CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the reseacher describes a description of the methodology used when conducting research. Which consists of research design, research place, the subject of the study, method investigation, type of data, instrument of data collection, method of collection data and data analysis methods.

A. Research Design

> Research is a process in which you participate in a small set of logical steps (Creswell 2012, p.2). Design in research is a framework of research methods and techniques chosen by a researcher. The design chosen allows researchers to hone research methods that are suitable for the subject matter and organize the research being carried out. Design process that is structured and organized as well as possible to facilitate a plan that was be carried out to achieve success in getting a new object.

Based on Stringer (2014, p.33) Action research is a collaborative approach to inquiry or investigation that prepare people with the means to take systematic proceeding to completed specific problems. In this study the reseacher applied Classroom Action Research (CAR), the reseacher chose this design because it relates to learning activities in the classroom so that it can confirm how or see improvements and describe student participation when use of tree diagrams in the classroom. Therefore, the reseacher chose the Classroom Action Research (CAR)

design because it was in accordance with the needs of this research. Classroom action research is research that is directly applied in the classroom.

Classroom action research is designed to improve all participants involved in the teaching and learning process. It means that the purpose of classroom action research is to improve the teaching and learning process in the classroom. Classroom Action Research typically implicate the use of qualitative, interpretive modes of question and data collection by teachers (often with help from academic partners) with a view to teachers making evaluation about how to improve their own practices (Kemmis and Nixon 2014, p.11). By using Classroom Action Research, the reseacher not only improves students' writing ability, but also improves students' vocabulary and improve students'writing skill to write something with easier.

The reseacher uses this method because the reseacher saw the problems at SMAN 1 Kelam Permai especially in class X A students, vocabulary is very low, they lack vocabulary and they feel lazy and inactive in class. This is in accordance with research by experts that the purpose of classroom action research (CAR) is to improve the quality of educational practice for the better.

This research method used classroom action research from the theoretical foundation by expert and applied by researcher in researching a learning technique and reflecting on every class action during the research process. There are some steps to conduct Classroom Action Research as follows:

1. Plan (planning)

Plan is the first step in regulatory research. Researchers identify problems and develop action plans. A plan is an adjustment of an action under consideration in the future. Adapted as a teacher's guide for use in the classroom. Planning influence thinking convert and assess to follow the event that have been happened and pursue make sure ways to conquer problems (Burns,2010, p.8).

In this step the researcher prepared the planning for the activity and process of deliver material based on curriculum and objectivity of learning, prepare lesson plan, field note and observation checklist.

A plan or action that is important and can be used to correct what has happened. The CAR plan must be flexible enough to adapt to unforeseen effects and unseen obstacles. The CAR plan must be prepared based on reflective initial observations.

2. Acting

The action in question is an action that is carried out consciously and in control, which is a variation of careful and thoughtful practice. Practices that are recognized as ideas in an action and actions that are used as a basis for the development of actions to be taken next, namely actions that are accompanied by an intention to improve the situation.

In this step researcher designed and take an action during classroom material and give some educational material which generate

students intellectual. In this stages, the researcher taught in the classroom with assisting by the collaborator is the teacher.

3. Observation

Observation is use to document the effects of related actions. Observations need to be planned and also based on open views and thoughts and are responsive. The object of observation is the entire process of related actions, the effects of which can be (intentional or unintentional), the circumstances and constraints that are had in the planned action and its effects, and other problems that arise in the relevant context.

In this process the researcher did the activity of research with look at the characteristic of students learning ability then deliver materials and give some feedback in classroom activity. The collabolator position is assisted the teacher to fill the data such as observation checklist and field note based on the classroom condition.

4. Reflection

In this step the researcher took some researchs data during learning activity then calculate the percentage of learning implementation and make conclusion about the result of research. Re-plan in the cycle 2 is the continue action if cycle 1 cannot give impact of percentage successful of learning activity and re-plan to accommodate researcher to finds some data of research to addition of research success. Researcher and observer

reflected about the data of research and find out the improvement of teaching learning process.

