CHAPTER IV
FINDING OF THE STUDY

In this chapter, the researcher analyzes and presents the data of the research result. There are several subs chapter which discussed here. They are trying out test analysis, treatment, posttest analysis and t-test analysis.

4.1 Trying Out Test Analysis

In the trying out test, the researcher guided 31 students of twelve grade students as the respondents of trying out test. In the table below, the researcher gave code in each student to make easy in presenting the study.

Table 4.1
The Respondents of Trying Out Test

NO	STUDENTS' NAME	CODE
1	Adhea Putri Sundawa	R-02
2	Indah Iin	R-14
3	M. Iqbal Jazaki	R-17
4	Muhammad Jazuli	R-01
5	Afika Yanti	R-03
6	Khalimatus Sa'diyah	R-16
7	Maisyatun N.	R-20
8	Nailia Luthfiana	R-25
9	Ahmad Bahtiar Rifai	R-04
10	Vida Ariyani	R-30
11	M. Renaldo A.	R-18
12	Joelani Lukman K.	R-15
13	Miftahul Irvan F.	R-21

14	Muhammad Fikri	R-22
15	Ahmad Miftakhul Huda	R-05
16	Nor Faizi	R-27
17	Amirotun Nisa'	R-06
18	Ana Nuriyah F. J.	R-07
19	Aan Deny Susilo	R-23
20	Natasya Rizka A.	R-26
21	Annika Ariyanti	R-08
22	Dimas Wahyu P.	R-09
23	Faridatun Nurun Najah	R-10
24	Ika lusiana	R-12
25	Syaiful Arif	R-29
26	Zakibbatul Fahiroh	R-31
27	Hanik fitriyana	R-11
28	Novi Listyaningsih	R-28
29	Imroatul Hasanah	R-13
30	M. Ulil Amri	R-19
31	Muhammad Ulil Amri	R-24

4.1.1 Validity of Trying Out Test

As mentioned in this chapter, the test was said valid if the result of $r_{xy}$was higher than r_{table}. The researcher consulted the r with N 31 and the significant level 5% showed that r_{table} is 0,355. The item number would valid, if the r_{bis}>r_{table}.

Formula:

$$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$$

In the table below, the researcher computed all of the test items of trying out test that can be seen as follows:

Table 4.2

The Computation of Validity

No	The Value of r_{xy}	Criteria
1	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $r_{xy} = \frac{(31)(429) - (24)(525)}{\sqrt{\{(31)(24) - (24)^2\}\{(31)(9483) - (525)^2\}}}$ $r_{xy} = \frac{13299 - 12600}{\sqrt{(744 - 576)(293973 - 275625)}}$ $r_{xy} = \frac{699}{\sqrt{(168)(18348)}} = \frac{699}{\sqrt{3082464}} = \frac{699}{1755.69473}$ $r_{xy} = 0.398$	Valid
2	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $r_{xy} = \frac{(31)(421) - (25)(525)}{\sqrt{\{(31)(25) - (25)^2\}\{(31)(9483) - (525)^2\}}}$ $r_{xy} = \frac{13051 - 13125}{\sqrt{(775 - 625)\,(293973 - 275625)}}$ $r_{xy} = \frac{-74}{\sqrt{(150)(18348)}} = \frac{-74}{\sqrt{2752200}} = \frac{-74}{1658.9755}$ $r_{xy} = -0.045$	Invalid
3	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$	Valid

	$\mathbf{r_{xy}} = \frac{(31)(402) - (21)(525)}{\sqrt{\{(31)(21) \quad -(21)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{12462 - 11025}{\sqrt{(651 - 441)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{1437}{\sqrt{(210)(18348)}} = \frac{1437}{\sqrt{3853080}} = \frac{1437}{1962.9263}$ $\mathbf{r_{xy}} = 0.732$	
4	$\mathbf{r_{xy}} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $\mathbf{r_{xy}} = \frac{(31)(256) - (16)(525)}{\sqrt{\{(31)(16) \quad -(16)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{7936 - 8400}{\sqrt{(796 - 256)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{-464}{\sqrt{(540)(18348)}} = \frac{-464}{\sqrt{4403520}} = \frac{-464}{2098.4565}$ $\mathbf{r_{xy}} = -0.221$	Invalid
5	$\mathbf{r_{xy}} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $\mathbf{r_{xy}} = \frac{(31)(253) - (13)(525)}{\sqrt{\{(31)(13) \quad -(13)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{7843 - 6825}{\sqrt{(403 - 169)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{1018}{\sqrt{(234)(18348)}} = \frac{1018}{\sqrt{4293452}} = \frac{1018}{2072.0598}$	Valid

