

## CHAPTER IV

### RESEARCH FINDING & DISCUSSION

This chapter presented of two items, the findings of research and the discussion of the research. In findings item, the researcher showed all of the data which were collected during in the research. While in the discussion item, the researcher analysed all the data in finding item.

#### 1.1 Findings

The findings of this research deals with calculation of trying out of instrument, the analysis of data and the hypothesis testing. The finding was described as follows:

##### 1.1.1 Calculation of Trying out Instrument

###### 1.1.1.1 Validity

This reseach aimed to measure the instrument to be valid or not in improving the students' reading comprehension. The researcher conducted trying out of instrument on Monday, January 14<sup>th</sup>, 2019. It was given to the students at VIII G. there were 32 students that held the trying out of instrument. The item test is valid if  $r_{xy}$  are greater than  $r_{table}$  or  $r_{xy} > r_{table}$ . The researcher consulted the table of  $r$  with  $df = n-2$ ,  $df = 30 - 2 = 30$  and significant level 0,05 was 0,361.

To calculate the validity of the instrument used manual calculation as follows:

**Table. 4.1**

The Calculation of validity instrument

	The Score of $r_{xy}$	Valid/Invalid
1.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 521) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{16,672 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}}$ $= \frac{-90}{\sqrt{(255)(38,748)}}$ $= \frac{-90}{\sqrt{9,880,740}}$ $= \frac{-90}{3,143}$ $r_{xy} = -0,028$ $r_{xy} = -0,028 \leq 0,361$	INVALID
2.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 922) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$	VALID

	$= \frac{29,504 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$ $= \frac{910}{\sqrt{(87)(38,748)}}$ $= \frac{910}{\sqrt{3,371,076}}$ $= \frac{910}{1,836}$ $r_{xy} = 0,495$ $= 0,495 \geq 0,361$	
3.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 944) - (30 \times 986)}{\sqrt{\{(32 \times 30) - 900\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{30,208 - 29,580}{\sqrt{(960 - 900)(1,010,944 - 972,196)}}$ $= \frac{628}{\sqrt{(60)(38,748)}}$ $= \frac{628}{\sqrt{2,324,880}}$ $= \frac{628}{1,524}$ $r_{xy} = 0,412$ $= 0,412 \geq 0,361$	<b>VALID</b>

4.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 947) - (30 \times 986)}{\sqrt{\{(32 \times 30) - 900\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{30,304 - 29,580}{\sqrt{(960 - 900)(1,010,944 - 972,196)}}$ $= \frac{724}{\sqrt{(60)(38,748)}}$ $= \frac{724}{\sqrt{2,324,880}}$ $= \frac{724}{1,524}$ $r_{xy} = 0,475$ $= 0,475 \geq 0,361$	VALID
5.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 320) - (9 \times 986)}{\sqrt{\{(32 \times 9) - 81\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{10,240 - 8,874}{\sqrt{(288 - 81)(1,010,944 - 972,196)}}$ $= \frac{1366}{\sqrt{(207)(38,748)}}$ $= \frac{1366}{\sqrt{8,020,836}}$	VALID

	$= \frac{1366}{2,832}$ $r_{xy} = 0,482$ $= 0,482 \geq 0,361$	
6.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 701) - (23 \times 986)}{\sqrt{\{(32 \times 23) - 529\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{22,432 - 22,678}{\sqrt{(736 - 529)(1,010,944 - 972,196)}}$ $= \frac{-246}{\sqrt{(207)(38,748)}}$ $= \frac{-246}{\sqrt{8,020,836}}$ $= \frac{-246}{2,832}$ $r_{xy} = -0,086$ $= -0,086 \leq 0,361$	<b>INVALID</b>
7.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 435) - (12 \times 986)}{\sqrt{\{(32 \times 12) - 144\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{13,920 - 11,832}{\sqrt{(384 - 144)(1,010,944 - 972,196)}}$	<b>VALID</b>



	$= \frac{2,088}{\sqrt{(240)(38,748)}}$ $= \frac{2,088}{\sqrt{9,299,520}}$ $= \frac{2,088}{3,049}$ $r_{xy} = 0,684$ $= 0,684 \geq 0,361$	
8.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 687) - (21 \times 986)}{\sqrt{\{(32 \times 21) - 441\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{21,984 - 20,706}{\sqrt{(672 - 441)(1,010,944 - 972,196)}}$ $= \frac{1,278}{\sqrt{(231)(38,748)}}$ $= \frac{1,278}{\sqrt{8,950,788}}$ $= \frac{1,278}{2,991}$ $r_{xy} = 0,427$ $= 0,427 \geq 0,361$	<b>VALID</b>
9.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$	<b>INVALID</b>

	$= \frac{(32 \times 69) - (2 \times 986)}{\sqrt{\{(32 \times 2) - 4\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{2,208 - 1,972}{\sqrt{(64 - 4)(1,010,944 - 972,196)}}$ $= \frac{236}{\sqrt{(60)(38,748)}}$ $= \frac{236}{\sqrt{2,324,880}}$ $= \frac{236}{1,524}$ $r_{xy} = 0,154$ $= 0,154 \leq 0,361$	
10.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 418) - (13 \times 986)}{\sqrt{\{(32 \times 13) - 169\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{13,376 - 12,818}{\sqrt{(416 - 169)(1,010,944 - 972,196)}}$ $= \frac{558}{\sqrt{(247)(38,748)}}$ $= \frac{558}{\sqrt{9,570,756}}$ $= \frac{558}{3,093}$	<b>INVALID</b>