Action research usually involves four broad phases in a research cycle. The first cycle can become an ongoing spiral of repeated cycles until the action researcher achieves satisfactory results and feels it is time to stop (Burns, 2010, p. 7). The following is the picture of popular Kemmis and McTaggarts model of action research. The researcher uses a classroom action research designed by kemmis and Mc Taggart model that consist of four steps namely, planning, action, observation, and reflecting. Improvement the problem in this research is about by the series of cycle. Cyclical AR model based on Kemmis and McTaggart (1988) in Burns (2010.p. 9). The figure is below:

Adapted to Kemmis and McTaggart (1988) in Burns (2010: 9)

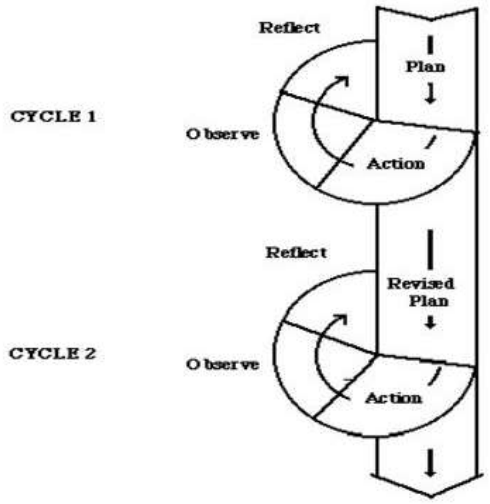

Figure 3.1 Cyclical AR model

Reflection is remembering and contemplating an action that is done the same as recorded in the observation. Reflection seeks to understand problems,

obstacles, and real processes in strategic actions. Reflection is usually aided by the use of discussion between the researcher and the collaborator. Through discussion, reflection provides a basis for improving the plan. Reflection (contemplation) is an activity of analysis, interpretation and explanation (explanation) of all information collected from observations of the implementation of actions.

Cycle II plans are made based on the results of reflections obtained from observations that have been made so as to get better results. The revised plan consists of two scopes namely; they are mastery of vocabulary and classroom situations when tree diagrams are applied to students in class. In cycle II the researcher made lesson plans which consisted of material preparation, learning media, student exercises, and everything related to action. The second cycle was carried out in one meeting. The second cycle is carried out based on reflection in cycle one, so that it can make the teaching and learning process through tree diagrams better than cycle one.

In using tree diagrams as a technique to be applied in the classroom, teachers must pay attention to tree diagram procedures, so that teaching and learning activities in class can run well.

B. The Subject of The Study

The subjects of this study were 30 students of class X A SMA Negeri 1 Kelam Permai, consisting of 15 male and 15 female. Researcher conducted

research at SMA Negeri 1 Kelam Permai, especially students of class X A because at SMA Negeri 1 Kelam Permai the study found several problems experienced in English lessons during PPL, especially in writing skills, therefore students of class X A in SMA Negeri 1 Kelam Permai experienced a lack of vocabulary understanding, and also had difficulty developing ideas when asked to write.

Therefore, the researcher used the tree diagram technique to improve students' writing skills. In this study the researcher took all students of class X A SMA Negeri 1 Kelam Permai as the population. The population in this study were 30 students of class X A SMAN 1 Kelam Permai. On the basis of the reason why this research population was taken from the tenth grade students of SMA Negeri 1 Kelam Permai, because the researcher wanted to research about their writing improvement when using tree diagrams. Furthermore, the sample, the sampling technique is purposive sampling because students are considered as a representative population and the teaching and learning process not be disturbed. There are 30 students: 15 female and 15 male.

C. Data Collection Technique and Instrumentation

1. Data Collection Techniques

In this research the researcher uses Observation, Interview, and Test to collect the data. To collect necessary data, there are three methods that an action researcher could use: observation, interview, and measurement.

Whereas, to collect the data as research material, observation, interviews, and measurement are needed. These three methods are very helpful for researcher to collect data as a result of the research conducted. The technique used in this study are observation, interviews and measurement.

The qualitative data technique used was observation of activities in the classroom and interviews that were presented to the teacher. The distinctive of qualitative research is given in clear. Data collection procedures in qualitative research has share into four foundation types qualitative observation, qualitative interviews, and qualitative documents. While what is used in quantitative is in the form of a measurement. The technique used by the researcher in this research is as follows:

a. Observation

The process of obtaining data that is obtained from the first hand, by observing people and observing locations for research is called observation. Observation is an accurate and specific method for collecting data and seeking information about various activities that are used as objects of research studies.

Observation is observing carefully the way something happens or the way someone does something, especially to learn more about what is being observed. Researcher need to make observations because researcher want to see something that happens in the classroom. The

researcher wanted to see how the students responded when the tree diagram technique was applied.

In participatory observation, the researcher observes what people do, listens to what they say, and participates in their activities. This observation is used to determine the atmosphere of the learning process and student behavior when the action is taken. In this observation, the researcher was assisted by the teacher when teaching English in the classroom.

