CHAPTER III

RESEARCH METHOD

In this chapter, the researcher discusses the research methodology in finding the answer of the research question stated in Chapter I and some aspects that used by the researcher to conduct the research and the subject being researched. The aspects are the research method, research design, research variables, time and setting of the research, subject of the research, research instruments, data collection technique, procedure of the research, and data analysis technique.

3.1 Research Method

Based on the research question which had been told before, the researcher would discuss about what the effective approaches that was used for teaching writing using RAFT and TREE strategies in Tenth grader of senior high school. This research is a quantitative research, which relies on quantitative data based on computation and measurement, operational variables and statistics. The data measure are in the form of numbers.

3.2 Research Design

This research designs as quantitative research using true experimental design with pretest and posttest procedure. The method of the research is experiment. It concerns primarily with discovering the effectiveness between or among interrelationship of two variables at the same time (Best, 1977 in Djiwandono, 2008:102)

This research was conducted as an experimental research design. Ary et al (2010:265) state that experimental research is a scientific investigation in which the researcher manipulates one or more independent variables, control any other relevant variables, and observes the effect of manipulations on the dependent variables. Furthermore, they explain that the goal of experimental research is to determine whether a causal relationship exists between two or more variables. Because the experiment involves control and careful observation and measurement,

this research method provides the most convincing evidence of the effect that one variable has on another.

In this research, the researcher aims to find out the effectiveness of RAFT and TREE strategies in teaching writing descriptive text at tenth grader of senior high school by comparing two groups who are taught by using RAFT and TREE strategies and who are not.

Two groups here are experimental and control group. In Ary's view (2010:270), the experimental group receives a specific treatment, the control group receives no treatment. Both these groups are given a pretest and posttest. The purpose of pretest here is to measure their basic ability in writing descriptive text and for posttest itself is to find out the improvement both of two groups in writing descriptive text after getting treatments. Before conducting a pretest and posttest, the researcher administrated or examined a tryout in another class in order to know whether the test is reliable or not, then calculated the validity and the reliability of the test.

Whereas, the treatment was applied in experimental group only, meanwhile, the control group was taught as usual using pictures. The experimental group was taught through RAFT and TREE strategies in teaching writing, and the control was taught through pictures as usual that the teacher used in teaching writing. Both of them were taught the same materials of descriptive text. Then, the results of the pretest and posttest was compared to find the significant differences between the experimental group and the control group. This table below is the illustration of experimental research design. (Sugiyono, 2012:223)

Table 3.1. Design of Experimental Research

Variable	**Pretest**	**Treatment**	**Posttest**
E	O_1	X	O_2
C	O_3		O_4

Notes:

E: Experimental group

C: Control Group

X: Experimental treatment by using RAFT and TREE strategies

O_1: Pretest before experimental treatment

O_2: Posttest after experimental treatment

O_3: Pretest for control class

O_4: Posttest for control class

3.3 Research Variables

In this research, there are two variables. They are independent variable and dependent variable. According to Kidder (1981) in Sugiyono (2012:61) states that variable is a qualities where the researcher studies / learns and takes the result of it. Independent variable here is RAFT and TREE strategies as a method in classroom. According to Creswell (2012:116), "an independent variable is an attribute or characteristic that influences or affects an outcome or dependent variable." It means that independent variable also called factor, treatment, determinant, or antecedent variable which is manipulated or controlled by the researcher. Researcher study independent variable to see what effect or influence the outcome of the research. While, dependent variable here is students' writing ability in descriptive text. Creswell (2012:115) also says, "A dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable." It means that dependent variable is an observed and measured variable to establish the significant effect independent variable.

3.4. Time and Setting of the Research

The researcher would like to see the effectiveness of RAFT and TREE strategies in teaching writing descriptive text. The setting of this research was SMA Wachid Hasyim 1 which is located at Jl. Sidotopo Wetan Baru No.37 Surabaya.

The researcher had finished collecting the data since February 18th, 2016 to May 17th, 2016.