	$r_{xy} = 0,180$ $= 0,180 \leq 0,361$	
11.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 590) - (18 \times 986)}{\sqrt{\{(32 \times 18) - 324\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{18,880 - 7,748}{\sqrt{(576 - 324)(1,010,944 - 972,196)}}$ $= \frac{1,132}{\sqrt{(252)(38,748)}}$ $= \frac{1,132}{\sqrt{9,764,496}} = \frac{1,132}{3,124}$ $r_{xy} = 0,362$ $= 0,362 \geq 0,361$	<b>VALID</b>
12.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 413) - (12 \times 986)}{\sqrt{\{(32 \times 12) - 144\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{13,216 - 11,832}{\sqrt{(384 - 144)(1,010,944 - 972,196)}}$ $= \frac{1,384}{\sqrt{(240)(38,748)}}$ $= \frac{1,384}{\sqrt{9,299,520}}$	<b>VALID</b>



	$= \frac{1,384}{3,049}$ $r_{xy} = 0,453$ $= 0,453 \geq 0,361$	
13.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 927) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{29,664 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$ $= \frac{1,070}{\sqrt{(87)(38,748)}}$ $= \frac{1,070}{\sqrt{3,371,076}}$ $= \frac{1,070}{1,836}$ $r_{xy} = 0,582$ $= 0,582 \geq 0,361$	<b>VALID</b>
14.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 907) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{29,024 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$	<b>INVALID</b>

	$= \frac{430}{\sqrt{(87)(38,748)}}$ $= \frac{430}{\sqrt{3,371,076}}$ $= \frac{430}{1,836}$ $r_{xy} = 0,234$ $= 0,234 \leq 0,361$	
15.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 904) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{28,928 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$ $= \frac{334}{\sqrt{(87)(38,748)}}$ $= \frac{334}{\sqrt{3,371,076}}$ $= \frac{334}{1,836}$ $r_{xy} = 0,181$ $= 0,181 \leq 0,361$	<b>INVALID</b>
16.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$	<b>INVALID</b>

	$= \frac{(32 \times 919) - (30 \times 986)}{\sqrt{\{(32 \times 30) - 900\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{29,408 - 29,580}{\sqrt{(960 - 900)(1,010,944 - 972,196)}}$ $= \frac{-172}{\sqrt{(60)(38,748)}}$ $= \frac{-172}{\sqrt{2,324,880}}$ $= \frac{-172}{1,524}$ $r_{xy} = -0,1128$ $= -0,1128 \leq 0,361$	
17.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 924) - (30 \times 986)}{\sqrt{\{(32 \times 30) - 900\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{29,568 - 29,580}{\sqrt{(960 - 900)(1,010,944 - 972,196)}}$ $= \frac{-12}{\sqrt{(60)(38,748)}}$ $= \frac{-12}{\sqrt{2,324,880}}$ $= \frac{-12}{1,524}$ $r_{xy} = -0,0078$	<b>INVALID</b>

	$= -0,0078 \leq 0,361$	
18.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 590) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{18,880 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}}$ $= \frac{2,118}{\sqrt{(255)(38,748)}}$ $= \frac{2,118}{\sqrt{9,880,740}} = \frac{2,118}{3,143}$ $r_{xy} = 0,673$ $= 0,673 \geq 0,361$	<b>VALID</b>
19.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 899) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{28,768 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$ $= \frac{174}{\sqrt{(87)(38,748)}}$ $= \frac{174}{\sqrt{3,371,076}} = \frac{174}{1,836}$	<b>INVALID</b>

	$r_{xy} = 0,0947$ $= 0,0947 \leq 0,361$	
20.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $\frac{(32 \times 961) - (31 \times 986)}{\sqrt{\{(32 \times 31) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{30,752 - 30,566}{\sqrt{(992 - 961)(1,010,944 - 972,196)}}$ $= \frac{186}{\sqrt{(31)(38,748)}}$ $= \frac{186}{\sqrt{1,201,188}} = \frac{186}{1,095}$ $r_{xy} = 0,169$ $= 0,169 \leq 0,361$	<b>INVALID</b>
21.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $\frac{(32 \times 861) - (28 \times 986)}{\sqrt{\{(32 \times 28) - 784\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{27,552 - 27,608}{\sqrt{(896 - 784)(1,010,944 - 972,196)}}$ $= \frac{56}{\sqrt{(112)(38,748)}}$ $= \frac{56}{\sqrt{4,339,776}} = \frac{56}{2,083}$	<b>INVALID</b>



	$r_{xy} = 0,026$ $= 0,026 \leq 0,361$	
22.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 861) - (28 \times 986)}{\sqrt{\{(32 \times 28) - 784\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{27,552 - 27,608}{\sqrt{(896 - 784)(1,010,944 - 972,196)}}$ $= \frac{56}{\sqrt{(112)(38,748)}}$ $= \frac{56}{\sqrt{4,339,776}} = \frac{56}{2,083}$ $r_{xy} = 0,026$ $= 0,026 \leq 0,361$	<b>INVALID</b>
23.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 626) - (19 \times 986)}{\sqrt{\{(32 \times 19) - 361\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{20,032 - 18,734}{\sqrt{(608 - 361)(1,010,944 - 972,196)}}$ $= \frac{1,298}{\sqrt{(247)(38,748)}}$ $= \frac{1,298}{\sqrt{9,570,756}} = \frac{1,298}{3,093}$	<b>VALID</b>

