CHAPTER IV

DISCUSSION

In this chapter the researcher presents the data and then measures the validity and the realibility of data, analyzes the data and proves hypothesis of the data.

A. Data Present

The instrument in this research the reasearcher used test and documentation. To measure the effectiveness of sustained silent reading method on students' reading comprehension at X^{th} grade of SMAN 3 Pamekasan in academic year 2020/2021, the researcher needs students' score on pretest and posttest. The researcher got the data as follow:

1. Validity of The Data

Validity is an important thing in developing, measuring, and evaluating that used a test. The researcher should identifies whether the research instrument (test) is valid to the student or not. The researcher use content validity to get the instrument validity. According to Donald Ary that the content validity like to look the material covered the wording of the question and the adequacy of the sample of items to measure the achievement in question.[1]

Based on explanation above, the test that the researcher gave to the students is valid because the reading material is appropiate to the syllabus X^{th} grade 2020/2021 in the second semester.

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[1] Ary et al., *Introduction to Research in Education*, P. 226.

2. Reliability of The Data

To check the reliability of this instrument, the researcher uses formula KR-21 to calculate the result of the test as below

1) Reliability of Pretest

Table 3

Reliability of Pretest

Respondents	Question's Number										Xt	Xt^2
	1	2	3	4	5	6	7	8	9	10		
1	1	0	0	0	0	1	1	1	0	0	4	16
2	0	0	0	1	0	1	0	0	0	0	2	4
3	0	1	0	0	1	1	0	0	0	0	3	9
4	1	0	1	1	0	1	0	0	1	0	5	25
5	1	0	1	0	1	1	0	1	1	0	6	36
6	0	0	1	0	1	1	1	1	0	0	5	25
7	0	0	0	0	0	1	1	0	1	0	3	9
8	0	0	0	1	0	1	0	0	0	0	2	4
9	0	0	0	0	1	1	0	1	0	0	3	9
10	1	0	0	1	0	0	0	1	0	0	3	9
11	0	0	0	0	0	1	0	1	1	0	3	9
12	0	0	0	0	1	1	0	0	1	0	3	9
13	0	0	0	0	1	1	1	0	1	1	5	25
14	0	0	1	0	0	1	1	0	1	0	4	16
15	0	0	1	1	1	1	1	1	1	1	8	64
16	0	0	0	0	1	1	1	0	1	0	4	16
17	0	0	1	1	1	1	1	1	1	1	8	64

18	0	0	1	1	1	1	1	1	1	1	8	64
19	0	0	1	1	1	1	1	1	1	1	8	64
20	0	0	0	0	1	1	1	0	1	1	5	25
21	0	0	1	0	0	1	1	0	1	1	5	25
22	1	1	1	1	1	1	1	1	1	1	10	100
23	0	0	1	1	1	1	1	1	1	1	8	64
24	1	0	1	1	1	1	1	1	1	1	9	81
25	0	0	0	0	1	1	1	0	1	1	5	25
26	0	0	0	0	0	1	1	0	1	0	3	9
27	0	0	0	1	1	1	1	1	1	1	7	49
28	0	0	1	1	1	1	1	1	0	1	7	49
29	0	0	1	1	1	1	1	1	1	1	8	64
30	0	1	0	1	1	1	1	1	1	1	8	64
Total											162	1032

Known:

$\sum Xt$ = 162

$\sum Xt^2$ = 1032

N = 30

K = 10

Asked : r_i ?

