CHAPTER III
RESEARCH METHOD

3.1 Research Design

In this research, the researcher used experimental design. Experimental research is a research conducted by manipulating the object of the research and there is a control (Nazir, 2014). According to Mubarok (2015), experimental research is a research method used to find a specific treatment effect against the other in uncontrolled conditions. This research used some groups/classes that given some treatment based on the purpose of the research (Martono, 2010).

There were four kinds of experimental research. They were pre-experimental research, true-experimental research, factorial experimental and quasi experimental (Mubarok, 2015). In this research, the researcher used quasi-experimental research. Quasi-experimental research has control group, but cannot function fully to control external variables that affect the implementation of the treatment (Mubarok, 2015).

There some kinds of design of quasi-experimental research, but in this research the researcher used non-equivalent control group design. In nonequivalent control group design there will be two groups, one as the experimental group which was group that received the treatments and one as the control group which was group that did not receive the treatments. In this design, both the experimental and control group is compared, although the group is selected and placed without randomly (Mubarok, 2015).

Systematically, this experimental research will be seen as this following design,

O_1	X	O_2
O_3		O_4

Figure 3.1 Design of the Experiment

O_1 = Pre-test in experimental group

O_2 = Post-test in experimental group

X = The treatment of this research (Teams Games Tournament)

O_3 = Pre-test in control group

O_4 = Post-test in control group

3.2 Research Variables

Brown in Sarwono (2006) said that variable is something that may vary or differ. According to Davis in Sarwono (2006), variable is a simply symbol or a concept that can assume any one of a set of values. Variable is the object of the research. There were many types of variable, but in this research just focus on two kinds of variables, independent and dependent variable.

1.2.1 Independent Variable

Independent Variable is a stimulus variable or variable could affect the other variable (Sarwono, 2006). It is variable which is selected, manipulated and measured by the researcher. Based on the definition, the independent variable in this research was Teams Games Tournament Technique.

3.2.2 Dependent Variable

Dependent variable is a variable that give reaction/respond if connect with other variable (Sarwono, 2006). Dependent variable is variable values depend on other variable, independent variable (Kuntjojo, 2009). Based on the definition, the dependent variable on this research was students' mastery of simple past tense.

1.3 Population and Sample

Population is a unit of the object or subject that has certain qualities and characteristics which are studied by the researchers then be deduced (Mubarok, 2015). According to Ary *et all.* (1985) in Sukardi (2003), population is all members of well-defined class of people, events or object. Population is refers to the subject of research. It makes population as the important thing in conducting research.

In this research the target of population was the eighth grade students of junior high school. The population in this research was the eighth grade

students of SMPN 1 Batealit Jepara. They were divided into six classes. They were VIII-A, VIII-B, VIII-C, VIII-D, VIII-E and VIII-F.

Sample is part of the quality and characteristics of the population (Mubarok, 2015:32). According Martono (2012:74), sample is part of population that has certain characteristic or circumstances to be studied. Sukardi (2003) state that sample is part of population that selected to be data sources.

In this research, the researcher used simple random sampling. The samples came from the population. The researcher choose two classes as the sample, the first class as an experimental group and other class as control group.

The writer took the class VIII-B and VIII-C as the sample. The students of VIII-B as the control group and the VIII-C as the experimental group. The control group consist of 31 students and the experimental group consist of 31 students, the total of sample were 62 students.

1.4 The Research Instruments

Instrument is a collecting data activities conducted by certain techniques and devices (Kuntjojo, 2009). There were two kinds of instrument, test and non-test. In this research, researcher used the test as the instrument of this research for collecting data. According Kuntjojo (2009:35), the test is the technique of data collection in a way to give some question or task. The test divided into two parts, pre-test and post-test.

The pre-test was given to the experimental and the control group before the treatment. The purpose of the pre-test was to know the students' mastery of simple past tense. Meanwhile, the post-test also given to the experimental and the control group after the experimental class got the treatment. The treatment applied Teams Games Tournament (TGT) technique in learning process in the classroom activity. The purpose of the post-test was to know the significance of students' mastery of simple past tense between the experimental and the control group.

Both of the tests, pre-test and post-test were consist of 25 items question about simple past tense. The score per-item was 4 point for correct answer. The students could get 100 point if they can answer the test correctly. All of the questions assigned according to core competence and basic competence of eighth grade in K-13 (*Kurikulum 2013*). Here was the detail explanation about the blue print of the questions.