	$r_{xy} = 0,419$ $= 0,419 \geq 0,361$	
24.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 510) - (16 \times 986)}{\sqrt{\{(32 \times 16) - 256\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{16,320 - 15,776}{\sqrt{(512 - 256)(1,010,944 - 972,196)}}$ $= \frac{544}{\sqrt{(256)(38,748)}}$ $= \frac{544}{\sqrt{9,919,488}} = \frac{544}{3,149}$ $r_{xy} = 0,172$ $= 0,172 \leq 0,361$	<b>INVALID</b>
25.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 35) - (1 \times 986)}{\sqrt{\{(32 \times 1) - 1\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{1,120 - 986}{\sqrt{(32 - 1)(1,010,944 - 972,196)}}$ $= \frac{134}{\sqrt{(31)(38,748)}}$	<b>INVALID</b>

	$= \frac{134}{\sqrt{1,201,188}} = \frac{134}{1,095}$ $r_{xy} = 0,112$ $= 0,112 \leq 0,361$	
26.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 921) - (29 \times 986)}{\sqrt{\{(32 \times 29) - 841\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{29,472 - 28,594}{\sqrt{(928 - 841)(1,010,944 - 972,196)}}$ $= \frac{878}{\sqrt{(87)(38,748)}}$ $= \frac{878}{\sqrt{3,371,076}} = \frac{878}{1,836}$ $r_{xy} = 0,478$ $= 0,478 \geq 0,361$	<b>VALID</b>
27.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 590) - (18 \times 986)}{\sqrt{\{(32 \times 18) - 324\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{18,880 - 17,748}{\sqrt{(576 - 324)(1,010,944 - 972,196)}}$ $= \frac{1,132}{\sqrt{(252)(38,748)}}$	<b>VALID</b>

	$= \frac{1,132}{\sqrt{9,764,496}} = \frac{1,132}{3,124}$ $r_{xy} = 0,362$ $= 0,362 \geq 0,361$	
28.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 756) - (24 \times 986)}{\sqrt{\{(32 \times 24) - 576\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{24,192 - 23,664}{\sqrt{(768 - 576)(1,010,944 - 972,196)}}$ $= \frac{528}{\sqrt{(192)(38,748)}}$ $= \frac{528}{\sqrt{7,439,616}} = \frac{528}{2,727}$ $r_{xy} = 0,193$ $= 0,193 \leq 0,361$	<b>INVALID</b>
29.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 275) - (9 \times 986)}{\sqrt{\{(32 \times 9) - 81\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{8,800 - 8874}{\sqrt{(288 - 81)(1,010,944 - 972,196)}}$	<b>INVALID</b>

	$= \frac{-74}{\sqrt{207(38,748)}}$ $= \frac{-74}{\sqrt{8,020,836}} = \frac{-74}{2,832}$ $r_{xy} = -0,0261$ $= -0,0261 \leq 0,361$	
30.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 841) - (26 \times 986)}{\sqrt{\{(32 \times 26) - 676\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{26,912 - 25,636}{\sqrt{(832 - 676)(1,010,944 - 972,196)}}$ $= \frac{1,276}{\sqrt{(156)(38,748)}}$ $= \frac{1,276}{\sqrt{6,044,688}} = \frac{1,276}{2,458}$ $r_{xy} = 0,519$ $= 0,519 \geq 0,361$	<b>VALID</b>
31.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 500) - (15 \times 986)}{\sqrt{\{(32 \times 15) - 225\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{16000 - 14,790}{\sqrt{(480 - 225)(1,010,944 - 972,196)}}$	<b>VALID</b>



	$= \frac{1,210}{\sqrt{(255)(38,748)}}$ $= \frac{1,210}{\sqrt{9,880,740}} = \frac{1,210}{3,143}$ $r_{xy} = 0,384$ $= 0,384 \geq 0,361$	
32.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 851) - (27 \times 986)}{\sqrt{\{(32 \times 27) - 729\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{27,232 - 26,622}{\sqrt{(864 - 729)(1,010,944 - 972,196)}}$ $= \frac{610}{\sqrt{(135)(38,748)}}$ $= \frac{610}{\sqrt{5,230,980}} = \frac{610}{2,287}$ $r_{xy} = 0,266$ $= 0,266 \leq 0,361$	<b>INVALID</b>
33.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $\frac{(32 \times 538) - (18 \times 986)}{\sqrt{\{(32 \times 18) - 324\} \{(32 \times 31,592) - 972,196\}}}$	<b>INVALID</b>

	$= \frac{17,216 - 17,748}{\sqrt{(576 - 324)(1,010,944 - 972,196)}}$ $= \frac{-532}{\sqrt{(252)(38,748)}}$ $= \frac{-532}{\sqrt{9,764,496}} = \frac{-532}{3,124}$ $r_{xy} = -0,170$ $= -0,170 \leq 0,361$	
34.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 789) - (24 \times 986)}{\sqrt{\{(32 \times 24) - 576\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{25,248 - 23,664}{\sqrt{(768 - 576)(1,010,944 - 972,196)}}$ $= \frac{1584}{\sqrt{(192)(38,748)}}$ $= \frac{1,584}{\sqrt{7,439,616}} = \frac{1,584}{2,727}$ $r_{xy} = 0,580$ $= 0,580 \geq 0,361$	<b>VALID</b>
35.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 213) - (6 \times 986)}{\sqrt{\{(32 \times 6) - 36\} \{(32 \times 31,592) - 972,196\}}}$	<b>VALID</b>