So :

$$Mt = \frac{\sum Xt}{N}$$

$$Mt = \frac{162}{30}$$

$$Mt = 5,4$$

$$St^2 = \frac{\left\{\sum Xt^2 - \frac{(\sum Xt)^2}{N}\right\}}{N}$$

$$St^2 = \frac{\left\{1032 - \frac{(162)^2}{30}\right\}}{30}$$

$$St^2 = \frac{\left\{1032 - \frac{26244}{30}\right\}}{30}$$

$$St^2 = \frac{1032 - 874,8}{30}$$

$$St^2 = \frac{157,2}{30}$$

$$St^2 = 5,24$$

$$r_i = \frac{k}{k-1}\left\{1 - \frac{Mt\,(k - Mt)}{k\,.St^2}\right\}$$

$$r_i = \frac{10}{9}\left\{1 - \frac{5,4\,(10 - 5,4)}{10 \times 5,24}\right\}$$

$$r_i = \frac{10}{9}\left\{1 - \frac{5,4\,(4,6)}{52,4}\right\}$$

$$r_i = \frac{10}{9}\left\{1 - \frac{24,84}{52,4}\right\}$$

$$r_i = \frac{10}{9}\{1 - 0,474\}$$

$$r_i = \frac{10}{9}\{0,526\}$$

$$r_i = 0,584$$

From the analysis above, the researcher found that the reliability of pretest is 0,584. Where N is 30 (df=29) and the level of significance is 5% the value of r_{table} is 0,361. So, this test is reliable because r_{value} is higher than r_{table}.

r_{value}	r_{table} (5%)
0,584	0,361

2) Reliability of Post-test

Table 4

Reliability of Post-test

Respondents	Question's Number										Total	Xt^2
	1	2	3	4	5	6	7	8	9	10		
1	1	1	0	0	1	0	1	1	0	1	6	36
2	1	0	1	0	0	0	0	1	0	1	4	16
3	0	0	1	0	0	1	0	1	0	0	3	9
4	1	1	0	0	1	0	1	1	0	1	6	36
5	1	0	1	0	1	1	1	0	1	1	7	49
6	1	1	1	1	0	1	1	1	0	0	7	49
7	1	1	1	0	0	0	0	1	0	1	5	25
8	1	0	0	0	0	1	0	0	0	1	3	9
9	0	1	0	0	1	0	1	0	1	0	4	16
10	1	0	0	0	1	0	1	0	0	0	3	9
11	0	0	1	0	0	1	0	1	0	1	4	16
12	1	0	0	0	0	1	0	0	0	1	3	9
13	1	1	1	0	0	1	1	0	1	1	7	49
14	1	0	1	0	0	0	1	0	0	1	4	16

15	1	1	1	0	1	1	1	1	1	1	9	81
16	1	0	0	0	1	1	1	0	0	1	5	25
17	1	1	1	1	1	1	1	1	0	1	9	81
18	1	1	1	1	1	1	1	1	1	1	10	100
19	1	1	1	0	1	1	1	1	1	1	9	81
20	1	0	1	1	1	0	1	0	1	1	7	49
21	1	1	0	0	1	0	0	1	0	1	5	25
22	1	1	1	1	1	1	1	1	1	1	10	100
23	1	1	1	1	1	1	1	1	1	1	10	100
24	1	1	1	1	1	1	1	1	0	1	9	81
25	1	0	1	0	1	1	1	1	0	1	7	49
26	0	0	1	0	1	0	0	1	1	0	4	16
27	1	1	0	1	1	1	1	0	1	1	8	64
28	1	1	0	1	1	0	1	1	1	0	7	49
29	1	1	1	1	1	1	1	1	0	1	9	81
30	1	1	1	0	1	1	1	1	1	1	9	81
Total											193	1407

Known:

$\sum Xt = 193$

$\sum Xt^2 = 1407$

N = 30

K = 10

Asked : r_i ?