	$\mathbf{r_{xy} = 0.491}$	
6	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(425) - (23)(525)}{\sqrt{\{(31)(23) - (23)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{13175 - 12075}{\sqrt{(713 - 529)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{1100}{\sqrt{(184)(18348)}} = \frac{1100}{\sqrt{3376032}} = \frac{1100}{1837.3981}}$ $\mathbf{r_{xy} = 0.599}$	Valid
7	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(481) - (27)(525)}{\sqrt{\{(31)(27) - (27)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{14911 - 14175}{\sqrt{(837 - 729)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{736}{\sqrt{(108)(18348)}} = \frac{736}{\sqrt{1981584}} = \frac{736}{14076874}}$ $\mathbf{r_{xy} = 0.523}$	Valid
8	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(395) - (22)(525)}{\sqrt{\{(31)(22) - (22)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{12245 - 11550}{\sqrt{(682 - 484)\,(293973 - 275625)}}}$	Valid

	$\mathbf{r_{xy} = \frac{695}{\sqrt{(198)(18348)}} = \frac{695}{\sqrt{3632904}} = \frac{695}{1906.0178}}$ $\mathbf{r_{xy} = 0.365}$	
9	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(507) - (29)(525)}{\sqrt{\{(31)(29) - (29)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{15717 - 15225}{\sqrt{(899 - 841)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{492}{\sqrt{(58)(18348)}} = \frac{492}{\sqrt{1064184}} = \frac{492}{1031 - 5929}}$ $\mathbf{r_{xy} = 0.477}$	Valid
10	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(216) - (12)(525)}{\sqrt{\{(31)(12) - (12)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{6696 - 6300}{\sqrt{(372 - 144)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{396}{\sqrt{(228)(18348)}} = \frac{396}{\sqrt{4183344}} = \frac{396}{2045.3224}}$ $\mathbf{r_{xy} = 0.194}$	Invalid
11	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(465) - (26)(525)}{\sqrt{\{(31)(26) - (26)^2\}\{(31)(9483) - (525)^2\}}}}$	Valid