	$= \frac{6,816 - 5,916}{\sqrt{(192 - 36)(1,010,944 - 972,196)}}$ $= \frac{900}{\sqrt{(156)(38,748)}}$ $= \frac{900}{\sqrt{6,044,688}} = \frac{900}{2,458}$ $r_{xy} = 0,366$ $= 0,366 \geq 0,361$	
36.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 562) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{17,984 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}}$ $= \frac{12,22}{\sqrt{(255)(38,748)}}$ $= \frac{1,222}{\sqrt{9,880,740}} = \frac{1,222}{3,143}$ $r_{xy} = 0,388$ $= 0,388 \geq 0,361$	<b>VALID</b>
37.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$	<b>VALID</b>

	$= \frac{(32 \times 813) - (25 \times 986)}{\sqrt{\{(32 \times 25) - 625\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{26,016 - 24,650}{\sqrt{(800 - 625)(1,010,944 - 972,196)}}$ $= \frac{1,366}{\sqrt{(175)(38,748)}}$ $= \frac{1,366}{\sqrt{6,780,900}} = \frac{1,366}{2,604}$ $r_{xy} = 0,5245$ $= 0,5245 \geq 0,361$	
38.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 593) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{18,976 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}}$ $= \frac{2,214}{\sqrt{(255)(38,748)}}$ $= \frac{2,214}{\sqrt{9,880,740}} = \frac{2,214}{3,143}$ $r_{xy} = 0,7043$ $= 0,7043 \geq 0,361$	<b>VALID</b>
39.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$	<b>VALID</b>

	$= \frac{(32 \times 875) - (27 \times 986)}{\sqrt{\{(32 \times 27) - 729\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{28,000 - 26,622}{\sqrt{(864 - 729)(1,010,944 - 972,196)}}$ $= \frac{1,378}{\sqrt{(135)(38,748)}}$ $= \frac{1,378}{\sqrt{5,230,980}} = \frac{1,378}{2,287}$ $r_{xy} = 0,6025$ $= 0,6025 \geq 0,361$	
40.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 656) - (21 \times 986)}{\sqrt{\{(32 \times 21) - 441\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{20,992 - 20,706}{\sqrt{(672 - 441)(1,010,944 - 972,196)}}$ $= \frac{286}{\sqrt{(231)(38,748)}}$ $= \frac{286}{\sqrt{8,950,788}} = \frac{286}{2,991}$ $r_{xy} = 0,0956$ $= 0,0956 \leq 0,361$	<b>INVALID</b>
41.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$	<b>VALID</b>



	$= \frac{(32 \times 878) - (27 \times 986)}{\sqrt{\{(32 \times 27) - 729\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{28,096 - 26,622}{\sqrt{(864 - 729)(1,010,944 - 972,196)}}$ $= \frac{1,474}{\sqrt{(135)(38,748)}}$ $= \frac{1,474}{\sqrt{5,230,980}}$ $= \frac{1,474}{2,287}$ $r_{xy} = 0,644$ $= 0,644 \geq 0,361$	
42.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 900) - (28 \times 986)}{\sqrt{\{(32 \times 28) - 784\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{28,800 - 27,608}{\sqrt{(896 - 784)(1,010,944 - 972,196)}}$ $= \frac{1,192}{\sqrt{(112)(38,748)}}$ $= \frac{1,192}{\sqrt{4,339,776}}$ $= \frac{1,192}{2,083}$	<b>VALID</b>

	$r_{xy} = 0,5722$ $= 0,5722 \geq 0,361$	
43.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 209) - (7 \times 986)}{\sqrt{\{(32 \times 7) - 49\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{6,688 - 6,902}{\sqrt{(224 - 49)(1,010,944 - 972,196)}}$ $= \frac{-214}{\sqrt{(175)(38,748)}}$ $= \frac{-214}{6,780,900} = \frac{-214}{2,604}$ $r_{xy} = -0,0821$ $= -0,0821 \leq 0,361$	<b>INVALID</b>
44.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 841) - (26 \times 986)}{\sqrt{\{(32 \times 26) - 676\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{26,912 - 25,636}{\sqrt{(832 - 676)(1,010,944 - 972,196)}}$ $= \frac{1,276}{\sqrt{(156)(38,748)}}$	<b>VALID</b>

	$= \frac{1,276}{\sqrt{6,044,688}}$ $= \frac{1,276}{2,458}$ $r_{xy} = 0,5191$ $= 0,5191 \geq 0,361$	
45.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 357) - (11 \times 986)}{\sqrt{\{(32 \times 11) - 121\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{11,424 - 10,846}{\sqrt{(352 - 121)(1,010,944 - 972,196)}}$ $= \frac{578}{\sqrt{(231)(38,748)}}$ $= \frac{578}{\sqrt{8,950,788}} = \frac{578}{2,991}$ $r_{xy} = 0,193$ $= 0,193 \leq 0,361$	<b>INVALID</b>
46.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 269) - (9 \times 986)}{\sqrt{\{(32 \times 9) - 81\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{8,608 - 8,874}{\sqrt{(288 - 81)(1,010,944 - 972,196)}}$	<b>INVALID</b>

	$= \frac{-266}{\sqrt{(207)(38,748)}}$ $= \frac{-266}{\sqrt{8,020,836}} = \frac{-266}{2,832}$ $r_{xy} = -0,093$ $= -0,093 \geq 0,361$	
47.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 392) - (11 \times 986)}{\sqrt{\{(32 \times 11) - 121\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{12,544 - 10,846}{\sqrt{(352 - 121)(1,010,944 - 972,196)}}$ $= \frac{1,698}{\sqrt{(231)(38,748)}}$ $= \frac{1,698}{\sqrt{8,950,788}} = \frac{1,698}{2,991}$ $r_{xy} = 0,567$ $= 0,567 \geq 0,361$	<b>VALID</b>
48.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 277) - (8 \times 986)}{\sqrt{\{(32 \times 8) - 64\} \{(32 \times 31,592) - 972,196\}}}$	<b>INVALID</b>