3.5. Subjects of the Research

3.5.1 Population

Ary et al (2010:149) state that target population is the large group to which the researcher wishes to generalize the results of the study. Additionally, population is those people about whom you wish to learn something (Ary, 2010:54). In this research, the researcher took the tenth graders students of SMA Wachid Hasyim 1 which located at Jl. Sidotopo Wetan Baru No.37 Surabaya. The population was all of tenth grades of SMA Wachid Hasyim Surabaya, which was divided into six classes, such as, X-1, X-2, X-3, X-4, X-5, and X-6. Ary et al (2010:148-149) argue that a population is defined as all members of any well-defined class of people, events, or object.

3.5.2 Sample

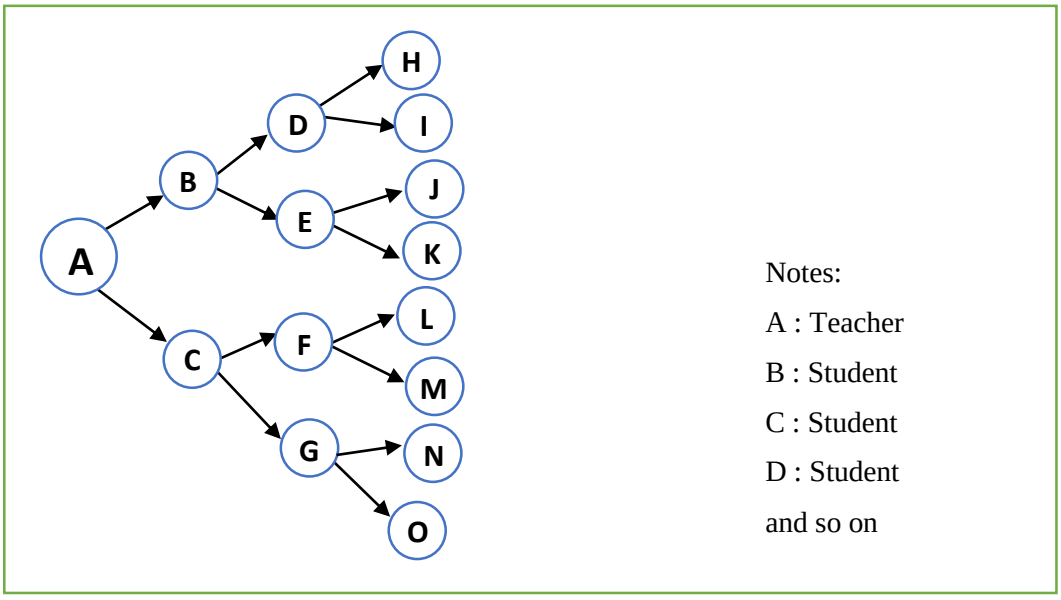
Ary et.al (2010) state that sample is a portion of population that is defined to be a small group to be observed. They further say that there are two kinds of sampling. In Sugiyono's view (2012:119), there are two kinds of sampling techniques. They are Probability sampling and Non-probability sampling. Furthermore he explains that in probability sampling, there are four methods, as follows: simple random sampling, proportionate stratified random sampling, disproportionate stratified random, and area or cluster random sampling. Then, in non-probability sampling, there are six methods that can be used, such as, accidental sampling, systematic sampling, purposive sampling, quota sampling, jenuh sampling, and snowball sampling.

In this research, the researcher used non-probability sampling. It was snowball sampling technique. Snowball sampling is one of sampling techniques to take the sample from a population. This technique is useful for finding, identifying, selecting, and taking samples. An alternative to convenience sampling is snowball sampling.

This research was conducted by determining two sample classes from a population that had been explained. Creswell (2012:146) states that in snowball sampling, the researcher asks participants to identify others to become members of the sample. He further explains that the researcher might send surveys to a school superintendent and ask that the superintendent forward copies to the principals of schools in that school district. These principals then become members of the sample.

In this research, on 18th February 2016 the researcher came to school and met the headmaster of SMA Wachid Hasyim 1 Surabaya. So, the researcher met one of the English teacher and asked the teacher to choose 2 students who would be the sample. Then, the two students itself would invite their friends to join them as other samples. This form of sampling has the advantage of recruiting large numbers of participants for the research.

