	60
11	SITI AISYAH	50
12	TIKA	75
13	BAIM	45
14	DEDI HABIBURROCHMAN	50
15	ABDUS SAFI	50
16	HABIBI	65
17	HUSNAN	65
18	MAULANA ISHAK	70
19	AHMAD NAWAWI	75
20	ROHMAN	60
21	SYA`RONI	40
22	SYAHRUL MUBAROK	35
23	SYAFIRA	50
24	UWAIS AL-QURONI	70

25	ABUL HIKAM	65
26	WIKA ROAINI	50
27	SAFAUL ASROR	35
28	MUKODDAS	20
29	MAULIDIYAH	10
30	MOH FENDI	15
31	ANA FITRIYAH	55
32	MAUGHFIROH	20
33	LILIS SULALAH	45
34	WAHYUDI	25
Total		1685

Based on the table above, the total score is 1685, to calculate mean of pre-test, the researcher use the following formula:

$$X = \frac{\text{Score}}{N}$$

$$= \frac{1685}{34}$$

$$= 49,5$$

Explanation : \bar{X} = Mean score pre-test

$\sum x$ = Total score of pre-test

N = Total of students taking test

b. The Result of Treatment

The researcher gave a treatment used two times meeting. The first meeting on Monday 20 september 2021 at 07.00 AM, and the second meeting the researcher gave a treatment again on Thursday 23 september 2021 is done. The first treatment, the researcher conveyed the material of concern using ice breaking to measure vocabulary mastery, and the second treatment, the researcher asked the students to make some groups, then the researcher give a game conveyed the material about many vocabulary. After that, the researcher asked the students to write the unfamiliar words for them.

c. The Result of Post-test

The researcher did the post-test to measure the vocabulary achievement after the treatment given by using ice breaking. Then the researcher gave the exercise again as post-test student. The researcher gave the post-test at 27 september 2021 at 07.00 AM. The result of the post-test as the following:

Table 2

The score of post-test

N0	Students	Score post-test
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1	ROBIATUL ADANIYAH	75
2	FADLIYEH	85
3	FITRIYA	75
4	HALIMAH	75
5	IKLIMAH	80
6	KAMELIA	75
7	MARIYAH	70
8	MUSLIMAH	75
9	RISKA UMAMI	95
10	SAQILA	80
11	SITI AISYAH	70
12	TIKA	90
13	BAIM	80
14	DEDI HABIBURROCHMAN	85
15	ABDUS SAFI	80
16	HABIBI	95

17	HUSNAN	85
18	MAULANA ISHAK	85
19	AHMAD NAWAWI	90
20	ROHMAN	90
21	SYA`RONI	95
22	SYAHRUL MUBAROK	85
23	SYAFIRA	80
24	UWAIS AL-QURONI	90
25	ABUL HIKAM	95
26	WIKAROAINI	75
27	SAFAUL ASROR	90
28	MUKODDAS	85
29	MAULIDIYAH	75
30	MOH FENDI	60
31	ANA FITRIYAH	70
32	MAUGHFIROH	80

33	LILIS SULALAH	85
34	WAHYUDI	75
Total		2.765

$$Y = \frac{\text{score}}{N}$$

$$= \frac{2.765}{34}$$

$$= 81,3$$

Explanation : Y = Mean score pre-test

$\sum x$ = Total score of pre-test

N = Total of students taking test

Table 3

The Mean of pre-test and post-test Achievement

Group	Number of students	Score	Mean
Pre-test	34	1685	49,5
Post-test	34	2765	81,3

2. Data Analysis

As soon as the research respondents have done the research test, the researcher collected and analyzed the data. The test must be valid and reliable. So, the researcher did test of the instrument.

a. Validity of the Test Instrument

The function of validity is to make sure that data obtained by the researcher above is valid. The validity of test ensures which this research is content validity approvable. Before giving the test to the students, the researcher showed the test sheet to the English teacher of the eight grade of MTS AL-Hasan ProppoPamekasan. To check the test. the researcher conducted the test by using content validity.

b. Reliability of the Test Instrument

A good test must be valid and reliable. Besides, the index of validity, it is also to know the reliability of the test instrument. In this study, the researcher used pre-test to know whether the instrument are reliable or not. Furthermore, the researcher calculates the score of pre-test by Alpha. The formula is :

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

Where:

r_{11} = instrument reliability

k = the number of items of questions

$\sum \sigma b^2$ = the number of items variance

$\sigma^2 t$ = total variance

To make easier in analyze the data obtained from research (pre-test and post-test score), the researcher use steps are follow:

1) Reliability of Pre-test

- a) Make a table of test item's analysis which contain of number of sample, number of test item, the score of each subject, quadrate of total score, and sum of each item's score. The data can be seen un table 4 (APPENDIX 2)
- b) Count the quadrate of each item score and sum of each item score wjich was quadrate. The data can be seen in table 4
- c) Put the result under sum of each item's score in the table preparation to find the coefficiency of alpha. The table can be seen in table 4
- d) Count the each variance item by subtracting the sum quadrate of each item with (quadrate of each item's score total divided with the number of the sample. Count is from the first item until the last item

$$\sigma^2 (1) = \frac{525 - \frac{105^2}{34}}{34} = \frac{525 - 324,26}{34} = \frac{200,74}{34} = 5,90$$

$$\sigma^2 (2) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (3) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (4) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (5) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (6) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (7) = \frac{500 - \frac{100^2}{34}}{34} = \frac{500 - 294,117}{34} = \frac{294,114}{34} = 8,65$$

$$\sigma^2 (8) = \frac{450 - \frac{90^2}{34}}{34} = \frac{450 - 238,23}{34} = \frac{211,77}{34} = 6,22$$

$$\sigma^2 (9) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (10) = \frac{500 - \frac{100^2}{34}}{34} = \frac{500 - 294,117}{34} = \frac{294,114}{34} = 8,65$$

$$\sigma^2 (11) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{1,54}{34} = 0,05$$

$$\sigma^2 (12) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{1,54}{34} = 0,05$$

$$\sigma^2 (13) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (14) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (15) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (16) = \frac{375 - \frac{75^2}{34}}{34} = \frac{375 - 165,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (17) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (18) = \frac{275 - \frac{55^2}{34}}{34} = \frac{275 - 88,97}{34} = \frac{186,0}{34} = 5,47$$

$$\sigma^2 (19) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (20) = \frac{375 - \frac{75^2}{34}}{34} = \frac{375 - 165,44}{34} = \frac{209,56}{34} = 6,16$$

- e) Count the sum of variance item by testing the result of first item's variance until the last item's variance

$$\sum \sigma b^2 = 107,44$$

- f) Count the total variance by subtracting the sum quadrate of total score of each sample with (quadrate of total score of each item divided with the number of samples), and the result of divided with the number of the sample.

$$\sigma^2 t = 242,32$$

- g) Enter the result of the sum of variance item and the total variance to the formula of alpha.

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

$$r_{11} = \left[\frac{20}{20-1} \right] \left[1 - \frac{107,44}{242,32} \right]$$

$$r_{11} = \frac{20}{19} (1 - 0,44)$$

$$r_{11} = 1,053 (0,56)$$

$$r_{11} = 0,589$$

From the computation above, it is found out that r_{11} (the total of reliability test is 0,589). Whereas the number of item test is 20. To know whether or not the test instrument reliable, we have consult the value of r_{11} to r table. If the value of r_{11} is higher than the value of r table, so the test instrument (pre-test) is reliable.

2) Reliability of Post-test

- Make a table of test item's analysis which contain of number of sample, number of test item, the score of each subject, square of total score, and sum of each item's score. The data can be seen on table 5 (APPENDIX 3)
- Count the square of each item score and sum of each item score which was square. The data can be seen in table 5
- Put the result under sum of each item's score in the table preparation to find the coefficient of alpha. The table can be seen in table 5

d) Count the each variance item by subtracting the sum quadrate of each item with (quadrate of each item's score total divided with the number of the sample. Count is from the first item until the last item

$$\sigma^2 (1) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

$$\sigma^2 (2) = \frac{750 - \frac{150^2}{34}}{34} = \frac{750 - 661,76}{34} = \frac{88,25}{34} = 2,59$$

$$\sigma^2 (3) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,13$$

$$\sigma^2 (4) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (5) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (6) = \frac{625 - \frac{125^2}{34}}{34} = \frac{625 - 459,55}{34} = \frac{165,45}{34} = 4,86$$

$$\sigma^2 (7) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (8) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (9) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{194,12}{34} = 5,70$$

$$\sigma^2 (10) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (11) = \frac{775 - \frac{155^2}{34}}{34} = \frac{775 - 706,61}{34} = \frac{68,39}{34} = 2,01$$

$$\sigma^2 (12) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (13) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (14) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (15) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (16) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (17) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (18) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

$$\sigma^2 (19) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (20) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

- e) Count the sum of variance item by testing the result of first item's variance until the last item's variance

$$\sum \sigma b^2 = 77,78$$

- f) Count the total variance by subtracting the sum quadrate of total score of each sample with (quadrate of total score of each item divided with the number of samples), and the result of divided with the number of the sample.

$$\sigma^2 t = \frac{228875 - \frac{2765^2}{34}}{34} = \frac{228875 - 224859,55}{34} = \frac{4015,45}{34} = 118,11$$

- g) Enter the result of the sum of variance item and the total variance to the formuka of alpha.

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

$$r_{11} = \left[\frac{20}{20-1} \right] \left[1 - \frac{77,78}{118,11} \right]$$

$$r_{11} = \frac{20}{19} (1 - 0,658)$$

$$r_{11} = 1,053 (0,342)$$

$$r_{11} = 0,460$$

From the computation above, it is find out that r_{11} (the total of reliability test is 0,460. Whereas the number of item test is 20. To know whether or not the test instrument reliable, we have consult the value of r_{11} to r table. If the value of r_{11} is higher than the value of r table, so the test instrument (pre-test) is reliable.