	$= \frac{8,864 - 7,888}{\sqrt{(256 - 64)(1,010,944 - 972,196)}}$ $= \frac{976}{\sqrt{(192)(38,748)}}$ $= \frac{976}{\sqrt{7,439,616}} = \frac{976}{2,727}$ $r_{xy} = 0,3579$ $= 0,3579 \geq 0,361$	
49.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 541) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$ $= \frac{17,312 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}}$ $= \frac{550}{\sqrt{(255)(38,748)}}$ $= \frac{550}{\sqrt{9,880,740}} = \frac{550}{3,143}$ $r_{xy} = 0,174$ $= 0,174 \leq 0,361$	<b>INVALID</b>
50.	$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$ $= \frac{(32 \times 558) - (17 \times 986)}{\sqrt{\{(32 \times 17) - 289\} \{(32 \times 31,592) - 972,196\}}}$	<b>INVALID</b>



$$\begin{aligned}
 &= \frac{17,856 - 16,762}{\sqrt{(544 - 289)(1,010,944 - 972,196)}} \\
 &= \frac{1,094}{\sqrt{(255)(38,748)}} \\
 &= \frac{1,094}{\sqrt{9,880,740}} \\
 &= \frac{1,094}{3,143} \\
 & r_{xy} = 0,348 \\
 &= 0,348 \leq 0,361
 \end{aligned}$$

Based on the computation above, from 50 questions to be tested, it showed there were 25 questions that valid and there were 25 questions that invalid.

The researcher determined the valid questions and invalid question as the following tablebelow:

**Table 4.2**

Calculation Valid question and invalid question

Valid	Invalid
2,3,4,5,7,8,11,12,	1,6,9,10,14,15,16,
13,18,23,26,27,30,	17,19,20,21,22,24,
31,34,35,36,37,38,	25,28,29,32,33,40,

39,41,42,44,47	43,45,46,48,49,50
<b>Sum: 25</b>	<b>Sum: 25</b>

Based on the table above, the 25 items which were valid was used for pre-test and post-test questions. And for the 25 invalid items, were not used for the test.

### 1.1.1.2 Reliability

After measuring the validity, the researcher calculated the reliability. This research was aimed to know the instrument was reliable or not. The researcher calculated the reliability by determining the odd and even of the questions number. The item test is reliable when  $r_{11} > r_{table}$ .

To calculated reliability of trying out instrument used manual calculation as follows:

**Table. 4.3**

The Calculation of reliability Instrument

The Score of $r_{11}$	Reliable / Not Reliable
$r_{11} = \frac{2 r_{1/21/2}}{1 + r_{1/21/2}}$ $= \frac{2 \cdot (0,800)}{1 + (0,800)}$	<b>Reliable</b>

$= \frac{1,6}{1,8}$ $= 0,89$ $= 0,89 > 0,7$	
---	--

Based on the calculation above, it was found  $r_{11}$  was 0.89 and  $r_{table} 0,7$  as argued by (Widoyoko, 2016:261) cites in Lin (1989) and Kaplan (1982). Clearly, it can be seen that  $r_{11}$  was greater than  $r_{table}$  or  $0,89 > 0,7$ . It meant that the instrument of trying out test was reliable and could be tested repeatedly.

### 1.1.2 The Data Analysis

This purpose of this research is to know the effectiveness of team game tournament method in improving the students' reading comprehension at eighth grade of SMP N 2 Jepara in the academic year of 2018/2019. The researcher collected the data from student's pre-test and post-test. The data was described into two points as the data experimental group and control group. VIII F consisted of 32 students as an experimental group that used team games tournament method and VIII E which consist of 32 students as control group without team games tournament method.

The researcher used recount text as learning materials, furthermore, test scores of students was compared using t-test manually and statistically by SPSS 20.0 to determine the ineffectiveness team game tournament method in improving the students' reading comprehension. The data which was obtained described into tables as follows:

#### **1.1.2.1 The Result of Pre-test**

The researcher conducted pre-test in first meeting. The pre-test was given to experimental and control group. It was given on 23<sup>rd</sup> of January 2019, but in different time. The purpose of pre-test is to know the students' improvement in reading comprehension. After the pre-test, the researcher implemented the treatment for three meetings, and in the last meeting, the researcher conducted post-test in both of group, experimental and control group.

The following table shows the score of the pre-test in experimental and control group.



**Table 4.4**

The Pre-Test Score of Experimental and Control Group

No.	EXP Group	$(x - \bar{x})$	$(x - \bar{x})^2$	CONT Group	$(x - \bar{x})$	$(x - \bar{x})^2$
1	80	8,875	78,77	68	2,25	5,0625
2	68	-3,125	9,77	64	-1,75	3,0625
3	72	0,875	0,77	56	-9,75	95,0625
4	60	-11,125	123,77	64	-1,75	3,0625
5	72	0,875	0,77	60	-5,75	33,0625
6	64	-7,125	50,77	84	18,25	333,0625
7	72	0,875	0,77	44	-21,75	473,0625
8	68	-3,125	9,77	80	14,25	203,0625
9	76	4,875	23,77	72	6,25	39,0625
10	80	8,875	78,77	52	-13,75	189,0625
11	80	8,875	78,77	52	-13,75	189,0625
12	72	0,875	0,77	64	-1,75	3,0625
13	84	12,875	165,77	84	18,25	333,0625
14	84	12,875	165,77	76	10,25	105,0625
15	56	-15,125	228,77	80	14,25	203,0625
16	68	-3,125	9,77	76	10,25	105,0625
17	48	-23,125	534,77	52	-13,75	189,0625
18	84	12,875	165,77	48	-17,75	315,0625