Table 3.2 Illustration of Sampling Technique (Snowball Sampling)



The illustration of sampling technique above explained that the first time the researcher met the teacher and asked the teacher to call two students. Then, the two students had to invite their friends, the other students, and so on. After all sampling collected, the teacher chose one of which was a control group and

experimental group. Control group was a class which was not given a treatment, otherwise experimental group was a class which was given a treatment.

3.6 Research Instruments

3.6.1 Test

Ary et al (2010:201) state that a test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. They further explain that there are five kinds of achievement tests. Those are standardized tests, researcher-made tests, norm-referenced and criterion-referenced tests, test performance range, and performance assessment.

In this research, the researcher used a test as the instrument which was made by the researcher itself. This score based on a representative sample of the individual's behavior, is an indicator of the extent to which the subject has the characteristic being measured. Furthermore, it can match with content with the specific objectives in this research.

In this research, the researcher gave a test which was pretest and posttest. Pretest was conducted before posttest in order to measure the ability of the two groups before giving the treatment, next is posttest that was administered after giving the treatment in order to find out the significance different of student's ability of tenth grades of SMA Wachid Hasyim 1 Surabaya after giving the treatments. Both control and experimental group were given pretest and posttest. In this research, the test was writing a simple descriptive text about animal**.** The students were given 90 minutes to write a simple descriptive text about animal**.** The instruction of the test that was given in a pretest should be same with the test that was given in a posttest which was to write a simple descriptive text about a thing.

3.6.1.1 Pretest

Pretest is a test that is given to students before they get a treatment. The purpose of pretest is to measure how far the students' understanding in writing descriptive text. According to Creswell (2002:297), a pretest is used to measure the participants' ability in experiment before they receive a treatment.

In this research, the researcher gave the pretest to both control and experimental group in writing descriptive text about a thing that they know. The pretest was given to both control and experimental class with the same material.

3.6.1.2 Posttest

Posttest is a test that is given to students after they get the treatment. In Creswell's view (2002:297), a posttest is used to measure the participants' ability in experiment after they receive a treatment.

In this research, the researcher also gave the posttest to both control and experimental group in writing descriptive text about animal what they like. The posttest also was given to both control and experimental class with the same topic.

3.6.2 Tryout

The purpose of tryout is to find out what kind of test item which is suitable with the students. It is used to get the reliability and the validity of the text. It was given to the class which was not belongs to control and experimental group

In this research, tryout was conducted before pretest in control and experimental group. The researcher had given a tryout on April 19, 2016. The students were asked to write a simple paragraph about a descriptive text. It showed that the test as an instrument which was used by the researcher was reliable and valid that will be presented in the following explanation.

3.6.2.1 Validity of Tryout Test Instrument

Before giving the test to the students, researcher needs to know the validity of the test. A test may be valid for use with one population or setting. Validity is the most important consideration in developing and evaluating measuring instruments. According to Ary et al (2010:224-226), validity is defined as the extent to which scores on a test enable one to make meaningful and appropriate interpretations. They further explain that there

are three types of validity. Those are validity based on content, criterion-related validity, and construct-related evidence of validity.

In this research, the researcher chose validity based on content to know that the test which would be given to the students is valid. Content validity is based on judgment that must be separately for each situation. The test can be called has the validity based on content if the test is appropriate with the material or content that has been given. The test has to be arranged based on the main and basic competency of Indonesian curriculum that is used in SMA Wachid Hasyim 1 Surabaya which is KTSP. The material of the test should be appropriate with English material that is taught in this school. This validity identify the sheet quality of the questions and lesson plan.

Table 3.3 Content Validity of the Test

Test Item	**Main Competency**	**Basic Competency**	**Indicators**	**Validity**
• Write a descriptive text about an animal that you like • Write a descriptive text about an animal that you like	Mengungkapkan makna dalam teks tulis fungsional pendek dan esei sederhana berbentuk narrative, descriptive dan news item dalam konteks kehidupan sehari-hari.	Mengungkapkan makna dan langkah retorika dalam esei sederhana secara akurat, lancar dan berterima dalam konteks kehidupan sehari-hari dalam teks berbentuk narrative, descriptive, dan news item.	• Menggunakan kalimat *simple present* dalam membuat *descriptive text* • Menghasilkan teks berbentuk *descriptive*	Valid

The result of content validity showed that the writing test was valid when matched with the main competence and basic competence of English subject about descriptive text for tenth graders of senior high school.