So   :

$$Mt = \frac{\sum Xt}{N}$$

$$Mt = \frac{193}{30}$$

$$Mt = 6,43$$

$$St^2 = \frac{\left\{ \sum Xt^2 - \frac{(\sum Xt)^2}{N} \right\}}{N}$$

$$St^2 = \frac{\left\{ 1407 - \frac{(193)^2}{30} \right\}}{30}$$

$$St^2 = \frac{\left\{ 1407 - \frac{37249}{30} \right\}}{30}$$

$$St^2 = \frac{1407 - 1241,63}{30}$$

$$St^2 = \frac{165,37}{30}$$

$$St^2 = 5,512$$

$$r_i = \frac{k}{k-1} \left\{ 1 - \frac{Mt\,(k - Mt)}{k\,.\,St^2} \right\}$$

$$r_i = \frac{10}{9} \left\{ 1 - \frac{6,43\,(10 - 6,43)}{10 \times 5,512} \right\}$$

$$r_i = \frac{10}{9} \left\{ 1 - \frac{6,43\,(3,57)}{55,12} \right\}$$

$$r_i = \frac{10}{9} \left\{ 1 - \frac{22,955}{55,12} \right\}$$

$$r_i = \frac{10}{9}\{1 - 0{,}416\}$$

$$r_i = \frac{10}{9}\{0{,}584\}$$

$$r_i = 0{,}648$$

From the analysis above, the researcher found that the reliability of pretest is 0,648. Where N is 30 (df = 29) and the level of significance is 5% the value of r_{table} is 0,361. So, this test is reliable because r_{value} is higher than r_{table}.

r_{value}	r_{table} (5%)
0,648	0,361

3. The Result of Data Test

Table 1

Students' Pre-test Score

Respondents	Question's Number										Total	Score
	1	2	3	4	5	6	7	8	9	10		
1	1	0	0	0	0	1	1	1	0	0	4	40
2	0	0	0	1	0	1	0	0	0	0	2	20
3	0	1	0	0	1	1	0	0	0	0	3	30
4	1	0	1	1	0	1	0	0	1	0	5	50
5	1	0	1	0	1	1	0	1	1	0	6	60
6	0	0	1	0	1	1	1	1	0	0	5	50
7	0	0	0	0	0	1	1	0	1	0	3	30
8	0	0	0	1	0	1	0	0	0	0	2	20
9	0	0	0	0	1	1	0	1	0	0	3	30

10	1	0	0	1	0	0	0	1	0	0	3	30
11	0	0	0	0	0	1	0	1	1	0	3	30
12	0	0	0	0	1	1	0	0	1	0	3	30
13	0	0	0	0	1	1	1	0	1	1	5	50
14	0	0	1	0	0	1	1	0	1	0	4	40
15	0	0	1	1	1	1	1	1	1	1	8	80
16	0	0	0	0	1	1	1	0	1	0	4	40
17	0	0	1	1	1	1	1	1	1	1	8	80
18	0	0	1	1	1	1	1	1	1	1	8	80
19	0	0	1	1	1	1	1	1	1	1	8	80
20	0	0	0	0	1	1	1	0	1	1	5	50
21	0	0	1	0	0	1	1	0	1	1	5	50
22	1	1	1	1	1	1	1	1	1	1	10	100
23	0	0	1	1	1	1	1	1	1	1	8	80
24	1	0	1	1	1	1	1	1	1	1	9	90
25	0	0	0	0	1	1	1	0	1	1	5	50
26	0	0	0	0	0	1	1	0	1	0	3	30
27	0	0	0	1	1	1	1	1	1	1	7	70
28	0	0	1	1	1	1	1	1	0	1	7	70
29	0	0	1	1	1	1	1	1	1	1	8	80
30	0	1	0	1	1	1	1	1	1	1	8	80
Total											162	1620

$$mean\ score = \frac{total\ score}{total\ respondents}$$

$$mean\ score = \frac{1620}{30}$$

$$mean\ score = 54$$

It means the mean score of the students' at X[th] Grade MIPA 4 SMAN 3 Pamekasan in academic year 2020 / 2021 before being taught sustained silent reading method is 54.