Table 6

The value of r table

N	Significant level	r-table	r-value (pre-test)	r-value (post-test)
	5%	0,339	0,589	0,460
34	1%	0,436	0,589	0,460

Before testing hypothesis, the researcher must analyze the data, and then the researcher can get conclusion from the study. The researcher use t-test to analyze the data that includes two test of instrument. The tests are in pre-test and post-test form.

After knowing the computation of dependent t test, the next step is counting t-test. According to Sudjiono book, there are some steps in looking for t-test, the steps of counting t-test as follow:

- a) Looking for D (difference) between score of pre-test and post-test, the calculation is $D = (X- Y)$. See the table above

Table 7

The score of Dependent test

NO	Score of pre-test (X)	Score of post-test (Y)	$D = (X - Y)$	$D^2 = (X_2 - X_1)^2$
1	40	75	-35	1225
2	45	85	-40	1600
3	50	75	-25	625
4	60	75	-15	225
5	65	80	-15	225
6	70	75	-5	25
7	35	70	-35	1225
8	40	75	-35	1225
9	80	95	-15	225
10	60	80	-20	400
11	50	70	-20	400
12	75	90	-15	225
13	45	80	-40	1600

14	50	85	-35	1225
15	50	80	-30	900
16	65	95	-30	900
17	65	85	-20	400
18	70	85	-15	225
19	75	90	-15	225
20	60	90	-30	900
21	40	95	-55	3025
22	35	85	-50	2500
23	50	80	-30	900
24	70	90	-20	400
25	65	95	-30	900
26	50	75	-25	625
27	75	90	-15	225
28	20	85	-65	4225
29	10	75	-65	4225

30	15	60	-35	1225
31	55	70	-15	225
32	20	80	-60	3600
33	45	85	-40	1600
34	25	75	-50	2500
	SUM		($\sum d = -1.045$)	40.175

b) Finding the difference (d) of pre-test post-test

In this step that must be done by the researcher is to calculate d score. (d) was gotten by subtracting the pre-test score with the post-test score (X-Y). The obtained d can be seen in table 7.

c) Counting the mean of difference (Md) by totaling the sun of difference ($\sum d$) and dividing it to the sum of object research (N), the value of (Md) as follow:

$$\begin{aligned}
 Md &= \frac{\sum Md}{34} \\
 &= \frac{-1.045}{34} \\
 &= -30,73
 \end{aligned}$$

d) Square all of D score, then add all of square D score in the table 3 the researcher obtain, $\sum D^2 = 40.17$

e) Determining standard deviation from D by formula :

$$\begin{aligned}SD_D &= \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2} \\&= \sqrt{\frac{40.175}{34} - \left(\frac{-1.045}{34}\right)^2} \\&= \sqrt{1181,6 - 30,735^2} \\&= \sqrt{1181,6 - 944,64} \\&= \sqrt{236.96} \\&= 15,39\end{aligned}$$

f) Determining standard error of mean by formula :

$$\begin{aligned}SE_{MD} &= \frac{SD_D}{\sqrt{N-1}} \\&= \frac{15,38}{\sqrt{34-1}} \\&= \frac{15,39}{\sqrt{33}} \\&= \frac{15.39}{5,74} \\&= 2,68\end{aligned}$$

g) Determining t_0 formula :

$$t_0 = \frac{MD}{SE_{MD}}$$

$$\begin{aligned} &= \frac{30,73}{2,68} \\ &= 11,466 \end{aligned}$$

As seen in the analysis above, we know that the value of t obtained (t_0) is 11,466. It is the value which describes the degree of the effectiveness of treatment which is given by the researcher to the sample after give pre test. In other word, the effectiveness degree of treatment or the using of ice breaking in this research is 11,466. It is suitable with the essential purpose of the experiment research wants to observe the effect or the result of treatment which is done by researcher. To know whether alternative hypothesis is rejected or accepted, it must be done of the process of hypothesis testing

B. Hypothesis testing

To know the alternative hypothesis H_a (Alternative hypothesis) is accepted or rejected, the researcher has to consult the value of t obtained (t_0) to t table (t_t). If the value of (t_0) is higher or at least have the same values of t_t so the alternative hypothesis is accepted. However if (t_0) is lower than (t_t), the alternative hypothesis is rejected. In this research, the researcher used 5% level significance.

Before the researcher determines the value of table (t_t), the researcher must calculate the number of df (degrees of freedom) by deducting sum of subject with 1 ($df = N-1$). where N is number of participants ($N=34$), so the degree of freedom is $34-1 = 33$. After knowing df, it is consulted to (t_0) on the level of significance 5% The value of t table can be seen in table below.