	$\mathbf{r_{xy}} = \frac{\mathbf{14415 - 13650}}{\sqrt{(\mathbf{806 - 676})\ (\mathbf{293973 - 275625})}}$ $\mathbf{r_{xy}} = \frac{\mathbf{765}}{\sqrt{(\mathbf{130})(\mathbf{18348})}} = \frac{\mathbf{765}}{\sqrt{\mathbf{2385240}}} = \frac{\mathbf{765}}{\mathbf{1544.422}}$ $\mathbf{r_{xy}} = \mathbf{0.495}$	
12	$\mathbf{r_{xy}} = \frac{\boldsymbol{N.\sum XY - (\sum X)(\sum Y)}}{\sqrt{\{(\boldsymbol{N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy}} = \frac{(\mathbf{31})(\mathbf{329}) - (\mathbf{17})(\mathbf{525})}{\sqrt{\{(\mathbf{31})(\mathbf{17}) \quad - (\mathbf{17})^2\}\{(\mathbf{31})(\mathbf{9483}) \quad - (\mathbf{525})^2\}}}$ $\mathbf{r_{xy}} = \frac{\mathbf{10199 - 89925}}{\sqrt{(\mathbf{527 - 289})\ (\mathbf{293973 - 275625})}}$ $\mathbf{r_{xy}} = \frac{\mathbf{1274}}{\sqrt{(\mathbf{130})(\mathbf{18348})}} = \frac{\mathbf{1274}}{\sqrt{\mathbf{4366824}}} = \frac{\mathbf{1274}}{\mathbf{2089.6947}}$ $\mathbf{r_{xy}} = \mathbf{0.610}$	Valid
13	$\mathbf{r_{xy}} = \frac{\boldsymbol{N.\sum XY - (\sum X)(\sum Y)}}{\sqrt{\{(\boldsymbol{N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy}} = \frac{(\mathbf{31})(\mathbf{220}) - (\mathbf{13})(\mathbf{525})}{\sqrt{\{(\mathbf{31})(\mathbf{13}) \quad - (\mathbf{13})^2\}\{(\mathbf{31})(\mathbf{9483}) \quad - (\mathbf{525})^2\}}}$ $\mathbf{r_{xy}} = \frac{\mathbf{6820 - 6825}}{\sqrt{(\mathbf{403 - 169})\ (\mathbf{293973 - 275625})}}$ $\mathbf{r_{xy}} = \frac{\mathbf{-5}}{\sqrt{(\mathbf{234})(\mathbf{18348})}} = \frac{\mathbf{-5}}{\sqrt{\mathbf{4293432}}} = \frac{\mathbf{-5}}{\mathbf{2072.0598}}$ $\mathbf{r_{xy}} = \mathbf{-0.002}$	Valid
14	$\mathbf{r_{xy}} = \frac{\boldsymbol{N.\sum XY - (\sum X)(\sum Y)}}{\sqrt{\{(\boldsymbol{N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$	Valid

	$\mathbf{r_{xy}} = \frac{(31)(313) - (16)(525)}{\sqrt{\{(31)(16) \quad -(16)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{9703 - 8400}{\sqrt{(496 - 256)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{1303}{\sqrt{(240)(18348)}} = \frac{1303}{\sqrt{4403520}} = \frac{1303}{2098.456}$ $\mathbf{r_{xy}} = 0.621$	
15	$\mathbf{r_{xy}} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $\mathbf{r_{xy}} = \frac{(31)(451) - (25)(525)}{\sqrt{\{(31)(25) \quad -(25)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{13981 - 13125}{\sqrt{(775 - 625)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{856}{\sqrt{(150)(18348)}} = \frac{856}{\sqrt{2752200}} = \frac{856}{168.9755}$ $\mathbf{r_{xy}} = 0.516$	Valid
16	$\mathbf{r_{xy}} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $\mathbf{r_{xy}} = \frac{(31)(329) - (17)(525)}{\sqrt{\{(31)(17) \quad -(17)^2\}\{(31)(9483) \quad -(525)^2\}}}$ $\mathbf{r_{xy}} = \frac{10199 - 89925}{\sqrt{(527 - 289)\,(293973 - 275625)}}$ $\mathbf{r_{xy}} = \frac{1274}{\sqrt{(130)(18348)}} = \frac{1274}{\sqrt{4366824}} = \frac{1274}{2089.6947}$ $\mathbf{r_{xy}} = 0.610$	Valid

17	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $r_{xy} = \frac{(31)(507) - (29)(525)}{\sqrt{\{(31)(29) - (29)^2\}\{(31)(9483) - (525)^2\}}}$ $r_{xy} = \frac{15717 - 15225}{\sqrt{(899 - 841)\,(293973 - 275625)}}$ $r_{xy} = \frac{492}{\sqrt{(58)(18348)}} = \frac{492}{\sqrt{1064184}} = \frac{492}{1031 - 5929}$ $r_{xy} = 0.477$	Valid
18	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $r_{xy} = \frac{(31)(330) - (17)(525)}{\sqrt{\{(31)(17) - (17)^2\}\{(31)(9483) - (525)^2\}}}$ $r_{xy} = \frac{10230 - 8925}{\sqrt{(527 - 289)\,(293973 - 275625)}}$ $r_{xy} = \frac{1305}{\sqrt{(238)(18348)}} = \frac{1305}{\sqrt{4366824}} = \frac{1305}{20896947}$ $r_{xy} = 0.624$	Valid
19	$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}$ $r_{xy} = \frac{(31)(481) - (27)(525)}{\sqrt{\{(31)(27) - (27)^2\}\{(31)(9483) - (525)^2\}}}$ $r_{xy} = \frac{14911 - 14175}{\sqrt{(837 - 729)\,(293973 - 275625)}}$	Valid

