CHAPTER IV

RESEARCH FINDING AND DISCUSSION

This chapter describes about normality and homogeneity testing, research finding that include data of research finding, data analysis, hypothesis testing and discussion.

A. Research Findings

In this chapter, the researcher presented the data on student's vocabulary mastery before and after being taught by using *Team Game Tournament* as technique in the process of teaching vocabulary mastery. In this presentations, the researcher presented and analyzed the data which had been collected through two kinds of tests, they are pre-test and post-test. It was conducted for twenty eight students.

As mentioned before, the researcher used test as the instrument in collecting data. It was given to class X-IPS 4 students of SMAN 1 Campurdarat.

The number of question given by researcher was 20 questions. It was consist of multiple choice test. There were 28 students as respondent or subject at the research. The data of the student's achievement before and after teaching vocabulary mastery by using *Team Game Tournament*technique can be seen in the following table.

Description of Students' Vocabulary mastery in the Score Before and after being taught by Team Game Tournament Technique

In this section, the researcher presented the result of the pre-test and post-test that had been done before and after treatment. Pre-test was held on Saturday, October22, 2016 at 07.00 until 08.30 am. It consisted of 20 items multiple choices. Post-test was administered on Saturday, October 29, 2016 at 07.00 – 08.30 am. The list of students' score of vocabulary mastery can be seen in the table below:

4.3 Students Score before and afterthey were Taught Using Team Game Tournament Technique

No	Subject	Pre-test Score (X)	Post-test Score (Y)	Point differences (D)	D^2
1	AKB	80	90	10	100
2	AO	85	95	10	100
3	AKP	75	85	10	100
4	AS	85	95	10	100
5	CPPR	90	100	10	100
6	CFS	75	90	15	225
7	CPR	80	90	10	100
8	DYR	75	85	10	100
9	DRK	80	85	5	25
10	EM	75	85	10	100
11	EV	75	90	15	225
12	ES	80	90	10	100
13	FA	85	95	10	100
14	IERY	90	95	5	25

15	IAL	80	90	10	100
16	IRM	75	90	15	225
17	JT	80	90	10	100
18	JWK	85	95	10	100
19	LFA	90	100	10	100
20	PEB	75	85	10	100
21	PSO	75	85	10	100
22	RDE	80	90	10	100
23	RAF	85	85	0	0
24	SM	75	90	15	225
25	SRJ	80	90	10	100
26	SA	85	85	0	0
27	VMM	75	90	15	225
28	WDP	80	90	10	100
	N =28	**∑X=2250**	**∑Y=2525**	**∑D =275**	**$\sum D^2$ =3.075**

Table 4.3 was shows that the students' pre-test and post-test score there are 2 students has equal 0 point (RAF and SA), 2 students has increased 5 point (DRK and IERY), 19 students has increased 10 point (AKB,AO,AKP,AS, CPPR,CPR,DYR,EM, ES, FA,IAL,JT,JWK,LFA, PEB,PSO,RDE,SRJ and WDP) and 5 students has increased 15 point (CFS,EF,IRM,SM and VMM).So, it can be concluded that from 28 students there are 20 students got excellent score (90-100)and 8 students got very good score (80-89).

Table 4.3 also shows some important point concerning with the result of computation Mx, My *MD*,T-score and degree of freedom, they are as follow:

a. Finding Mx, My

$$Mx = \frac{\sum x}{N} = \frac{2250}{28} = 80.35$$

$$My = \frac{\sum y}{N} = \frac{2525}{28} = 90.17$$

b. Finding MD

$$MD = \frac{\sum D}{N} = \frac{275}{28} = 9.82$$

c. Finding T-score

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

$$= \frac{9.82}{\sqrt{\frac{3075 - \frac{(272)^2}{28}}{28(27)}}}$$

$$= \frac{9.82}{\sqrt{\frac{3075 - 2700.8}{756}}}$$

$$= \frac{9.82}{\sqrt{\frac{374.2}{756}}}$$

$$= \frac{9.82}{\sqrt{0.49}}$$

$$= \frac{9.82}{0.7}$$

$$= 14.02$$

d. Degree of fredoom

$f = N - 1$

$= 28 - 1$

$= 27$

It can be seen that the mean of the students' pre-test and post-test score has significance difference scores where Mx = 80.35, My = 90.17, and *MD* = 9.82. This means that the mean of pre-test and post-test has increased from 80.35 to be 90.17. So, it can be concluded that team game tournament technique is helpfulfor the students to increase their score in vocabulary mastery.