Table 8

Critical value of t-test

Df	5%	1%
31	2,038	2,744
32	2,036	2,738
33	2,034	2,732
34	2,030	2,726
35	2,030	2,720

Based on the table, the table of df : 33 with significance 5% is 2,034 < 11,466 or 1% is 2,733 < 11,466. To answer the second hypothesis, you must convert the decimal to percent. Decimal of r value is 11,466 after being changed to the form percent is 1146,6%. From the result above, it can be concluded that Ha (Alternative Hypothesis) is accepted, and the Ho (Null Hypothesis) is rejected. It proves that the using ice breaking gives good effect on the students vocabulary achievement because the students could prove their ability in post test after giving treatment by using ice breaking by the teacher. So, the hypothesis of researcher can be proved by the accepted the alternative hypothesis that the students taught by using ice breaking in vocabulary have higher achievement than the students who are not.

C. Discussion

This chapter presents the answer of the research problems. This research was to find out two research problems. The first was to find out whether the Eight grade students taught by using ice breaking have better on vocabulary achievement than they did not at MTs Al-Hasan ProppoPamekasan. The second was to find out the effect of using ice breaking at eight grade of MTs AL-Hasan ProppoPamekasan. They are follow:

1. Do the students who taught by using ice breaking have better vocabulary achievement than before getting treatment?

As noted earlier, that the first research problem is whether the eight grade students taught by using ice breaking have better achievement on vocabulary at MTs AL-Hasan ProppoPamekasan. To answer this, the researcher has to analyze the data by applying the formula that was determined to analysis the data. In deciding whether the eight grade students taught vocabulary by using ice breaking have better achievement than they did not, the researcher consulted the t obtained (t_0) to the value of t table (t_t), if the obtained is higher then the value t table ($t_0 \geq t_t$), the eight grade students taught by using ice breaking have better achievement in teaching vocabulary, and if it is not ($t_0 \leq t_t$), the eight grade students taught by using ice breaking have not better achievement in teaching vocabulary. Based on data analysis above, it showed that the obtained t is higher that the value of t table. This can be seen from the result of t_{test} in previous chapter that the value of t_{test} is higher than t_{table} either in 5% or 1% (5% is $2.034 < 11,466$) or 1% is $2,732 < 11,466$). So, H_a (Alternative Hypothesis) is accepted, and the H_0 (Null Hypothesis) is rejected. It means that the eight

grade students taught by using ice breaking have higher achievement in teaching vocabulary at MTs AL-Hasan ProppoPamekasan.

2. How statistically significance the effect of using ice breaking on students' vocabulary achievement at eight grade of MTS AL-Hasan ProppoPamekasan?

There are 34 samples that were investigated by using t-test as instrument. The researcher used t test in analyzing the data. In doing t test, the researcher used two data; they are pre test and post test. t obtained value which is gotten by researcher using t test formula is 11,466. So that, 11,466 is the value which describe the degree of the effectiveness of treatment which is given by the researcher to the sample after give pre test. in other word, the effectiveness degree of treatment or using ice breaking in this research is 11,466.

It is suitable with the essential purpose of the experiment research is the researcher wants to observe the effect or the result of treatment which is done by the researcher. To know the t obtained (11,466) is higher or lower, the researcher must to compare with t table value. Before the researcher determines the value of t table (t_t), the researcher must calculate the number of df (degree of freedom) by detracting sum of subject with $(df=N-1)$.

Based on the table, the table of df : 33 with significance 5% is $2,034 < 11,466$ or 1% is $2,733 < 11,466$. From the result above, it can be concluded that H_a (Alternative Hypothesis) is accepted, and the H_o (Null Hypothesis) is rejected. It proves that the using ice breaking gives good effect on the students vocabulary achievement because the students could prove their ability in post test after giving treatment by using ice breaking by the teacher. So, the hypothesis of researcher can be proved by the accepted the alternative

hypothesis that the students taught by using ice breaking in vocabulary have higher achievement than the students who are not.

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2. The result of Data Test

Test is the main instrument in this research because by using test the researcher knows about the result of research. The data which are collected from the test instrument will be analyzed by using statistical analysis.

The researcher uses two kinds of test. These are pre-test and post-test. The researcher use some questions that would be answered into form to measure the

students' vocabulary skill achievement. The test consist of twenty questions that used in pre-test and post-test. In scoring the test's answers, the researcher 5 score for each item number, so the total score that can be got by the students are 100 score if they can answer all of the question correctly. Pre-test and post-test were given by the researcher in the different time. Pre-test was given by the researcher after the students got the material but without using ice breaking. In this case, the researcher determines two variables of the obtained test values.

b. The Result of Pre-test

The researcher did the pre-test to measure the vocabulary achievement before being given the treatment by using ice breaking. The researcher gave the pre-test at 16 September 2021 at 10.00 AM. The result of the pre-test as the following:

Table 1

The score of pre-test

N0	Students	Score pre-test
1	ROBIATUL ADANIYAH	40
2	FADLIYEH	45
3	FITRIYA	50
4	HALIMAH	60
5	IKLIMAH	65
6	KAMELIA	70