The researcher also asked the lecturers who expert in writing test to measure how valid about the test. They were Sofi Yunianti, SS, M.Pd. as the English lecturer of Muhammadiyah University and Christina H.S, S.Pd.

as the English teacher of SMA Wachid Hasyim 1 Surabaya *(see appendix 6)*.

Table 3.4 Validity of the Test

No	Name	Validity of the Test		Date
		Yes	No	
1	Sofi Yunianti, SS, M.Pd.	√		April 10, 2016
2	Christina H.S, S.Pd.	√		April 15, 2016

3.6.2.2 Reliability of Tryout Test Instrument

After examining the validity, the researcher would examine the reliability of the test, because it is one of the important element that should be measured to find out the quality of the test. Ary et al (2010:236) say that reliability refers to the degree of consistency with which it measure and whatever it is measuring. It is concerned with precision and accuracy. A test is reliable if it is consistent within itself and across time. A test must be reliable as measuring instruments.

According to Djiwandono (2008:171), there are some types of reliability that are used to measure and find out the quality of the test. In this research, the researcher chose one of those types of reliability that was inter-rater reliability. In Creswell's view (2012:161), inter-rater reliability is a procedure used when making observations of behavior. It involves observations made by two or more individuals of an individual's or several individuals' behavior. He further explains that the observers record their scores of the behavior and then compare scores to see if their scores are similar or different. It means that in this research, the test was done at once and it was scored by two people. The two people here were called first rater and second rater. The researcher determined the two raters were the English teacher of SMA Wachid Hasyim and the researcher itself. The English

teacher became the first rater and the researcher itself became the second rater. Then, the students' composition which had been scored by the raters, it was analyzed by using *Correlation Pearson Product Moment*.

Then, the data would be calculated by using SPSS 17. The result of reliability formula shows reliability coefficient of correlation with the criteria (Sugiyono, 2012:257):

Table 3.5 Scale of Reliability

Interval Coefficient	**Level of Correlation**
0.00 – 0.119	Very Low (not reliable)
0.20 – 0.399	Low (less reliable)
0.40 – 0.599	Moderate (reliable enough)
0.60 – 0.799	Strong (reliable)
0.80 – 1.000	Very Strong (very reliable)

The steps to analyze the data on SPSS 17 are inserting all data of rater 1 and rater 2 to SPSS table. Then, click *Analyze* from the menu at the top of the screen → select *Correlate* → *Bivariate Correlation* → insert all the data to the *Variables Column* → click *OK*.

The table below is the result of reliability test.

Table 3.6 Reliability of the test

Correlations

		Rater_1	Rater_2
Rater_1	Pearson Correlation	1	.889**
	Sig. (2-tailed)		.000
	N	20	20
Rater_2	Pearson Correlation	.889**	1
	Sig. (2-tailed)	.000	
	N	20	20

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

Based on the table above, the inter-rater reliability showed that the instrument of tryout is reliable. It can be seen from the result of *Pearson Product Moment* analysis that ($r = 0.889$, $p < 0.01$). The p-value for both rater 1 and rater 2 are 0.889**. It proved that the level of correlation of the data is very strong. So, the result of reliability test is reliable. It also means that the quality of tryout test is reliable to be used as an instrument in a pretest and posttest.

3.6.3 Questionnaire

According to Sugiyono (2012:199), Questionnaire is one of collecting data technique by giving some questions or written statements to the respondent or a group of people to get information. The researcher used a questionnaire in the last meeting after treatment class in experimental group. The questionnaire was used to know how the students' response after having class using RAFT and TREE strategies in writing descriptive text at Tenth grades of senior high school students at SMA Wachid Hasyim 1 Surabaya. The questionnaire of this research was constructed in form of checklist and consists of ten questions. The questions themselves were based on the interest, like and dislike about the teaching-learning process using RAFT and TREE strategies in teaching writing descriptive text.