19	72	0,875	0,77	60	-5,75	33,0625
20	72	0,875	0,77	60	-5,75	33,0625
21	72	0,875	0,77	84	18,25	333,0625
22	84	12,875	165,77	76	10,25	105,0625
23	76	4,875	23,77	64	-1,75	3,0625
24	68	-3,125	9,77	84	18,25	333,0625
25	76	4,875	23,77	60	-5,75	33,0625
26	84	12,875	165,77	60	-5,75	33,0625
27	76	4,875	23,77	52	-13,75	189,0625
28	80	8,875	78,77	52	-13,75	189,0625
29	68	-3,125	9,77	72	6,25	39,0625
30	68	-3,125	9,77	60	-5,75	33,0625
31	48	-23,125	534,77	68	2,25	5,0625
32	44	-27,125	735,77	76	10,25	105,0625
	$\sum x$ <b>2276</b>	<b>0</b>	<b>3511,50</b>	$\sum x$ <b>2104</b>	<b>0</b>	<b>4286</b>

### 1. Mean of the Pre-test in Experimental Group

$$\bar{x} = \frac{\sum x}{n}$$

$$\bar{x} = \frac{2276}{32}$$

$$\bar{x} = 71.125$$

### 2. Standard Deviation of Pre-test in Experimental Group

$$SD = \sqrt{\frac{\sum(x - \bar{x})^2}{n}}$$

$$SD = \sqrt{\frac{3511,50}{32}}$$

$$SD = \sqrt{109.734375}$$

$$SD = 10.475$$

$$SD = 10$$

### 3. Mean of the Pre-test in Control Group

$$\bar{x} = \frac{\sum x}{n}$$

$$\bar{x} = \frac{2104}{32}$$

$$\bar{x} = 65.75$$

### 4. Standard Deviation of Pre-test in Control Group

$$SD = \sqrt{\frac{\sum(x - \bar{x})^2}{n}}$$

$$SD = \sqrt{\frac{4286}{32}}$$

$$SD = \sqrt{133.9375}$$

$$SD = 11.5731 \quad SD = 12$$

Based on the table above, the mean score of the pre-test in experimental group was 71,125, and the mean score of the pre-test

in control group was 65,75. It can be concluded that the pre-test score in experimental was the higher than in the control class.

After calculating the result of the students score above, the mean score and standard deviation of pre-test experimental and control group could be seen in the following table:

**Table 4.5**

The mean score and standart deviation of the pre-test in experimental and control group

Class	Mean Score	Standard Deviation
Experimental	71.125	10
Control	65.75	12

$$S^2 = \frac{(n1-1)(S1)^2 + (n2-1)(S2)^2}{(n1+n2)-2}$$

$$S^2 = \frac{(32-1)(10)^2 + (32-1)(12)^2}{(32+32)-2}$$

$$S^2 = \frac{(31)100 + (31)144}{62}$$

$$S^2 = \frac{3,100 + 4,464}{62}$$

$$S^2 = \frac{7,564}{62}$$

$$S^2 = 122$$

$$S = 11.045361$$

While,

$$t_o = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$t_o = \frac{71.125 - 65.75}{11.045 \sqrt{\frac{1}{32} + \frac{1}{32}}}$$

$$t_o = \frac{71.125 - 65.75}{11.045 \sqrt{\frac{2}{32}}}$$

$$t_o = \frac{71.125 - 65.75}{11.045(0.25)}$$

$$t_o = \frac{5.375}{2.761}$$

$$t_o = 1.946$$

From the calculation of t-test pre-test in experimental and control groups using manually above, the result of pre-test experimental and control group used t-test of  $t_o$  was 1.946 and the degree of freedom (df) was 62 and the level of significant 0,05, so the value of  $t_{table}$  was 2.000. So, it could be conclude that  $t_o < t_{table}$ , it meant that there was no significant between experimental and control group.

After analyzing the T-test using manually, the reseracher applied the t-test using SPSS 20.0. The result of analyzing the t-test using SPSS 20.0 Program could be seen as follows:

**Table. 4.6**

The T-test Result of Pre-test Score Experimental and Control Group.

Group Statistics										
		GROUP	N	Mean	Std. Deviation	Std. Error Mean				
PRETEST SCORE		GROUP 1	32	71,1250	10,64303	1,88144				
		GROUP 2	32	65,7500	11,75832	2,07860				

  

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
PRETEST SCORE	Equal variances assumed	1,691	,198	1,917	62	,060	5,37500	2,80364	-,22939	10,97939
	Equal variances not assumed			1,917	61,394	,060	5,37500	2,80364	-,23049	10,98049

The table above described the t-test analysis using SPSS of pre-test in experimental and control group. There were two tables, first table was named "Group Statistic" presented the statistical results of pre-test in experimental and control group. The group statistic show that the average between experimental and control group were different. The mean score of experimental group was 71.125 and the mean score of control group was 65.25, it meant that the experimental



was the higher score than control group. It can be concluded that the experimental and control group had different understanding in reading comprehension.