Table 2

Post-Test Score

Respondents	Question's Number										Total	Score
	1	2	3	4	5	6	7	8	9	10		
1	1	1	0	0	1	0	1	1	0	1	6	60
2	1	0	1	0	0	0	0	1	0	1	4	40
3	0	0	1	0	0	1	0	1	0	0	3	30
4	1	1	0	0	1	0	1	1	0	1	6	60
5	1	0	1	0	1	1	1	0	1	1	7	70
6	1	1	1	1	0	1	1	1	0	0	7	70
7	1	1	1	0	0	0	0	1	0	1	5	50
8	1	0	0	0	0	1	0	0	0	1	3	30
9	0	1	0	0	1	0	1	0	1	0	4	40
10	1	0	0	0	1	0	1	0	0	0	3	30
11	0	0	1	0	0	1	0	1	0	1	4	40
12	1	0	0	0	0	1	0	0	0	1	3	30

13	1	1	1	0	0	1	1	0	1	1	7	70
14	1	0	1	0	0	0	1	0	0	1	4	40
15	1	1	1	0	1	1	1	1	1	1	9	90
16	1	0	0	0	1	1	1	0	0	1	5	50
17	1	1	1	1	1	1	1	1	0	1	9	90
18	1	1	1	1	1	1	1	1	1	1	10	100
19	1	1	1	0	1	1	1	1	1	1	9	90
20	1	0	1	1	1	0	1	0	1	1	7	70
21	1	1	0	0	1	0	0	1	0	1	5	50
22	1	1	1	1	1	1	1	1	1	1	10	100
23	1	1	1	1	1	1	1	1	1	1	10	100
24	1	1	1	1	1	1	1	1	0	1	9	90
25	1	0	1	0	1	1	1	1	0	1	7	70
26	0	0	1	0	1	0	0	1	1	0	4	40
27	1	1	0	1	1	1	1	0	1	1	8	80
28	1	1	0	1	1	0	1	1	1	0	7	70
29	1	1	1	1	1	1	1	1	0	1	9	90
30	1	1	1	0	1	1	1	1	1	1	9	90
Total											193	1930

$$mean\ score = \frac{total\ score}{total\ respondents}$$

$$mean\ score = \frac{1930}{30}$$

$$mean\ score = 64,3$$

It means the mean score of the students' at X^{th} Grade MIPA 4 SMAN 3 Pamekasan in academic year 2020 / 2021 after taught sustained silent reading method is 64,3

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4. Documentation

As the researcher stated on third chapter in this thesis about the data documentation for this thesis they are:

1) Students' name list of Xth MIPA4 SMAN 3 Pamekasan in academic year 2020/2021

2) Reliability of the instrument (pretest and post-test)

3) Students' score on pretest and post-test

4) Students' worksheet of pretest and post-test

B. Analysis of The Data

After the instrument (pretest and post-test) declared valid and reliable, the researcher needs to analyze the score. The score analyzed as follows.

Table 5

Data Analysis

Respondents	Pretest (X_1)	Post-test (X_2)	D $(X_2 - X_1)$	D^2
1	40	60	20	400
2	20	40	20	400
3	30	30	0	0
4	50	60	10	100
5	60	70	10	100

6	50	70	20	400
7	30	50	20	400
8	20	30	10	100
9	30	40	10	100
10	30	30	0	0
11	30	40	10	100
12	30	30	0	0
13	50	70	20	400
14	40	40	0	0
15	80	90	10	100
16	40	50	10	100
17	80	90	10	100
18	80	100	20	400
19	80	90	10	100
20	50	70	20	400
21	50	50	0	0
22	100	100	0	0
23	80	100	20	400
24	90	90	0	0
25	50	70	20	400
26	30	40	10	100
27	70	80	10	100
28	70	70	0	0
29	80	90	10	100
30	80	90	10	100
	$\sum x_1 = 1620$	$\sum x_2 = 1930$	$\sum D = 310$	$\sum D^2 = 4900$

Known:

N $\quad$ = 30

$\sum X_1 \quad$ = 1620

$\sum X_2 \quad$ = 1930

$\sum D \quad$ = 310

$\sum D^2 \quad$ = 4900

Asked : $\qquad$ t$_{value}$?