3.6.4 Rubric Assessment

Brown (2003:6) states that assessment is an exercise or procedures specifically designed to tap into a storehouse of skills and knowledge. In this research, the researcher identified the students' writing by using Osima's & Hogue's idea (2006) about scoring rubric of paragraphs. In this case, the researcher assessed the students' composition/essay in five components. They are Format, Mechanics, Content, Organization, and Grammar & Sentence Structure. All of those components have different criterion and point rage.

Table 3.7 Scoring Rubric of Writing (Osima & Hogue, 2006:315)

	Maximum Score	**Actual Score**
Format –5 points		
There is a title.	1	__
The title is centered.	1	__
The first line is indented.	1	__
There are margins on both sides.	1	__
The paragraph is double-spaced.	1	__
Total	5	
Mechanics –5 points		
There is a period, a question mark, or an exclamation mark after every sentence.	1	__
Capital letters are used correctly.	2	__
The spelling is correct.	2	__
Total	5	
Content –20 points		
The paragraph fits the assessment.	5	__
The paragraph is interesting to read.	5	__
The paragraph shows thought and care.	10	__
Total	20	
Organization –35 points		
The paragraph begins with a topic sentence that has both a topic and a controlling idea.	10	__

The paragraph contains several specific and factual supporting sentences that explain or prove the topic sentence, including at least one example. The paragraph ends with an appropriate concluding sentence.	20 5	__ __
Total	35	
Grammar and Sentence Structure –35 points Estimate a grammar and sentence structure score.	35	__
Grand Total	**100**	

3.7 Data Collection Technique

The type of this research was designed as quantitative research which relied on quantitative data based on computation and measurement, operational variables and statistics. The design of this research is a true experimental design with pretest and posttest procedure. The data of this research was collected through tests (tryout, pretest, and posttest) to find out the students' significance different between control and experimental group in writing descriptive text by using RAFT and TREE strategies.

The first time that was done by the researcher is giving tryout test. The tryout was given in the other class except control and experimental group. Then, the researcher conducted a pretest to both of control and experimental group. After that, the researcher gave a treatment to the experimental group by using RAFT and TREE strategies in writing descriptive text, meanwhile the researcher taught using pictures that usually used by the teacher to control group. However, the control group was taught the same material of writing descriptive text, but, without RAFT and TREE strategies in teaching and learning activity. The last step was giving a posttest. The posttest was conducted after having material of descriptive text for control group and experimental group (after treatment). The criteria of posttest was similar to the pretest. It was done for both of control and experimental group. The purpose of posttest here was to find out whether there is a significant difference between control and experimental group.

3.8 Procedure of the Research

Generally, the procedure of the research in true-experimental design is same as the other research designs. There are some procedures of the research that were applied in this research.

3.8.1 The first time, the researcher came to SMA Wachid Hasyim 1 Surabaya to meet the headmaster to ask her permission for doing the research in this school.

3.8.2 The researcher met the english teacher of SMA Wachid Hasyim 1 Surabaya.

3.8.3 The researcher decided which class would be an experimental group and a control group.

3.8.4 The researcher gave the tryout test to another class except experimental and control group in the same level.

3.8.5 The researcher came to both control and experimental group and gave the pretest with the same material of descriptive text.

3.8.6 The researcher gave a treatment of writing descriptive text using RAFT and TREE strategies to the experimental group.

3.8.7 The researcher taught writing descriptive text using pictures in control group.

3.8.8 The researcher also did not forget to collect the data of them.

3.8.9 The researcher came to both control and experimental group and gave the posttest with the same material of descriptive text.

3.8.10 The last, the students of experimental group were expected to fill out the questionnaire in order to know how the students' response after having class using RAFT and TREE strategies in writing descriptive text.