In the process of observation, the researcher observe the behavior of students in teaching and learning activities. The researcher also pays attention to students to find out whether there is an increase in student learning activities through the tree diagram technique. The researcher observed the students during the teaching and learning process before using the tree diagram technique and after using the tree diagram technique, so that the researcher could make a comparison between using a tree diagram and without using a tree diagram.

b. Interview

Interview is a process in which two people face each other and talk directly or verbally in which one person asks about something they want to know, while the other person is a respondent whose function is to answer the questions posed by the questioner. Interviews are a way that

can be done to get information from certain people to get the desired information. (Creswell, 2009, p.218).

Creswell (2009, p.218) state that interviews are classified into four types, namely (1) one-on-one interviews, (2) focus group interviews, (3) telephone interviews, (4) electronic email interviews. In this study, the researcher used one-on-one interviews to obtain information from students and teachers. One-on-one interviews are interviews conducted by researcher with participants one by one face-to-face to obtain the required data. Researcher conducted interviews with teachers twice. Researcher was conducted interviews with teachers first before conducting research into the classroom.

The interviews is needed by the researcher to conduct the research with teachers because researcher want to know the problems faced by teachers and students in English subjects in this class, so that researcher know what to do. The researcher also conducted interviews with the teacher after the tree diagram technique was applied as a learning technique in the classroom, to see the responses and find out the teacher's opinion in applying the tree diagram technique in the classroom. The researcher also conducted interviews with several students, to see the responses and find out students' opinions about the use of the tree diagram technique in the classroom.

In this interview process, the researcher only interviewed some students. The researcher selects students based on student grades. The researcher interviewed two students who got high scores, two students who got moderate scores and two students who got low scores. The researcher also interviewed teachers who taught these subjects. Two types of interviews are often used by researcher, namely:

a. Open interview, open-ended questions. When the researcher asks the subject to answer with their own opinion. The answer can be long or short, depending on the personality of the subject.
b. Closed interview, is an interview with closed answers. When the subject chooses an answer to a question that is provided in multiple choice or contains a combination of two types of questions or statements.
c. Measurement

    Measurement is the technique to qualify about the data which collect by the researcher to get some result. Generally, measurement shaped scale or rate because measurement related with the quantitative or number. Measurement systems exist to provide and information about the physical value of some of the variables being measured (Morris, 2001, p.8).

Measurement in education research aimed to see about comparison of implementation of learning process by using the technique to give quality, access, and rate for classroom activity with the learning

process. So, measurement uses to measure and see the ability of students and the achievements obtain in learning activities by holding tests.

1. Scoring rubric and assessment indicators.

In analyzing the students' writing ability test data, the researcher uses an analytical assessment rubric adapted from Weigle cited in Alawi (2011, Pp. 116) stating that there are five components presented in the analytical assessment rubric for writing, namely, content, organization, vocabulary, language use, and mechanics. The following table is the analytical assessment rubric used by the researcher to analyze writing chooses the average score of students' writing in one cycle, the following formula is used:

Table 3.1:

Analytical scoring rubric adapted from Weigle

Aspect	Criteria	Score	Categories
Content	- Through development of topic	4	Very Good
	- Relevant to topic but lacks detail	3	Good
	- Inadequate development of topic	2	Fair
	- Does not show knowledge of topic	1	Poor
Organization	- Write paragraph structures correctly	4	Very Good
	- Loosely organized but ideas stand out	3	Good

	- Incoherent ideas and lades logical sequencing	2	Fair
	- Does not write paragraph structure	1	Poor
Vocabulary	- Employ accurate and effective choice of words / diction	4	Very Good
	- Employ accurate diction, but not effective	3	Good
	- Employ lacks accuracy of diction, but meaning not obscured	2	Fair
	- Errors in applying diction or word form and meaning obscured	1	Poor
Language Use	- Use correct grammar (tenses used, pronouns, subject + verb agreement, etc)	4	Very Good
	- Several errors of tense pronouns, subject-verb agreement, etc but meaning not obscured	3	Good
	- Major errors of tense, pronouns, subject-verb agreement, etc and meaning obscured	2	Fair
	- No mastery of sentence construction and dominated by errors	1	Poor
Mechanics	- Very little errors of mechanics	4	Very Good
	- Few errors of mechanics, but meaning not obscured	3	Good
	- Many errors of mechanic meaning obscured	2	Fair
	- Dominated by errors of mechanics	1	Poor