Table 3.1

The Blue Print of the Questions

No.	Indicators	Kind of Question	Questions' Number	Answer Key
1.	The students are able to used verbal sentence in regular affirmative form of simple past tense.	Multiple Choices	1,13,21	C, B, C
2.	The students are able to used verbal sentence in regular negative form of simple past tense		8, 25	D, A
3.	The studnets are able to used verbal sentence in regular introgative form of simple past tense.		4, 11	A, A
4.	The students are able to used verbal sentence in irregular affirmative form of simple past tense.		7, 12, 22	C, C, A
5.	The studnets are able to used verbal sentence in irregular negative form of simple past tense.		2, 18, 23	A, D, A
6.	The students are able to used verbal sentence in irregular introgative form of simple past tense.		9, 14	A, A
7.	The studnets are able to used nominal sentence in affirmative form of		5, 15	B, D

	simple past tense.		
8.	The students are able to used nominal sentence in negative form of simple past.	3, 20	D, A
9.	The students are able to used nominal sentence in introgative form of simple past tense.	10, 16	C, B
10.	The students are able to used WH question form of simple past tense.	6, 17	C, A
11.	The studnets are able to arrange the jumble words into good sentence.	19, 24	C, C

1.5 The Technique of Collecting Data

Collecting data was one of important thing in this research. The researcher used tests as the main instrument for collecting data in this research . It used to see the effectiveness of Teams Games Tournament (TGT) technique to improve students' mastery of simple past tense. The test divided into two parts, pre-test and the post-test. The test will give to the experimental and the control group.

1.5.1 Try out of the Test

In order to find out whether the technique of collecting data was proper to be used as a means to collect data, the researcher did the try out test. Try out test was conducted in the same population but in different class with the control and experimental groups. The criteria of good instruments were valid and reliable.

a. Validity

Arikunto (2013:211) states that validity is a measure that indicate the levels of validity or the validity of the instruments. Nunally in Winarno (2013:109) explains that "an instrument otherwise have good validity if the instrument measures what is supposed to measured.

The instruement used in this research was test. Before the researcher conducted the instruments ti the students who were as the sample, the instrument was tested to another students in the same grade but in different class. This step was needed to know the validity of the research instrument is valid or not to be applied in doing research.

The simple past tense try-out test consist of 35 item numbers. From the try-out test was conducted, it was got that item numbers were valid and invalid. The test was valid if the result of r_{value} higher than r-table and the test was invalid if the result of r_{value} less than r-table. The data was counted by using SPSS and MS. Excel. The researcher consulted that the r-table with N=29 students and the significance of level 5% in which the r-table was 0,367.

After the conducted the calculation, there were 25 items number was valid and 10 items number was invalid. the valid items number would be as the question of pre-test and post-test. The detail calculation of validity showed in appendix.

b. **Reliability**

Reliability is the consistency of the result instrument. An isntrument was reliable, although the measurement result repeatedly on the same subject always show the same result (Winarno, 2013). The reliable instrument will produce the reliable data too (Arikunto,2013). The purpose of reliability in this research is to know how reliable the instrument for collecting the data.

An instrument is said good if the item numbers of instruments were valid and reliable. After the validity of item numbers had been counted, the next step was to test the reliability of instrument. The test was reliable if the result of r_{value} was greater than r-table.

Table 3.2

The Reliability Computating Using SPSS Calculation

Case Processing Summary

		N	%
Cases	Valid	29	100,0
	Excluded[a]	0	,0
	Total	29	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,821	,827	35

Based on the SPSS calculation above showed that in Cronbach's Alpha coloumn was 0,827. It can conclude that the try-out instrument was reliable, because the r-value was higher than r-table=0,367.

1.5.2 Pre-Test

Pre-test was a test that given before the treatment. The researcher gave the pre-test toward the experimental and the control group with the same question of test.

1.5.3 Treatment

Treatment was a technique that gives to the students in the experimental group to solve their problem in mastery of simple past tense. In this research, the researcher used Teams Games Tournament

(TGT) technique as a treatment for helping students in improving students' mastery of simple past tense in the learning process. The treatment just gave to the experimental group.

1.5.4 Post-Test

The Post-test was a test that given after the treatment in the experimental group. The researcher gave the post-test to the experimental and the control group with the same question of test. The purpose of the post-test was to measure the students' mastery of simple past tense after the treatment.

1.6 The Technique of Data Analysis

Analyzing data was the last step in research. After the researcher getting the experimental and the control group's score of the pre-test and the post-test, the researcher analyzed it by using statistical calculation of t-test formula in Microsoft Excel and SPSS (Statistic Product and Statistic Solution). T-test is used to know the effectiveness of Teams Games Tournament (TGT) technique and to know the significance score between the experimental and the control group.

1.7 Statistical Hypothesis

Before deciding the result of hypotheses, there were statically hypotheses as follows:

Ho: $\mu1 = \mu2$

Ha: $\mu1 \neq \mu2$

Notes:

Ho: The Null Hypotheses

Ha: The Alternative Hypotheses

$\mu1$:Students' simple past tense achievement, who were taught by Teams Games Tournament (TGT) technique.

$\mu2$:Students; simple past tense achievement, who were taught without Teams Games Tournament (TGT) technique.

The assumption of this hypothesis as follows:

a. If $t_0 \geq t_{table,}$ the Null Hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted. It means there was a significant difference of students' simple past tense achievement between students who were taught by Teams Games Tournament (TGT) technique and students' who were taught without Teams Games Tournament (TGT) technique.

b. If $t_0 \leq t_t$, the Null Hypothesis (H0) is accepted and the Alternative Hypothesis (Ha) is rejected. It means there was no significant difference of students' simple past tense achievement between students' who were taught by Team Games Tournament (TGT) technique and students' who were taught without Teams Games Tournament (TGT) technique.