Table 3.8 Research Schedule

	Schedule	**Time**
1	Meeting the headmaster and asking her permission	February 18, 2016
2	Meeting the English teacher	February 26, 2016
3	Tryout test	April 19, 2016

4	Pretest for control group	April 23, 2016
5	Pretest for experimental group	April 27, 2016
6	Teaching writing descriptive text using RAFT and TREE strategies in experimental group	April 30, 2016
7	Teaching writing descriptive text using pictures in control group	May 3, 2016
8	Posttest for control group	May 4, 2016
9	Posttest for experimental group	May 10, 2016
10	Giving questionnaire	May 17, 2016

3.9 Data Analysis Technique

After the researcher collected all the data completely, the researcher would analyze all the data by using Microsoft Excel 2013 and SPSS 17. Sugiyono (2012:207) states that analyzing data will be done if all of the data have been collected. The activities to analyze the data are grouping the data based on the variable and respondent, tabulating the data based on the variable, serving the data, doing the calculation of data to answer the research question and testing the hypothesis.

Sugiyono (2012:210) states that there are two kinds of inferential statistics. They are parameter and non-parameter. He further explains that the characteristics of parameter statistics are the sample of the population must be more than 20 samples. The first way to analyze parameter statistics is all the data must be normal and homogeny. The sample of this research consist of 30 students for both experimental and control group. It means that the sample here are more than 20 samples. That's why the researcher uses a parameter statistics to analyze the inferential statistics.

The researcher would use normality test, homogeneity test, and independent-sample t-test on SPSS Statistics 17.0 to compare the mean score of both control and experimental group in pretest and posttest. It useful to know whether there is a significant difference or not between the tenth grades students

who were taught by using RAFT and TREE strategies and who were not. According to Pallant (2010:239), "independent-sample t-test is used when you want to compare the mean scores of two different groups of people or condition." That is why, the researcher was going to use independent-sample t-test to compare the data of two groups which are control and experimental group after they get pretest and posttest. The researcher also would use Paired Sample T-test to know the significant progress between before and after the treatment in experimental group. In Pallant's view (2010:239), Paired Sample T-test is used to compare the mean scores for the same group of people on two different occasion.

3.9.1 Normality Test

Normality test is used to know the normality of the data that is going to be analyzed whether both classes have normal distribution or not. According to Susetyo (2010:271), the normality test is used to know the form of sample distribution that is used in a research. He further says that normality test has to be known in parametric statistics. In this research, the researcher uses SPSS 17.0 with formula of One-Sample Kolmogorov-Smirnov Test to measure the normality of the test.

To check the data is normal or not, the criteria of testing normality is if $p_{(value)} > \alpha$ (sig 0.05) so that H_0 is accepted. But if $p_{(value)} < \alpha$ so that H_0 is rejected (Susetyo, 2010:145):

H_0 = sample of data is normal distribution

H_1 = sample of data is not normal distribution

The criteria of the test based on p-value as below:

H_0 is accepted, if $P_{(value)} > \alpha$, so the data is normal distribution

H_1 is accepted, if $P_{(value)} < \alpha$, so the data is not normal distribution

α = sig 0.05

3.9.2 Homogeneity Test

After the researcher conducted the tryout and pretest, the researcher had to determine which one would be an experimental group and which one would be a control group. To know whether the students' ability of both control and experimental group are homogeny/equal or not, the researcher used Levene test of homogeneity of variances to count the pretest score of both classes.

The hypothesis are:

$H_0 : \alpha_1 = \alpha_2$, there is no difference between experimental and control class

$H_1 : \alpha_1 \neq \alpha_2$, there is difference between experimental and control class

H_0 is accepted if *p value* is higher than α (0.05). It means that the capability of both experimental and control group are homogeneous. Otherwise, if the *p value* is lower than α (0.05), it means that capability of both experimental and control group are not homogeneous.

3.9.3 T-Test Calculation

The researcher used Independent-Sample T-test to compare the data of two groups which are control and experimental group after they get pretest and posttest. The researcher also used Paired-Sample T-test to analyze the significant difference of students' skill in writing descriptive text before and after having class using RAFT and TREE strategies in experimental group. All the data in this research would be analyzed through Microsoft Excel 2013 and SPSS 17.0.