The second table was named "Independent sample test" described the statistical of this research. The analysis showed that the difference was significant was 0,60. It meant there was no significant the pre-test score of experimental group and control group. The significant level of  $0,60 > 0,05$ . It indicates that the pre-test of experimental and control group was no significant in improving the students' reading comprehension.

In the independent sample test table also described about the value of this research. The result of t-value in this research was 1.917. furthermore, the t-value was compared to the t-table to know whether through Team Game Tournament the students can improve their reading comprehension or not. The t-table was taken from the requirement of t-table to analyse the data. The t-table of 0,05 as the significant level was 2,000 with 62 the degree of freedom(df). Then, it can be stated that t-value (1,917) of pre  $<$  t-table (2,000). It can be concluded that there was no significant between experimental and control group in improving the students' reading comprehension at the eighth grades of SMP N 02 Jepara in the academic year 2018/2019.

### 1.1.2.2 The Result of Post-test

The post-test was given to experimental and control group after presenting the material about recount text. It was given on 6<sup>th</sup> of February 2019 both of experimental and control group, but in different time.

The following table shows the score of the post-test in experimental and control group.

**Table 4.7**  
The Post-Test Score of Experimental and Control Group

No.	Post-test (Ex)	$(x - \bar{x})$	$(x - \bar{x})^2$	Post-test (Cont)	$(x - \bar{x})$	$(x - \bar{x})^2$
1	96	1,25	1,5625	64	-13,25	175,5625
2	92	-2,75	7,5625	60	-17,25	297,5625
3	100	5,25	27,5625	80	2,75	7,5625
4	96	1,25	1,5625	76	-1,25	1,5625
5	100	5,25	27,5625	72	-5,25	27,5625
6	92	-2,75	7,5625	84	6,75	45,5625
7	100	5,25	27,5625	64	-13,25	175,5625
8	100	5,25	27,5625	76	-1,25	1,5625
9	100	5,25	27,5625	84	6,75	45,5625
10	84	-10,75	115,5625	72	-5,25	27,5625
11	100	5,25	27,5625	64	-13,25	175,5625

12	92	-2,75	7,5625	60	-17,25	297,5625
13	100	5,25	27,5625	88	10,75	115,5625
14	92	-2,75	7,5625	76	-1,25	1,5625
15	100	5,25	27,5625	76	-1,25	1,5625
16	96	1,25	1,5625	88	10,75	115,5625
17	84	-10,75	115,5625	84	6,75	45,5625
18	100	5,25	27,5625	60	-17,25	297,5625
19	84	-10,75	115,5625	68	-9,25	85,5625
20	88	-6,75	45,5625	84	6,75	45,5625
21	88	-6,75	45,5625	88	10,75	115,5625
22	88	-6,75	45,5625	88	10,75	115,5625
23	84	-10,75	115,5625	84	6,75	45,5625
24	92	-2,75	7,5625	88	10,75	115,5625
25	100	5,25	27,5625	92	14,75	217,5625
26	92	-2,75	7,5625	84	6,75	45,5625
27	100	5,25	27,5625	72	-5,25	27,5625
28	100	5,25	27,5625	72	-5,25	27,5625
29	100	5,25	27,5625	92	14,75	217,5625
30	96	1,25	1,5625	68	-9,25	85,5625
31	96	1,25	1,5625	80	2,75	7,5625
32	100	5,25	27,5625	84	6,75	45,5625

	$\sum x$ 3032	0	1038	$\sum x$ 2472		
					0	3054

### 1. Mean of the Post-test in Experimental

$$\bar{x} = \frac{\sum x}{n}$$

$$\bar{x} = \frac{3032}{32}$$

$$\bar{x} = 94.75$$

### 2. Standard Deviation of Post-test in Experimental

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

$$SD = \sqrt{\frac{1038}{32}}$$

$$SD = \sqrt{32.4375}$$

$$SD = 5.695$$

$$SD = 6$$

### 3. Mean of the Post-test in Control

$$\bar{x} = \frac{\sum x}{n}$$

$$\bar{x} = \frac{2472}{32}$$

$$\bar{x} = 77.25$$

### 4. Standard Deviation of Post-test in Control

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$



$$SD = \sqrt{\frac{3054}{32}}$$

$$SD = \sqrt{95.4375}$$

$$SD = 9.7692$$

$$SD = 10$$

Based on the table above, the mean score of the post-test in experimental group was 94.75, and the mean score of the post-test in control group was 77.25. It can be concluded that the post-test score in experimental was the higher than in the control class.

After calculating the result of the students score, the mean score and standard deviation of post-test experimental and control group could be seen in the following table :

**Table. 4.8**

The mean score and standart deviation of the post-test in experimental and control group

Class	Mean Score	Standard Deviation
Experimental	94.75	6
Control	77.25	10

$$S^2 = \frac{(n1-1)(S1)^2 + (n2-1)(S2)^2}{(n1+n2)-2}$$

$$S^2 = \frac{(32-1)(6)^2 + (32-1)(10)^2}{(32+32)-2}$$

$$S^2 = \frac{(31)36 + (31)100}{62}$$



$$S^2 = \frac{1,116+3,100}{62}$$

$$S^2 = \frac{4,216}{62}$$

$$S^2 = 68$$

$$S = 8.246$$

While,

$$t_o = \frac{\bar{x}_1 - \bar{x}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$t_o = \frac{94.75 - 77.34}{8.246 \sqrt{\frac{1}{32} + \frac{1}{32}}}$$

$$t_o = \frac{94.75 - 77.34}{8.246 \sqrt{\frac{2}{32}}}$$

$$t_o = \frac{94.75 - 77.34}{8.246 \sqrt{0.0625}}$$

$$t_o = \frac{94.75 - 77.34}{8.246(0.25)}$$

$$t_o = \frac{17.41}{2.0165}$$

$$t_o = 8.633$$

From the calculation the t-test of post-test experimental and control group using manually above, the result of post-test experimental and control group used t-test of  $t_o$  was 8.633 and the degree of freedom (df) was 62 and the level of significant 0,05, so the value of  $t_{table}$  was 2.000. So, it could be conclude that  $t_o > t_{table}$ , it meant that TGT method can improve the students' reading comprehension.