To know the students' achievement whether it is good or not, the researcher give criteria as suggested by the English teacher of SMAN 1 Campurdarat. This follow:

Table 4.4The Scores' Criteria

Grade	Interval Class	Criteria
A^+	90 – 100	Excellent
A	80 – 89	Very Good
B	70 – 79	Good
C	50 – 69	Fair
D	0 – 49	Poor

The scores' criteria above shows that A+ (90-100) means excellent score, A (80-89) means very good score, B (70-79) means good score, C (50-69) means fair score, and D (0-49) means poor score. So, it help and make easy to the researcher classified the students' score based on the score's criteria.

From the data of the students pre-test and post-test score, the researcher arrange the frequency and the percentage of the students' score that can be seen as in the following table.

Table 4.5 Frequency of Students' Score

No	Score	Fx	Fy
1	90 – 100	3	20
2	80 – 89	15	8
3	70 – 79	10	0
4	50 – 69	0	0
5	0 – 49	0	0
		$X_1 = 28$	$X_2 = 28$

It shows that in pre-test there were three studentswho got excellent score(90-100), fifteen students got very good score (80 – 89), ten students got good score(70 – 79). While, in post-test there were twenty students got

excellent score(90-100), eight students got very good score(80 – 89). So, it can be concluded that before and after they were taught using team game tournament technique has increased score from 3 to be 20 students got excellent score(90-100), has decreased from 15 to be 8 students got very good score(80 – 89), 10 to be 0 students got good score(70 – 79).

The percentage of the students pre-test and post-test' score can be found by using this formula:

$$P = \frac{F}{N} x100\%$$

Where:

P : percentage

F : frequency

N : total of students

The percentage of the students pre-test and post-test' score can be seen in the following table.

Table 4.6 Percentage of the Students' Pre-test

Grade	Criteria Score	Fx	%
A^+	90 – 100	3	10.72%
A	80 – 89	15	53.57%
B	70 – 79	10	35.71%
C	50 – 69	0	0
D	0 – 49	0	0
		N = 28	P=28

From the data percentage of the students' pre-test score, it can be seen that from 100% percentage three student (10.72%) got grade A+ it

means excellent score, fifteen students (53.57%) got very good score and ten students (35.71%) got good score.

Table 4.7. Percentage of the Students' Post-test

Grade	Criteria Score	Fy	%
A^+	90 – 100	20	71.43%
A	80 – 89	8	28.57%
B	70 – 79	0	0
C	50 – 69	0	0
D	0 – 49	0	0
		N= 28	P=28

From the data percentage of the students' post-test score, it can be seen that from 100% percentage twenty students (71.43%) got grade A+ it means excellent score and eight students (28.57%) got very good score.

So, it can be concluded that the students' pre-test and post-test score in the percentage and criteria was different. After using team game tournament technique in teaching and learning table 4.4 and 4.5 show that criteria score of A^+ grade has increased from 10.72% to71.43%, A grade has increased from53.57% to 28.57%, B grade has increased from35.71% to0%, C grade has equal percantage from0% to 0%, and D grade has equal percentage from 0% to 0%. In conclusion, it shows that after using team game tournament as a technique to teach vocabulary mastery had increased than before using team game tournament technique.

B. Data Analysis

Data analysis was done to know the different score of the students' achievement in vocabulary mastery before and after being taught using *Team Game Tournament* technique. Referring to the data in the form of students' score gained from pre-test and post-test as stated above, the next step was analyzing those data by computing it by using T - test.

To find out whether there is different of students' achievements in vocabulary mastery before and after being taught using *Team Game Tournament* technique, the researcher used percentage formula and divided the test result into five criteria; those are excellent, very good, good, fair and poor. It means that if the students can understand the vocabulary mastery well so they get excellent score, when the students still confused about vocabulary mastery, they get very good and good score, fair and poor score is got by the students when they just understand little vocabulary mastery test.

Table 4.8 Correlations

Correlations

		pretest	Posttest
Pretest	Pearson Correlation	1	.701
	Sig. (2-tailed)		.000
	N	28	28
Posttest	Pearson Correlation	.701	1
	Sig. (2-tailed)	.000	
	N	28	28

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the table above, *output correlations* shows the large correlation between both samples, where can be seen numeral both correlation is (0.701) and numeral significance (0.000). For interpretation of decision based on the result of probability achievement, that is:

a) If the probability >0.05 then the null hypothesis accepted

b) If the probability <0.05 then the null hypothesis rejected

The large of numeral significant (0.000) lower than (0.050). It means that the hypothesis clarify there is no significant different score using *Team Game Tournament*toward students vocabulary mastery at the first grade of SMAN Campurdarat. The other word, *Team Game Tournamen* is effective to teaching vocabulary mastery.