7	MARIYAH	35
8	MUSLIMAH	40
9	RISKA UMAMI	80
10	SAQILA	60
11	SITI AISYAH	50
12	TIKA	75
13	BAIM	45
14	DEDI HABIBURROCHMAN	50
15	ABDUS SAFI	50
16	HABIBI	65
17	HUSNAN	65
18	MAULANA ISHAK	70
19	AHMAD NAWAWI	75
20	ROHMAN	60
21	SYA`RONI	40
22	SYAHRUL MUBAROK	35

23	SYAFIRA	50
24	UWAIS AL-QURONI	70
25	ABUL HIKAM	65
26	WIKA ROAINI	50
27	SAFAUL ASROR	35
28	MUKODDAS	20
29	MAULIDIYAH	10
30	MOH FENDI	15
31	ANA FITRIYAH	55
32	MAUGHFIROH	20
33	LILIS SULALAH	45
34	WAHYUDI	25
Total		1685

Based on the table above, the total score is 1685, to calculate mean of pre-test, the researcher use the following formula:

$$X = \frac{\text{Score}}{N}$$

$$= \frac{1685}{34}$$

$$= 49,5$$

Explanation : \bar{X} = Mean score pre-test

$\sum x$ = Total score of pre-test

N = Total of students taking test

b. The Result of Treatment

The researcher gave a treatment used two times meeting. The first meeting on Monday 20 september 2021 at 07.00 AM, and the second meeting the researcher gave a treatment again on Thursday 23 september 2021 is done. The first treatment, the researcher conveyed the material of concern using ice breaking to measure vocabulary mastery, and the second treatment, the researcher asked the students to make some groups, then the researcher give a game conveyed the material about many vocabulary. After that, the researcher asked the students to write the unfamiliar words for them.

c. The Result of Post-test

The researcher did the post-test to measure the vocabulary achievement after the treatment given by using ice breaking. Then the researcher gave the exercise again as post-test student. The researcher gave the post-test at 27 september 2021 at 07.00 AM. The result of the post-test as the following:

Table 2

The score of post-test

N0	Students	Score post-test
1	ROBIATUL ADANIYAH	75
2	FADLIYEH	85
3	FITRIYA	75
4	HALIMAH	75
5	IKLIMAH	80
6	KAMELIA	75
7	MARIYAH	70
8	MUSLIMAH	75
9	RISKA UMAMI	95
10	SAQILA	80
11	SITI AISYAH	70
12	TIKA	90
13	BAIM	80
14	DEDI HABIBURROCHMAN	85
15	ABDUS SAFI	80

16	HABIBI	95
17	HUSNAN	85
18	MAULANA ISHAK	85
19	AHMAD NAWAWI	90
20	ROHMAN	90
21	SYA`RONI	95
22	SYAHRUL MUBAROK	85
23	SYAFIRA	80
24	UWAIS AL-QURONI	90
25	ABUL HIKAM	95
26	WIKI ROAINI	75
27	SAFAUL ASROR	90
28	MUKODDAS	85
29	MAULIDIYAH	75
30	MOH FENDI	60
31	ANA FITRIYAH	70

32	MAUGHFIROH	80
33	LILIS SULALAH	85
34	WAHYUDI	75
Total		2.765

$$Y = \frac{\text{score}}{N}$$

$$= \frac{2.765}{34}$$

$$= 81,3$$

Explanation : Y = Mean score pre-test

$\sum x$ = Total score of pre-test

N = Total of students taking test

Table 3

The Mean of pre-test and post-test Achievement

Group	Number of students	Score	Mean
Pre-test	34	1685	49,5
Post-test	34	2765	81,3

2. Data Analysis

As soon as the research respondents have done the research test, the researcher collected and analyzed the data. The test must be valid and reliable. So, the researcher did test of the instrument.

a. Validity of the Test Instrument

The function of validity is to make sure that data obtained by the researcher above is valid. The validity of test ensures which this research is content validity approvable. Before giving the test to the students, the researcher showed the test sheet to the English teacher of the eight grade of MTS AL-Hasan ProppoPamekasan. To check the test, the researcher conducted the test by using content validity.

b. Reliability of the Test Instrument

A good test must be valid and reliable. Besides, the index of validity, it is also to know the reliability of the test instrument. In this study, the researcher used pre-test to know whether the instrument are reliable or not. Furthermore, the researcher calculates the score of pre-test by Alpha. The formula is :

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

Where:

r_{11} = instrument reliability

k = the number of items of questions

$\sum \sigma b^2$ = the number of items variance

$\sigma^2 t$ = total variance

To make easier in analyze the data obtained from research (pre-test and post-test score), the researcher use steps are follow:

1) Reliability of Pre-test

- h) Make a table of test item's analysis which contain of number pof sample, number of test item, the score of each subject, quadrate of total score, and sum of each item's score. The data can be seen un table 4 (APPENDIX 2)
- i) Count the quadrate of each item score and sum of each item score wjich was quadrate. The data can be seen in table 4
- j) Put the result under sum of each item's score in the table preparation to find the coefficiency of alpha. The table can be seen in table 4
- k) Count the each variance item by subtracting the sum quadrate of each item with (quadrate of each item's score total divided with the number of the sample. Count is from the first item until the last item

$$\sigma^2 (1) = \frac{525 - \frac{105^2}{34}}{34} = \frac{525 - 324,26}{34} = \frac{200,74}{34} = 5,90$$

$$\sigma^2 (2) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (3) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (4) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (5) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (6) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (7) = \frac{500 - \frac{100^2}{34}}{34} = \frac{500 - 294,117}{34} = \frac{294,114}{34} = 8,65$$

$$\sigma^2 (8) = \frac{450 - \frac{90^2}{34}}{34} = \frac{450 - 238,23}{34} = \frac{211,77}{34} = 6,22$$

$$\sigma^2 (9) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (10) = \frac{500 - \frac{100^2}{34}}{34} = \frac{500 - 294,117}{34} = \frac{294,114}{34} = 8,65$$

$$\sigma^2 (11) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{1,54}{34} = 0,05$$

$$\sigma^2 (12) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{1,54}{34} = 0,05$$

$$\sigma^2 (13) = \frac{475 - \frac{95^2}{34}}{34} = \frac{475 - 265,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (14) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (15) = \frac{350 - \frac{70^2}{34}}{34} = \frac{350 - 144,12}{34} = \frac{205,88}{34} = 6,05$$

$$\sigma^2 (16) = \frac{375 - \frac{75^2}{34}}{34} = \frac{375 - 165,44}{34} = \frac{209,56}{34} = 6,16$$

$$\sigma^2 (17) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (18) = \frac{275 - \frac{55^2}{34}}{34} = \frac{275 - 88,97}{34} = \frac{186,0}{34} = 5,47$$

$$\sigma^2 (19) = \frac{325 - \frac{65^2}{34}}{34} = \frac{325 - 324,26}{34} = \frac{124,26}{34} = 3,65$$

$$\sigma^2 (20) = \frac{375 - \frac{75^2}{34}}{34} = \frac{375 - 165,44}{34} = \frac{209,56}{34} = 6,16$$

- l) Count the sum of variance item by testing the result of first item's variance until the last item's variance

$$\sum \sigma b^2 = 107,44$$

- m) Count the total variance by subtracting the sum quadrate of total score of each sample with (quadrate of total score of each item divided with the number of samples), and the result of divided with the number of the sample.

$$\sigma^2 t = 242,32$$

- n) Enter the result of the sum of variance item and the total variance to the formula of alpha.

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

$$r_{11} = \left[\frac{20}{20-1} \right] \left[1 - \frac{107,44}{242,32} \right]$$

$$r_{11} = \frac{20}{19} (1 - 0,44)$$

$$r_{11} = 1,053 (0,56)$$

$$r_{11} = 0,589$$

From the computation above, it is found out that r_{11} (the total of reliability test is 0,589). Whereas the number of item test is 20. To know whether or not the test instrument is reliable, we have consulted the value of r_{11} to r table. If the value of r_{11} is higher than the value of r table, so the test instrument (pre-test) is reliable.

2) Reliability of Post-test

- h) Make a table of test item's analysis which contains number of sample, number of test item, the score of each subject, square of total score, and sum of each item's score. The data can be seen on table 5 (APPENDIX 3)
- i) Count the square of each item score and sum of each item score which was square. The data can be seen in table 5
- j) Put the result under sum of each item's score in the table preparation to find the coefficient of alpha. The table can be seen in table 5

k) Count the each variance item by subtracting the sum quadrate of each item with (quadrate of each item's score total divided with the number of the sample. Count is from the first item until the last item

$$\sigma^2 (1) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

$$\sigma^2 (2) = \frac{750 - \frac{150^2}{34}}{34} = \frac{750 - 661,76}{34} = \frac{88,25}{34} = 2,59$$

$$\sigma^2 (3) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,13$$

$$\sigma^2 (4) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (5) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (6) = \frac{625 - \frac{125^2}{34}}{34} = \frac{625 - 459,55}{34} = \frac{165,45}{34} = 4,86$$

$$\sigma^2 (7) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (8) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (9) = \frac{550 - \frac{110^2}{34}}{34} = \frac{550 - 355,88}{34} = \frac{194,12}{34} = 5,70$$

$$\sigma^2 (10) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (11) = \frac{775 - \frac{155^2}{34}}{34} = \frac{775 - 706,61}{34} = \frac{68,39}{34} = 2,01$$

$$\sigma^2 (12) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (13) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (14) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (15) = \frac{650 - \frac{130^2}{34}}{34} = \frac{650 - 497,05}{34} = \frac{159,95}{34} = 4,49$$

$$\sigma^2 (16) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (17) = \frac{675 - \frac{135^2}{34}}{34} = \frac{675 - 536,02}{34} = \frac{138,98}{34} = 4,08$$

$$\sigma^2 (18) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

$$\sigma^2 (19) = \frac{725 - \frac{145^2}{34}}{34} = \frac{725 - 618,38}{34} = \frac{106,62}{34} = 3,14$$

$$\sigma^2 (20) = \frac{700 - \frac{140^2}{34}}{34} = \frac{700 - 578,47}{34} = \frac{123,53}{34} = 3,63$$

- l) Count the sum of variance item by testing the result of first item's variance until the last item's variance

$$\sum \sigma b^2 = 77,78$$

- m) Count the total variance by subtracting the sum quadrate of total score of each sample with (quadrate of total score of each item divided with the number of samples), and the result of divided with the number of the sample.

$$\sigma^2 t = \frac{228875 - \frac{2765^2}{34}}{34} = \frac{228875 - 224859,55}{34} = \frac{4015,45}{34} = 118,11$$

- n) Enter the result of the sum of variance item and the total variance to the formuka of alpha.