	$\mathbf{r_{xy} = \frac{736}{\sqrt{(108)(18348)}} = \frac{736}{\sqrt{1981584}} = \frac{736}{1407.6874}}$ $\mathbf{r_{xy} = 0.523}$	
20	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(148) - (9)(525)}{\sqrt{\{(31)(9) - (9)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{4588 - 4725}{\sqrt{(279 - 81)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{-137}{\sqrt{(198)(18348)}} = \frac{-137}{\sqrt{3632904}} = \frac{-137}{1906.0178}}$ $\mathbf{r_{xy} = 0.072}$	Invalid
21	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(429) - (24)(525)}{\sqrt{\{(31)(24) - (24)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{13299 - 12600}{\sqrt{(744 - 576)(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{699}{\sqrt{(168)(18348)}} = \frac{699}{\sqrt{3082464}} = \frac{699}{1755.69473}}$ $\mathbf{r_{xy} = 0.398}$	Valid
22	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(381) - (21)(525)}{\sqrt{\{(31)(21) - (21)^2\}\{(31)(9483) - (525)^2\}}}}$	Valid

	$\mathbf{r_{xy} = \frac{11811 - 11025}{\sqrt{(651 - 441)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{786}{\sqrt{(210)(18348)}} = \frac{786}{\sqrt{3853080}} = \frac{786}{1962.9263}}$ $\mathbf{r_{xy} = 0.400}$	
23	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(399) - (22)(525)}{\sqrt{\{(31)(22) - (22)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{12369 - 11550}{\sqrt{(682 - 484)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{819}{\sqrt{(198)(18348)}} = \frac{819}{\sqrt{3632904}} = \frac{819}{1906.0178}}$ $\mathbf{r_{xy} = 0.430}$	Valid
24	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$ $\mathbf{r_{xy} = \frac{(31)(448) - (24)(525)}{\sqrt{\{(31)(24) - (24)^2\}\{(31)(9483) - (525)^2\}}}}$ $\mathbf{r_{xy} = \frac{13888 - 12600}{\sqrt{(744 - 576)\,(293973 - 275625)}}}$ $\mathbf{r_{xy} = \frac{1288}{\sqrt{(168)(18348)}} = \frac{1288}{\sqrt{3082464}} = \frac{1288}{1755.6947}}$ $\mathbf{r_{xy} = 0.734}$	Valid
25	$\mathbf{r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N.\sum X^2 - (\sum X)^2\}\{(N.\sum Y^2 - (\sum Y)^2\}}}}$	Valid

$$r_{xy} = \frac{(31)(468) - (26)(525)}{\sqrt{\{(31)(26) - (26)^2\}\{(31)(9483) - (525)^2\}}}$$

$$r_{xy} = \frac{14508 - 13.650}{\sqrt{(806 - 676)\,(293973 - 275625)}}$$

$$r_{xy} = \frac{858}{\sqrt{(130)(18348)}} = \frac{858}{\sqrt{2385240}} = \frac{858}{1544.4222}$$

$$r_{xy} = 0.556$$

From the result of computing the trying out test, the result can be specified as the table below:

Table 4.3

The Items of Valid and Invalid

Criteria	Number of Item	The Total Number
Valid	1, 3, 5, 6, 7, 8, 9, 11 12,14, 15, 16, 17, 18 19, 21, 22, 23, 24, 25	20
Invalid	2, 4, 10, 13, 20	5

From the table above, it can be concluded that the trying out instrument test has 20 valid and 5 invalid of the test item. Valid means that r_{xy} was higher than r_{table} (0,355), however invalid means that r_{xy} was lower than r_{table}(0,355)

4.1.2 Reliability of Trying Out Test

The test is reliable if the result of r_{11} is higher than r_{table}. The following is the computation of reliability of try out test.