Table 4.9 Paired Samples Statistic

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	80.36	28	5.079	.960
	Postest	90.18	28	4.406	.833

Based on the table 4.11 above, shows *Mean* of pre-test score (80.36) and post-test score (90.18), while *N* for cell there are 28, *Standard Deviation* for pre-test (5.079) and post-test (4.406), *Standard Error Mean* for pre-test (0.960) and post-test (0.833).

Table 4.10 Paired Samples Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest & Postest	28	.701	.000

Based on the table 4.10 above, it shows thatthe correlations between two scores of pre-test and post-test = 0.701 and sig= 0.000. For interpretation of decision based on the result of probability achievement, that is:

a) If the sig >0.05, means H_o is accepted

b) If the sig <0.05, means H_o is rejected

It shows that sig= 0.000 is lower than 0.05 means that H_o is rejected and H_a is accepted. So, it concluded that there is significant correlation between pre-test and post-test scores.

Table 4.11 Paired Samples Test

Paired Samples Test

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Postest	-9.821	3.722	.703	-11.265	-8.378	-13.962	27	.000

Based on the table 4.11, *output paired samples test* shows the result of compare analysis with using T test. *Output shows mean* pre-test and post-test (9.821), standard deviation (3.722), mean standard error (0.703). The lower different (11.265), while upper different (8.378). The result test t_{count} =(13.962) with df=27 and significance (0.000).

With the guideline of T_{count} and T_{table} where df= 27 got from $T_{table=}$ 1.70. So, T_{count} (13.962) > T_{table} (1.70) means that H_o is rejected and H_a is accepted. Therefore, it concluded that there is the significant diferences between pre-test and post-test score where mean of post-test (90.18) higher than mean of pre-test (80.36) means that teaching vocabulary usingTeam Game Tournament technique is effective.

C. The Result of Normality and Homogeneity Testing

1. The Result of Normality Testing

Normality testing is conducted to determine whether the gotten data is normal disstribution or not. The researcher used SPSS.16. *One- Sample Kolmogorov-Smirnove test* by the value of significance (α) = 0.050. The result can be seen in the table below:

Table 4.1 Normality Testing

One-Sample Kolmogorov-Smirnov Test

		pretest	postest	Unstandardized Residual
N		28	28	28
Normal Parameters[a]	Mean	80.36	90.18	.000
	Std. Deviation	5.079	4.406	3.624
Most Extreme Differences	Absolute	.211	.266	.204
	Positive	.211	.266	.204
	Negative	-.146	-.198	-.194
Kolmogorov-Smirnov Z		1.119	1.408	1.078
Asymp. Sig. (2-tailed)		.164	.038	.195

a. Test distribution is Normal.
b. Calculated from data

a. H_0 : Data is in normal distribution

b. H_1: Data is not in normal distribution.

The standard significant of education is 0.05 (α = 5%). To determine data is normal distribution or not it can be seen from the result of data normality testing. Based on the output from SPSS above is known that the significance value from pre-test is 1.119 and from the post test is 1.408. Both value from pre-test and post-test are bigger than 0.05. The sig/p value on pre-test is 1.119 and it is lower

0.05 (1.119 > 0.05). It means that H_0 is accepted and H_1 is rejected and the data isin normal distribution. Then, for post-test score the value of sig/p is 1.408 and that is bigger than 0.05 (1.408> 0.05). It also means that H_0 is accepted and H_1 is rejected and the data isin normal distribution. So, it can be interpreted that both of data (pre-test and post-test score) are in normal distribution.

2. The Result of Homogeneity Testing

Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. To know the homogeneity, the researcher used *Test of Homogeneity of Variances* with SPSS.16 by the value of significance (α) = 0.050. The result can be seen below:

Table 4.2 Homogeneity Testing

Test of Homogeneity of Variances

Pretest

Levene Statistic	df1	df2	Sig.
7.224	3	24	.001

a. H_0 : Data is homogeny

b. H_1: Data is not homogeny

The standard significant of education is 0.05 (α = 5%).Based on the output from SPSS above is known that the test called homogeny if the significant score more than 0.05. Based on the table above, the test is not homogenbecause 0.001 < 0.05 and it

means that $H_0$is rejected and H_1 is accepted. So, it can be conclude that students of X-IPS 4 has not homogeny of variances.

D. Hypothesis Testing

From the data analysis it could be identify that:

1. When the value of $T_{count} > T_{table}$ in *df* = 27 with the significant level 0.05. The alternative hypothesis (H_a) is accepted and the null hypothesis (H_o) is rejected. It means that there is significant different score of vocabulary mastery to the first grade students before and after being taught using team game tournament technique.
2. When the value of $T_{count} < T_{table}$ in *df*=27 with the significant level 0.05. The null hypothesis (H_o) is accepted and the alternative hypothesis (H_a) is rejected. It means that there is no significant different score of vocabulary mastery to the first grade students before and after being taught using team game tournament technique.The mean of total vocabulary mastery test score of 28 students before being taught using team game tournament is (61.57). After getting treatment, the means score of students' vocabulary is (83.71). It means that the students' score is improved.