So $\qquad$: $\qquad$ $MD = \frac{\sum D}{N}$

$$MD = \frac{310}{30}$$

$$MD = 10,3$$

$$t = \frac{MD}{\sqrt{\dfrac{SD}{(N-1)}}}$$

$$t = \frac{MD}{\sqrt{\dfrac{\dfrac{\sum D^2}{N} - \left(\dfrac{\sum D}{N}\right)^2}{(N-1)}}}$$

$$t = \frac{10,3}{\sqrt{\dfrac{\dfrac{4900}{30} - \left(\dfrac{310}{30}\right)^2}{(30-1)}}}$$

$$t = \frac{10,3}{\sqrt{\dfrac{\dfrac{4900}{30} - \left(\dfrac{310}{30}\right)^2}{(30-1)}}}$$

$$t = \frac{10{,}3}{\sqrt{\dfrac{163{,}33 - (10{,}33)^2}{29}}}$$

$$t = \frac{10{,}3}{\sqrt{\dfrac{163{,}33 - 106{,}77}{29}}}$$

$$t = \frac{10{,}3}{\sqrt{\dfrac{163{,}33 - 106{,}77}{29}}}$$

$$t = \frac{10{,}3}{\sqrt{\dfrac{56{,}56}{29}}}$$

$$t = \frac{10{,}3\sqrt{29}}{\sqrt{56{,}56}}$$

$$t = \frac{10{,}3 \times 5{,}385}{7{,}519}$$

$$t = \frac{53{,}851}{7{,}519}$$

$$t = 7{,}37$$

From the analysis result, it is known that the t_{value} from pretest and post-test, the effectiveness of sustained silent reading method on students' reading comprehension at X^{th} Grade SMAN 3 Pamekasan in academic year 2020/2021 is 7,37.

C. Hypothesis Testing

Hypothesis testing is a test required in quantitative research. In the third chapter, researcher wrote if t_{value} is higher than t_{table} ($t_{value} > t_{table}$) it means the alternative hypothesis (H_a) is accepted, but if t_{value} is lower than t_{table} ($t_{value} < t_{table}$) it means alternative hypothesis (H_a) is rejected.

The researcher uses alpha significance 5% as used in educational research as follows

$$df = N - 1$$

$$df = 30 - 1$$

$$df = 29$$

Df	level of significance	
	5%	1%
29	2,045	2,462

Based on t_{value} of this research and the t_{table}, it can be known that t_{value} is higher than t_{table} with the level of significance of 5% ($t_{value} > t_{table}$, or $7,37 > 2,045$) which is alternative hypothesis (H_a) is accepted.

df	t_{value}	t_{table} ($\alpha=5\%$)
29	7,37	2,045

D. Discussion

Based on the data that finding of the researcher as follows:

1. the result of the data shown that the students' who taught sustained silent reading method have higher achievement on reading comprehension than before using sustained silent reading method at X^{th} grade of SMAN 3 Pamekasan in academic year 2020 / 2021.

2. The result of data analysis shows that t_{value} is higher that t_{table} ($7,37 > 2,045$) with the level of significance is 5% and the total respondents are 30 students

(df = 29). Based on the result of the data and what William Lee Hays stated on Saifuddin Azwar that statistical significance is a statement about the likelihood of the observed result, nothing else. It does not guarantee that something important, or even meaningful, has found.[2] So, the reseacher concludes that sustained silent reading method gives significant effectiveness on students' reading comprehension at X^{th} grade students' of SMAN 3 Pamekasan in academic year 2020 / 2021.

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[2] Saifuddin Azwar, "Signifikan Atau Sangat Signifikan?" *Buletin Psikologi, Volume 13*, No. 1, Juni 2015. P. 44.