Formula:

$$r_{11=} \left(\frac{N}{N-1}\right)\left(1-\left(\frac{\sum pq}{\sigma_x^2}\right)\right)$$

$$= \left(\frac{25}{25-1}\right)\left(1-\left(\frac{4.666}{-269.875}\right)\right)$$

$$= \left(\frac{25}{24}\right)\left(1-\left(\frac{4.666}{-269.875}\right)\right)$$

$$= (1.0416)(1+0.0172)$$

$$= (1.0416)(1.0172)$$

$$= 1.059$$

From the result could be called reliable because the r_{11}= 1.059 was greater than r_{table}= 0,355. After that the researcher analyzed all of test items of trying out test by using excel formula in the appendix 4. So the result can be seen in the table as follows:

Table 4.4

The Items of Reliable and Unreliable

Criteria	Number of Item	The Total Number
Reliable	1, 3, 5, 6, 7, 8, 9, 11 12,14, 15, 16, 17, 18 19, 21, 22, 23, 24, 25	20
Unreliable	2, 4, 10, 13, 20	5

From the table above, it was concluded that the trying out instrument test has 20 reliable and 5 unreliable of the item numbers.

4.1.3 Difficulty Level

The easy or difficult of item number is determined by the index of item difficulty level. The item number of a test called easy if the index of item difficulty is high. If the item number is low, it means that the item number is difficult.

The researcher applies the following formula to compute the difficulty level:

Formula:

$$P = \frac{B}{JS}$$

Table 4.5

The Computation of Difficulty Level

No	Difficulty Level Computation	Criteria
1	$P = \frac{B}{JS} = \frac{24}{31} = 0.774$	Easy
2	$P = \frac{B}{JS} = \frac{25}{31} = 0.806$	Easy
3	$P = \frac{B}{JS} = \frac{21}{31} = 0.677$	Medium
4	$P = \frac{B}{JS} = \frac{16}{31} = 0.516$	Medium
5	$P = \frac{B}{JS} = \frac{13}{31} = 0.419$	Medium
6	$P = \frac{B}{JS} = \frac{23}{31} = 0.742$	Easy

7	$P = \frac{B}{JS} = \frac{27}{31} = 0.871$	Easy
8	$P = \frac{B}{JS} = \frac{22}{31} = 0.710$	Easy
9	$P = \frac{B}{JS} = \frac{29}{31} = 0.935$	Easy
10	$P = \frac{B}{JS} = \frac{12}{31} = 0.387$	Medium
11	$P = \frac{B}{JS} = \frac{26}{31} = 0.839$	Easy
12	$P = \frac{B}{JS} = \frac{17}{31} = 0.548$	Medium
13	$P = \frac{B}{JS} = \frac{13}{31} = 0.419$	Medium
14	$P = \frac{B}{JS} = \frac{16}{31} = 0.516$	Medium
15	$P = \frac{B}{JS} = \frac{25}{31} = 0.806$	Easy
16	$P = \frac{B}{JS} = \frac{17}{31} = 0.548$	Medium
17	$P = \frac{B}{JS} = \frac{29}{31} = 0.935$	Easy
18	$P = \frac{B}{JS} = \frac{17}{31} = 0.548$	Medium
19	$P = \frac{B}{JS} = \frac{27}{31} = 0.871$	Easy
20	$P = \frac{B}{JS} = \frac{9}{31} = 0.290$	Difficult
21	$P = \frac{B}{JS} = \frac{24}{31} = 0.774$	Easy

22	$P = \frac{B}{JS} = \frac{21}{31} = 0.677$	Medium
23	$P = \frac{B}{JS} = \frac{22}{31} = 0.710$	Easy
24	$P = \frac{B}{JS} = \frac{24}{31} = 0.774$	Easy
25	$P = \frac{B}{JS} = \frac{26}{31} = 0.839$	Easy

From the result above, in the difficulty level computation was showing high level between $0.7 < P \leq 1$, it meant that the test item easy. The difficulty level computation was showing medium level between $0.3 < P \leq 0.7$ meant the test item was not too easy or not too difficult. The difficulty level computation was showing low level between $0 < P \leq 0.3$ meant the test item was difficult.