Based on the rubric table above, the maximum scores of this rubric is 20. The formula below in order to calculate the score:

$$\textbf{Score} = \frac{\textit{Total Score}}{\textit{Maximum Score}} \; \boldsymbol{X\ 100}$$

To get the average score of students' writing in one cycle, the following formula is used:

$$Mx = \frac{\Sigma x}{n}$$

Mx : Mean

Σx : total score all students

N : Number of students

Next step, the writer identifies the improvement score on students' in writing descriptive text from score in cycle 1 and cycle 2 the writer uses the formula:

$$P = \frac{y1 - y}{y} x100\ \%$$

P : Percentage of Students' Improvement
y : cycle 1
y1 : cycle 2

2. Level of students writing ability

After the test, the researcher determined the level of students writing ability at this school. There are five levels of the students score. According to Haris cited in Atmono at.al (2015, p.4) in Gadi writing ability encompassing poor, fair, average, good, and excellent. The writing ability level is determined based on the score below.

Criteria	Score Range
Excellent	80-100
Good	71-80
Average	51-70
Fair	41-50
Poor	0-41

Adapted from Haris (2015, p.4)

3. Instrumentation

In this research, to collect the data the researcher uses some tools of data collection, namely: Observation checklist, Interview guideline and Test sheet.

a. Observation checklist

The observation checklist is a detailed guide that contains the steps that must be taken to conduct observations starting from formulating the problem, the framework of the theory to describe the behavior to be observed, recording procedures and techniques, analysis criteria to interpretation. The observation checklist is used to measure student learning independence during the learning process. The observation checklist is also used as material for the reflection of the next cycle. Observation checklist is a worksheet that has a function to observe and measure the level of success or achievement of learning objectives in teaching and learning activities in the classroom.

This observation involves the use of a coding system or checklist prepared before the lesson begins. In this observation the Observer records the things he observe as a category of events, such as behavior, or type of interaction. Observation checklist use to collect data that be processed quantitatively and summarized in numeric form. Observation checklist is a worksheet that serves to observe and measure the level of success or achievement of learning objectives in teaching and learning activities in class.

Observation was intend to see how the procedure of tree diagram applied by the researcher. The aim of this observation is to get the data in order to improve the students writing skill especially writing descriptive text. The observation field used by the researcher to observe the students activities during teaching and learning process. It was be conducted along the learning process and in every meeting of both cycles.

b. Field Note

Field note is used by the researcher peer collaborator. Field notes is decisions made at this juncture of the research process may have a profound impact on the final ethnographic report. The researcher wrote the effects of the action in the field note. The collaborator collects all information about what is happening during teaching and learning process, collaborator write comments, suggestion and some obstacles or problems

that faced by the students and teacher in the class. The collaborator also write strengthen and weakness of the researcher when teach the students.

c. Interview guidelines

Before conducting an interview, researcher need an interview guide that can be used to help direct the conversation to the research topic and problem statement you wish to study. Interview guides vary from very detailed to relatively loose, but are basically meant to: help researcher know what to ask, in what order, how ask questions, and how to send follow-ups. This provides guidance on what to do or say next, after the interviewee has answered the final question. The interview guide is used to find out the teacher's response to the learning that has been done and to find out whether there are learning barriers.

Interview is the activity relate with giving question and answer during the process of interview itself include some information with the general mechanism and appropriate concept. Interview is the activity to study about experiencing, phenomenon, and theory then to express about information to build the actual and intellectual concept in human environment with the process of recording and transcribing of the research itself.

d. Test sheet

A test, in simple words, is a method to measure a person's ability or knowledge in a certain domain. The definition captures the essential

components of a test (Brown 2000, p. 384). The test sheet serves as a tool to collect data in the form of student scores. The researcher gives several questions contained in the test sheet. Then students answered the questions given by the researcher through the test sheet earlier. This test sheet was given at the beginning of the lesson before using the tree diagram technique and at the end of the lesson after applying the tree diagram technique. Test sheets are given to students to see if there is an increase in student learning outcomes using the tree diagram technique.

4. Data Analysis

Data analysis is the process of validate the data of research because this stage is important to see the data accurate, integrate, and straight of research process. Data are numbers, characters, images, or other recording method in a form which can be assessed to make a determination or decision about a particular action (Eric, 2006, p.5). So, data analysis validate the data from natural data input to validate data. Validate data of research also presented the research data because presenting data to show and compare with the natural data. So, research data include some data of research with explain some stages of research.