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma^2 t} \right]$$

$$r_{11} = \left[\frac{20}{20-1} \right] \left[1 - \frac{77,78}{118,11} \right]$$

$$r_{11} = \frac{20}{19} (1 - 0,658)$$

$$r_{11} = 1,053 (0,342)$$

$$r_{11} = 0,460$$

From the computation above, it is find out that r_{11} (the total of reliability test is 0,460. Whereas the number of item test is 20. To know whether or not the test instrument reliable, we have consult the value of r_{11} to r table. If the value of r_{11} is higher than the value of r table, so the test instrument (pre-test) is reliable.

Table 6

The value of r table

N	Significant level	r-table	r-value (pre-test)	r-value (post-test)
	5%	0,339	0,589	0,460
34	1%	0,436	0,589	0,460

Before testing hypothesis, the researcher must analyze the data, and then the researcher can get conclusion from the study. The researcher use t-test to analyze the data that includes two test of instrument. The tests are in pre-test and post-test form.

After knowing the computation of dependent t test, the next step is counting t-test. According to Sudjiono book, there are some steps in looking for t-test, the steps of counting t-test as follow:

- h) Looking for D (difference) between score of pre-test and post-test, the calculation is $D = (X - Y)$. See the table above

Table 7

The score of Dependent test

NO	Score of pre-test (X)	Score of post-test (Y)	$D = (X - Y)$	$D^2 = (X_2 - X_1)^2$
1	40	75	-35	1225
2	45	85	-40	1600
3	50	75	-25	625
4	60	75	-15	225
5	65	80	-15	225
6	70	75	-5	25
7	35	70	-35	1225
8	40	75	-35	1225
9	80	95	-15	225
10	60	80	-20	400
11	50	70	-20	400
12	75	90	-15	225
13	45	80	-40	1600

14	50	85	-35	1225
15	50	80	-30	900
16	65	95	-30	900
17	65	85	-20	400
18	70	85	-15	225
19	75	90	-15	225
20	60	90	-30	900
21	40	95	-55	3025
22	35	85	-50	2500
23	50	80	-30	900
24	70	90	-20	400
25	65	95	-30	900
26	50	75	-25	625
27	75	90	-15	225
28	20	85	-65	4225
29	10	75	-65	4225

30	15	60	-35	1225
31	55	70	-15	225
32	20	80	-60	3600
33	45	85	-40	1600
34	25	75	-50	2500
	SUM		($\sum d = -1.045$)	40.175

i) Finding the difference (d) of pre-test post-test

In this step that must be done by the researcher is to calculate d score. (d) was gotten by subtracting the pre-test score with the post-test score (X-Y). The obtained d can be seen in table 7.

j) Counting the mean of difference (Md) by totaling the sun of difference ($\sum d$) and dividing it to the sum of object research (N), the value of (Md) as follow:

$$\begin{aligned}
 Md &= \frac{\sum Md}{34} \\
 &= \frac{-1.045}{34} \\
 &= -30,73
 \end{aligned}$$

k) Square all of D score, then add all of square D score in the table 3 the researcher obtain, $\sum D^2 = 40.17$

l) Determining standard deviation from D by formula :

$$\begin{aligned}SD_D &= \sqrt{\frac{\sum D^2}{N} - \left(\frac{\sum D}{N}\right)^2} \\&= \sqrt{\frac{40.175}{34} - \left(\frac{-1.045}{34}\right)^2} \\&= \sqrt{1181,6 - 30,735^2} \\&= \sqrt{1181,6 - 944,64} \\&= \sqrt{236.96} \\&= 15,39\end{aligned}$$

m) Determining standard error of mean by formula :

$$\begin{aligned}SE_{MD} &= \frac{SD_D}{\sqrt{N-1}} \\&= \frac{15,38}{\sqrt{34-1}} \\&= \frac{15,39}{\sqrt{33}} \\&= \frac{15.39}{5,74} \\&= 2,68\end{aligned}$$

n) Determining t_0 formula :

$$t_0 = \frac{MD}{SE_{MD}}$$

$$\begin{aligned} &= \frac{30,73}{2,68} \\ &= 11,466 \end{aligned}$$

As seen in the analysis above, we know that the value of t obtained (t_0) is 11,466. It is the value which describes the degree of the effectiveness of treatment which is given by the researcher to the sample after give pre test. In other word, the effectiveness degree of treatment or the using of ice breaking in this research is 11,466. It is suitable with the essential purpose of the experiment research wants to observe the effect or the result of treatment which is done by researcher. To know whether alternative hypothesis is rejected or accepted, it must be done of the process of hypothesis testing

B. Hypothesis testing

To know the alternative hypothesis H_a (Alternative hypothesis) is accepted or rejected, the researcher has to consult the value of t obtained (t_0) to t table (t_t). If the value of (t_0) is higher or at least have the same values of t_t so the alternative hypothesis is accepted. However if (t_0) is lower than (t_t), the alternative hypothesis is rejected. In this research, the researcher used 5% level significance.