The computation above can be concluded in the table as follows:

Table 4.6

The Item Difficulty of the Test

Criteria	**Number of Item**	**The Total Number**
Difficult	20	1
Medium	3, 4, 5, 10, 12, 13, 14, 16, 18, 22	10
Easy	1, 2, 6, 7, 8, 9, 11, 15, 17, 19, 21, 23, 24, 25	14

From the table can be concluded that there was one item number was said as difficult item, 10 items were said as medium level, and 14 item numbers were said as easy level.

4.1.4 Discriminating Power

The following formula was used to compute the discriminating power of the test items.

Formula:

$$\boldsymbol{D = \frac{BA}{JA} - \frac{BB}{JB}}$$

In this table is the result of computing the discriminating power for each the test item.

Table 4.7

The Computation of Discriminating Power

No	Discriminating Power Computation	Criteria
1	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{15}{16} - \frac{9}{15} = 0.338$	Satisfactory
2	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{12}{16} - \frac{13}{15} = -0{,}117$	Poor
3	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{5}{15} = 0.667$	Good
4	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{5}{16} - \frac{11}{15} = -0.421$	Poor
5	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{10}{16} - \frac{5}{15} = 0.425$	Good
6	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{14}{16} - \frac{9}{15} = 0.275$	Satisfactory
7	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{11}{15} = 0.267$	Satisfactory
8	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{15}{16} - \frac{7}{15} = 0.471$	Good

9	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{3}{15} = 0.133$	Poor
10	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{7}{16} - \frac{5}{15} = 0.104$	Poor
11	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{10}{15} = 0.333$	Satisfactory
12	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{13}{16} - \frac{4}{15} = 0.546$	Good
13	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{7}{16} - \frac{6}{15} = 0.038$	Poor
14	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{13}{16} - \frac{3}{15} = 0.613$	Good
15	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{9}{15} = 0.400$	Satisfactory
16	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{13}{16} - \frac{4}{15} = 0.546$	Good
17	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{13}{15} = 0.133$	Poor
18	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{13}{16} - \frac{4}{15} = 0.546$	Good
19	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{11}{15} = 0.267$	Satisfactory
20	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{3}{16} - \frac{6}{15} = -0.213$	Poor
21	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{8}{15} = 0.467$	Good
22	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{14}{16} - \frac{7}{15} = 0.408$	Good
23	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{14}{16} - \frac{8}{15} = 0.342$	Satisfactory

24	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{8}{15} = 0.467$	Good
25	$D = \frac{BA}{JA} - \frac{BB}{JB} = \frac{16}{16} - \frac{10}{15} = 0.333$	Satisfactory

From the result above, in the discriminating power computation was showing high level between 0.71 < D $\leq$ 1.00meant the test item was excellent, between 0.41 < D $\leq$ 0.70 meant that the test item was good, between 0.21 < D $\leq$ 0.40 meant that the test item was satisfactory and between 0.00 < D $\leq$ 0.2 meant that the test item was poor.

The computation results of discriminating power can be seen in the table as follows:

Table 4.8

The Item of Discriminating Power

Criteria	**Number of Item**	**The Total Number**
Poor	2, 4, 9, 10, 13, 17, 20	7
Satisfactory	1, 6, 7, 11, 15, 19, 23, 25	8
Good	3, 4, 8, 12, 14, 16, 18, 21, 22, 24	10

From the table above, it was found that there were 7 items classified to be poor, 8 items were classified to be satisfactory and 10 items were classified to be good.

4.2 Treatment

In this study, the researcher conducted the treatment three times for experimental group which elaborated in the table as follows:

Table 4.9

The Schedule of Treatment of the Experimental Group

Treatment	Date	Experimental Group
1st Meeting	9 Sep2017	Speaking activities by using information gap technique (expressing of satisfaction and dissatisfaction).
2nd Meeting	11 Sep2017	Speaking activities by using information gap technique (asking and answering losing vocabularies about living room).
3rd Meeting	16 Sep2017	Speaking activities by using information gap technique (describing and guessing the things of living room).