Technique of data analysis are qualitative and quantitative. Qualitative is primarly data analysis which the component to accommodate the researcher to get the data include the component are interview, observation, and field note as the component including teacher and students' relationship during

classroom activity to support learning activity. The qualitative approaches to data collection, analysis, interpretation, and report writing differs from the traditional quantitative approaches. Purposeful sampling, open data collection, analysis of text or images, representation of information in figures and tables, and personal interpretation of the findings all inform qualitative methods (Creswell, 2014, p.26).

Meanwhile quantitative is secondary data analysis which the component is test to measure and get some data to concept of result of research in reflecting of data. Data analysis to accommodate analyze the data. Data analysis for qualitative and quantitative is used to check and measure about the research data and validate the data into the authentic and natural data of research**.**

According to Creswell (2014, p.26) Quantitative methods involve the processes of collecting, analyzing. interpreting, and writing research results. Quantitative research values breadth, statistical description, and generalizability. The quantitative approach to research is centered on achieving objectivity, control, and proper measurement (Leavy 2017, p.87). Specific methods exist in both survey and experimental research that relate to identifying a simple and population, specifying the type of design, collecting and analyzing data, presenting the results, making an interpretation, and writing the research in a manner consistent with a survey or experimental study in this chapter, the reader learus the specific procedures for designing

survey or experimental methods that need to go into a research proposal. Checklist provided in the chapter help to ensure that all steps are included.

This classroom action research uses qualitative and quantitative data. Analysis with qualitative descriptive techniques is carried out for qualitative data in the form of observations and interviews. The data in this study are obtained through observation. Observations are made every activity took place. The main function of observation is to find out whether the tree diagram technique can improve students' writing ability. There were also interviews used to collect data for qualitative data analysis. Based on Schutt (2012, p.323) The process of qualitative data analysis has even been described by some as involving as much "art" as science as "dance". Qualitative data is used to describe everything that happens in the classroom. Qualitative data is also used to describe the results of applying the tree diagram technique, about how students respond, about the extent to which the tree diagram technique can improve student learning activities in class.

Meanwhile, quantitative data were analyzed using descriptive statistics, quantitative data in the form of scores on students' writing test results in each cycle. The researcher uses tests to obtain data as a quantitative data collection technique in this study. The information obtained be discussed, studied and solved together between researcher and collaborators. Quantitative data is used to describe the increase in student scores. Descriptive statistical methods were used to analyze quantitative data. This is done to compare the students' writing ability before and after the action by

dividing the number of students' scores by the number of students before and after the action.

Descriptive statistic method is use to analyze quantitative data. According to Norton (2009, p. 132) descriptive statistics include measures of central tendency or mean (mean, median and mode), measure of dispersion or variability (range, mean deviation and standard deviation) and number of frequencies. In analyzing the student's test paper, the researcher uses a statistical technique that is use to find the student's mean score.The data from the test are analyzed in order to prove whether or not teaching writing through mind mapping technique can improve students ability in writing descriptive text. In this research, the students mean score of pre-test is compare to the students mean score of post-test 1 and post-test 2 to know whether there is an improvement of the students ability in writing descriptive text.

The indicator of success in this Classroom Action Research is when students' descriptive text writing skills have increased. In this study the researcher carry out two cycles, namely cycle 1 and cycle 2, of course the researcher needs several criteria to determine the success or failure of a cycle. The success criteria be used as a guide for the researcher to use to decide whether this cycle has been successful or not and whether another cycle should be done. The criteria for success in this study described in the table below:

Table 3.2 criteria of success

Aspect	Description
Observation	If 80% of students actively participate in learning, are enthusiastic, and enjoy the process during learning, the cycle is considered successful
Interview	If 80% of students can give a positive response and participate in giving a good opinion on the learning process, then the cycle is considered successfu
Test	Test If 80% of students' scores increase, then the cycle be considered successful

In this research, a cycle said to be successful if 80% of students are able to obtain a minimum score in good criteria with a score range between 71 to 80 then the cycle be considered successful. While other success criteria seen from the observation checklist, interviews, field notes and documentation in the form of videos or photos. The criteria for success in this study also be seen from students who actively participate, are motivated and enthusiastic in the teaching and learning process. If 80% or more students give a positive response to learning with the tree diagram technique, then the cycle can be said to be successful and the researcher does not need to do another cycle.