Before the researcher determines the value of table (t_t), the researcher must calculate the number of df (degrees of freedom) by deducting sum of subject with 1 ($df = N-1$). where N is number of participants ($N=34$), so the degree of freedom is $34-1 = 33$. After knowing df, it is consulted to (t_0) on the level of significance 5% The value of t table can be seen in table below.

Table 8

Critical value of t-test

Df	5%	1%
31	2,038	2,744
32	2,036	2,738
33	2,034	2,732
34	2,030	2,726
35	2,030	2,720

Based on the table, the table of df : 33 with significance 5% is 2,034 < 11,466 or 1% is 2,733 < 11,466. To answer the second hypothesis, you must convert the decimal to percent. Decimal of r value is 11,466 after being changed to the form percent is 1146,6%. From the result above, it can be concluded that Ha (Alternative Hypothesis) is accepted, and the Ho (Null Hypothesis) is rejected. It proves that the using ice breaking gives good effect on the students vocabulary achievement because the students could prove their ability in post test after giving treatment by using ice breaking by the teacher. So, the hypothesis of researcher can be proved by the accepted the alternative hypothesis that the students taught by using ice breaking in vocabulary have higher achievement than the students who are not.

C. Discussion

This chapter presents the answer of the research problems. This research was to find out two research problems. The first was to find out whether the Eight grade students taught by using ice breaking have better on vocabulary achievement than they did not at MTs Al-Hasan ProppoPamekasan. The second was to find out the effect of using ice breaking at eight grade of MTs AL-Hasan ProppoPamekasan. They are follow:

1. Do the students who taught by using ice breaking have better vocabulary achievement than before getting treatment?

As noted earlier, that the first research problem is whether the eight grade students taught by using ice breaking have better achievement on vocabulary at MTs AL-Hasan ProppoPamekasan. To answer this, the researcher has to analyze the data by applying the formula that was determined to analysis the data. In deciding whether the eight grade students taught vocabulary by using ice breaking have better achievement than they did not, the researcher consulted the t obtained (t_0) to the value of t table (t_t), if the obtained is higher then the value t table ($t_0 \geq t_t$), the eight grade students taught by using ice breaking have better achievement in teaching vocabulary, and if it is not ($t_0 \leq t_t$), the eight grade students taught by using ice breaking have not better achievement in teaching vocabulary. Based on data analysis above, it showed that the obtained t is higher that the value of t table. This can be seen from the result of t_{test} in previous chapter that the value of t_{test} is higher than t_{table} either in 5% or 1% (5% is $2.034 < 11,466$) or 1% is $2,732 < 11,466$). So, H_a (Alternative Hypothesis) is accepted, and the H_0 (Null Hypothesis) is rejected. It means that the eight

grade students taught by using ice breaking have higher achievement in teaching vocabulary at MTs AL-Hasan ProppoPamekasan.

2. How statistically significance the effect of using ice breaking on students' vocabulary achievement at eight grade of MTS AL-Hasan ProppoPamekasan?

There are 34 samples that were investigated by using t-test as instrument. The researcher used t test in analyzing the data. In doing t test, the researcher used two data; they are pre test and post test. t obtained value which is gotten by researcher using t test formula is 11,466. So that, 11,466 is the value which describe the degree of the effectiveness of treatment which is given by the researcher to the sample after give pre test. in other word, the effectiveness degree of treatment or using ice breaking in this research is 11,466.

It is suitable with the essential purpose of the experiment research is the researcher wants to observe the effect or the result of treatment which is done by the researcher. To know the t obtained (11,466) is higher or lower, the researcher must to compare with t table value. Before the researcher determines the value of t table (t_t), the researcher must calculate the number of df (degree of freedom) by detracting sum of subject with $(df=N-1)$.

Based on the table, the table of df : 33 with significance 5% is 2,034 < 11,466 or 1% is 2,733 < 11,466. From the result above, it can be concluded that H_a (Alternative Hypothesis) is accepted, and the H_o (Null Hypothesis) is rejected. It proves that the using ice breaking gives good effect on the students vocabulary achievement because the students could prove their ability in post test after giving treatment by using ice breaking by the teacher. So, the hypothesis of researcher can be proved by the accepted the alternative

hypothesis that the students taught by using ice breaking in vocabulary have higher achievement than the students who are not.