After analyzing the t-test of post-test experimental and control group using manually, the reseracher applied the t-test using SPSS 20.0. The result of analyzing the t-test using SPSS 20.0 Program could be seen as follows:

**Table. 4.9**

The T-test Result of Post-Test Score Experimental and Control Group.

**Group Statistics**

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
POSTTEST SCORE	GROUP 1	32	94,7500	5,78652	1,02292
	GROUP 2	32	77,2500	9,92553	1,75460

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
POSTTEST SCORE	Equal variances assumed	12,448	,001	8,616	62	,000	17,50000	2,03101	13,44007	21,55993
	Equal variances not assumed			8,616	49,890	,000	17,50000	2,03101	13,42038	21,57962

The table above described the t-test analysis of post-test in experimental and control group. There were two tables, first table was named “Group Statistic” presented the statistical results of pre-test in experimental and control group. The group statistic show that the average between experimental and control group were different. The mean score of experimental groups was 94.75 and the mean score of control group was 77.25, it meant that the experimental was the higher score then control group. It can be concluded that the score of the post-test in the experimental and control group had different understanding in reading comprehension.

The second table was named “Independent sample test” described the statistical of this research. The analysis showed that the difference significant was 0,00. It meant there was significant the post-test score of experimental group and control group. The significant level of  $0,00 < 0,05$ . It indicates that the post-test of experimental and control group was significant in improving the students’ reading comprehension.

In the independent sample test table also described about the value of this research. The result of t-value in this research was 8,616. Furthermore, the t-value was compared to the t-table to know whether through Team Game Tournament the students can improve their

reading comprehension or not. The t-table was taken from the requirement of t-table to analyse the data. The t-table of 0,05 as the significant level was 2,000 with 62 the degree of freedom(df). Then, it can be stated that t-value (8,161) of post-test > t-table (2,000). It can be concluded that Team Game Tournament (TGT) method can improve the students' reading comprehension at the eighth grades of SMP N 02 Jepara in the academic year of 2018/2019.

### **1.1.3 The Hypothesis Testing**

This research aimed to answer the problem statement of reseach, the reseacher found out the effectiveness of Team Game Tournament method to improve the students' reading comprehension (A True Experimental Study at the eighth grade of SMP N 2 Jepara in the academic year 2018/2019). To prove the hypothesis, the data obtained in experimental and control group were calculated by using t-test formula manual and SPSS. Based on the discription of the data calculation, it shows that:

1. The t-value was 8,616
2. The degree of freedom (df) was 62, so the value of t-table was 2,000 in significance level of 0,05.

It showed that the result of post-test both experimental and control group was t-value (8.616) was higher than t-table (2,000). To

conclude, the  $t$ -value  $>$   $t$ -table means that  $H_0$  (the Null hypothesis) was rejected and  $H_a$  (The Alternative hypothesis) was accepted. Moreover, the stating that “Team Games Tournament method is effective to improve the students’ reading comprehension at the eight grade of SMP N 2 Jepara in the academic year 2018/2019”.

## 1.2 Discussion

Team game tournament method was a teaching method which assigns students into groups that consists of four or five heterogeneous members in each group. Students in the experimental group which was taught through team game tournament (TGT) and the control group which was taught without team game tournament method. The students in experimental group looked enjoy and more attractive in learning activity, because they learnt with playing games. In teaching learning, the teacher assigned the students to four or five team’s members. Each team should be heterogeneous. Students could work with their friends to solve the problems and to achieve the goals. Slavin (2005:163) state that TGT model is one type or model of cooperative learning that is easy to apply, involving the activities of all students seems to have no status difference, involving the role of students as peer tutors and contain elements of game and reinforcement.

The result of data pre-test and post-test happened in both classes, experimental group and control group. The experimental group which was taught



through team game tournament method and the control group which was taught without team game tournament method. The experimental group which was taught by team game tournament method was higher to improve the students' reading comprehension than the control group which was taught without team game tournament method. The mean of pre-test in experimental group was 71.125, became 94.75 was mean score in post-test. Meanwhile, the mean score of the pre-test in control group was 65.75 and post-test was 77.34. It shows from the mean score of the post-test in the experimental group was higher than control group's post-test. In other side, the data analysis used t-test, the value  $t_o$  of pre-test in experimental and control group was 1,948 with the degree of freedom 62 in the level significance ( $\alpha$ ) of 0,05,  $t_{table}$  was 2,000 and the value  $t_o$  of post-test in experimental and control group was 8.616 with the degree of freedom 62 in the level significance ( $\alpha$ ) of 0,05,  $t_{table}$  was 2,000. It means that  $t_o$  was higher than  $t_{table}$  in post-test of experimental and control groups only. So, the Null hypothesis ( $H_o$ ) was rejected then alternative hypothesis was accepted that there was an effectiveness of team game tournament method to improve the students' reading comprehension at eighth grades of SMP N 02 Jepara in the academic year of 2018/2019.