First meeting, in the teaching learning processes, the researcher directed students to the material by showing pictures related to the material. Then researcher explained the materials clearly about expressing of satisfaction and dissatisfaction by using interesting media such as power point, cards and paper. Next, researcher gave the examples in short conversation about the expression of satisfaction and dissatisfaction. The important thing was in the last activities. The researcher asked students to practice speaking about expressing satisfaction and dissatisfaction by using information gap technique.

The concept of information gap technique in the first meeting was interesting. First of all, the researcher shared the pictures in the cards. It meant that different students got the different card because the students did

conversation based on the card in pair. In the activities, the student A showed the satisfied or dissatisfied face to the student B until the student B asked what happened to student A. Then the student A told that she or he satisfied or dissatisfied about something. The students A can told the reason based on in the pictures that she or he got in the card.

Second meeting was so simple for the concept of information gap technique. First of all, after researcher explained the materials about descriptive text, she explained the vocabulary that related to the living room such as television, remote, sofa, table, books etc. Then the researcher created speaking activities with theme asking about vocabularies about living room. It meant that different student got different paper but the paper of student A was synchronous with the paper of student B. There were many losing vocabularies in the paper, so the student A or B tried to find their losing vocabularies by asking the losing vocabularies to each other until she or he found them.

The third meeting was the last time for doing the treatment in the eleventh grade students. In the activities, the concept of information gap technique was rarely difficult to students. The researcher shared the cards consisted of two colors, green and pink color for each pair work. There were pictures about living room that must be described and guessed by students. For example, the student A got remote pictures, so the she or he must be describe the characteristics of the pictures. After that, the student B must be guessed what was the picture described.

4.3 T-test Statistical Analysis

The t-test result of the experimental and control group proved that the both of two groups have significant. To find out the t-test, the researcher computed the posttest result of experimental and control group. It can be seen in the tables as follows:

Table 4.10

The Posttest Result of Experimental Group

No	Students'	Aspect of Scoring					Score	Total
	Code	G	V	C	F	P		Score
1	E-24	4	5	4	5	5	23	92
2	E-22	5	4	4	5	5	23	92
3	E-18	5	5	4	4	4	22	88
4	E-04	4	5	4	4	5	22	88
5	E-03	4	5	4	4	5	22	88
6	E-07	4	5	4	5	4	22	88
7	E-10	4	5	4	5	4	22	88
8	E-13	4	4	4	5	5	22	88
9	E-25	4	5	4	5	4	22	88
10	E-28	5	4	4	4	4	21	84
11	E-14	4	5	4	4	4	21	84
12	E-23	4	5	4	4	4	21	84
13	E-27	4	5	4	4	4	21	84
14	E-26	4	5	4	4	4	21	84
15	E-16	4	4	4	4	4	20	80
16	E-20	4	5	3	4	4	20	80
17	E-11	4	5	3	4	4	20	80
18	E-15	4	4	4	4	4	20	80
19	E-19	4	5	3	4	4	20	80
20	E-29	4	5	3	4	4	20	80
21	E-30	4	5	3	4	4	20	80
22	E-06	4	5	3	4	4	20	80
23	E-17	4	4	4	4	4	20	80
24	E-21	4	5	3	4	4	20	80
25	E-01	4	4	3	4	4	19	76
26	E-02	4	4	3	4	4	19	76
27	E-12	4	4	3	4	4	19	76
28	E-05	4	3	4	4	4	19	76
29	E-09	4	4	3	4	3	18	72
30	E-08	3	4	3	4	3	17	68

For example the computing of E-24 code:

Formula:

$$Score = \frac{\text{Student Score}}{\text{Maximal Score}} \text{X } 100$$

$$Score = \frac{4+5+4+5+5}{25} \text{X } 100$$

$$Score = \frac{23}{25} \text{X } 100 = 92$$

Table 4.11

The Posttest Result of Control Group

No	Students'	Aspect of Scoring					Score	Total
	Code	G	V	C	F	P		Score
1	C-07	3	4	3	2	4	16	64
2	C-12	3	3	3	3	3	15	60
3	C-10	3	3	3	2	4	15	60
4	C-18	3	4	3	2	3	15	60
5	C-23	3	3	3	2	4	15	60
6	C-25	3	3	3	2	3	14	56
7	C-19	3	3	3	2	3	14	56
8	C-21	3	3	3	2	3	14	56
9	C-20	3	3	3	2	3	14	56
10	C-04	2	4	3	2	3	14	56
11	C-11	2	4	3	2	3	14	56
12	C-27	2	3	3	2	4	14	56
13	C-29	3	3	3	2	3	14	56
14	C-22	2	3	3	2	4	14	56
15	C-26	3	3	3	2	3	14	56
16	C-30	3	3	2	2	3	13	52
17	C-28	2	3	3	2	3	13	52
18	C-24	2	3	3	2	3	13	52
19	C-08	2	3	3	2	3	13	52
20	C-15	2	3	3	2	3	13	52
21	C-06	3	3	3	2	2	13	52
22	C-02	2	3	3	2	3	13	52
23	C-17	2	3	3	1	3	12	48
24	C-05	1	3	3	2	3	12	48
25	C-14	1	3	3	2	3	12	48
26	C-09	1	3	3	2	3	12	48
27	C-03	1	3	3	2	2	11	44
28	C-16	2	3	2	2	2	11	44
29	C-01	1	2	3	2	2	10	40
30	C-13	1	2	3	2	2	10	40

For example the counting of C-07 code:

Formula:

$$Score = \frac{\text{Student Score}}{\text{Maximal Score}} \text{X } 100$$

$$Score = \frac{3+4+3+2+4}{16} \text{X } 100$$

$$Score = \frac{16}{25} \text{X } 100 = 64$$

From the two tables of the experimental and control group result can be find that the high score was gotten by E-24 code (92), however the high score of control group was gotten by C-07 code (64).

After researcher counted score of the experimental and control group, then the mean of experimental group was computed as follows:

Formula:

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

$$M = \frac{2464}{30}$$

$$M = 82.13$$

Meanwhile, the mean of control group was counted as follows:

Formula:

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

$$M = \frac{1588}{30}$$

$$M = 52.93$$

From the result of the mean, it can be seen that there is a significant different achievement between two groups. The average of experimental group was higher (82.13) than control group (52.93).

After that, the researcher counted standard deviation before computing the t-test, it can be seen as follows:

Formula:

$$S = \sqrt{\frac{(\mathrm{n1} - 1)\mathrm{S}_1^2 + (\mathrm{n2} - 1)\mathrm{S}_2^2}{n1 + n2 - 2}}$$

$$S = \sqrt{\frac{(30 - 1)32.81 + (30 - 1)\ 34.96}{30 + 30 - 2}}$$

$$S = \sqrt{\frac{(29)32.81 + (29)\ 34.96}{60 - 2}}$$

$$S = \sqrt{\frac{951.49 + 1013.84}{58}}$$

$$S = \sqrt{\frac{1965.33}{58}}$$

$$S = \sqrt{33.88}$$

$$S = 5.82$$

Finally, after the result of standard deviation is gotten, the researcher computed the t-test as follows:

Formula:

$$t = \frac{x_1 - x_2}{S\ X\ \sqrt{\frac{1}{n1} + \frac{1}{n2}}}$$

$$t = \frac{82.13 - 52.93}{5.82\ X \sqrt{\frac{1}{30} + \frac{1}{30}}}$$

$$t = \frac{29.2}{5.82\ X \sqrt{\frac{2}{60}}}$$

$$t = \frac{29.2}{3.36}$$

$$t = 8.69$$

The value of t-table with dk = 30 + 30 - 2 = 58, the significant level $\alpha = 5\%$ is 2.04. Based on the computation, it can be seen that the t-value (8.69) was higher than t-table (2.04). It can be concluded that there is significance difference achievement between experimental and control group.