Based on the statistical calculation using t-test, the researcher gives interpretation to t_{count}. First, she considered the *d.f.* with the *d.f.* (28-1=27). She checked to the score of "t" at the significant level of 0,05. In

fact, with the *d.f.* of (27) and the critical value 0,05 significant t_{table} was (1.70).

By comparing the "t" that she got in calculation t_{count} = (13.962) and the value of "t" on the $t_{table} = t_{0.05}$ = (1.70), it is known that t_{count} is bigger than t_{table} = 13.962 >1.70.

Because the t_{count} is bigger than t_{table} the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. It means that there is significant different score of students vocabulary mastery of the first grade students of SMAN Campurdarat before and after being taught by Team Game Tournament technique.

A. Discussion

Based on the research method chapter III in this research, teaching and learning process is divided into three steps. First step is the researcher administrated pre-test by giving vocabulary test. It is used to know the students' earlier vocabulary before they get treatment.

The second is given treatment to the students. The treatment here is teaching vocabulary by using team game tournament technique. The material is about congratulating and complimenting. After the student got treatment, they were more enthusiastic to learn vocabulary. The last step was giving post-test to the students after they got treatment.

From the research finding in chapter IV, the output data paired statistics show mean of pre-test is 80.36 and post-test is 90.18 has increased. If compared the differences both of value is 9.82. Therefore, from both mean

it can concluded that there is significant differences in the students' achievement of vocabulary mastery means that teaching vocabulary through team game tournament is effective.

The standard deviation is to measure how much the variance of the sample. The standard deviation of pre-test is 5.079 < 80.36 and post-test is 4.406 < 90.18 where if the standard deviation is getting higher than the mean it means that the mean is not homogeny and if the standard deviation is getting smaller than the mean it means that the mean is homogeny. So, it can be concluded that standard deviation of pre-test and post-test was homogeny means that the sample of this research almost has the same mean.

The standard error mean is to measure the accuracy with which a sample represents a population. The standard error mean of pre-test is 0.960 < 80.36 and post-test is 0.833 < 90.18 where if the standard error mean is getting higher than the mean it means that the sample is not representative and if the standard error mean is getting smaller than the mean it means that the sample is representative. So, it can be concluded that the sample of this research indicated good sample or representative from population.

Based on the output data of paired sample test it is known that t_{count}= 13.962 and $t_{table=}$ 1.70 if compared the differences of both value is 12.262. So, t_{count} = 13.962is bigger than $t_{table=}$ 1.70 means the alternative hypothesis (Ha) is accepted, while the null hypothesis (Ho) is rejected. It can be conclude that there is significance different score of the vocabulary mastery

of the first grade students of SMAN 1 Campurdarat in academic year 2016/2017 before and after being taught using team game tournament.

Based on the result, it can be concluded that using team game tournament technique is effective in teaching vocabulary mastery at senior high school especially for the first grade students of SMAN 1 Campurdarat.Slavin has found TGT increased basicskills, students' achievement, positive interactions betweenstudents, acceptance of mainstreamed classmates and selfesteem. So, based on statement aboveit can be conclude that TGT is probablysuitable to teach vocabulary.

TGT is kind of cooperative learning where in teaching learning activity enable students to more interest to learn. Besides, it also can foster a responsible, collaboration ,competition and learning engagement. In completing the group task,each member cooperates and assists each other in understanding the material. TGT was very easy to be implemented, because its implementation did not require support facilities should be available as special equipment. In addition TGT also involve all students in its activities to obtain the desired concept.

Based on the explanation above the teacher must not only focus on presenting materials for the students but the most important one must be considered that is how to presents the materials. In this research, the researcher uses team game tournament technique as a way in teaching vocabulary. In this technique students study vocabulary mastery and used team game tournament. It makes them more responsible in their study. The

teacher is not only keep silent and sitting on the chair during teaching and learning, but she have to control the students activity by going around to the students. This technique is done to make the use of Team Game Tournament in teaching and learning process.

After the researcher did the research in teaching vocabulary mastery of first grade students at SMAN Campurdarat, team game tournament technique not only motivate the students to learning vocabulary mastery but also help the students to reach vocabularies easily. So, they can learn to develop their ability in vocabulary mastery. Team game tournament technique surely showed the real effectiveness in teaching vocabulary mastery because it can help the students to improve their vocabulary mastery, especially of the first grade students of SMAN Campurdarat.