# CHAPTER III
# METHOD OF INVESTIGATION

This chapter explain several of several aspects, such as setting of the research, popolation, sample, research design, validity of the instrument, validity of the instrument, method data collection, data analysis, and statistical hypothesis.

## 3.1 Setting of the Research

The researcher conducted the research at SMA Islam Jepara which is located at JL. Ratu Kalinyamat No.1 Kecamatan Tahunan, Kota Jepara. The researcher was conducted three meetings. In first meeting was used to give the pre-test in two classes. In the second meeting was used to give treatment in experiment class. The researcher used the treatment in the experimental class. Then, the last meeting was used by the researcher to give post-test. Then, the researcher collected all the data and analyzed them.

## 3.2 Population and Sample

### 3.2.1 Population

Population is the whole subject of the research (Arikunto, 2013:173). Another opinion was stated by Sugiono (2010) in Mubarok (2015:38), population is the generalization region consisting of the object/subject that have certain quantity and characteristics defined by the researchers to be studied and the drawn conclusion. In this research the researcher took two classes there is X MIPA and X IPS. The population is the tenth grade students of SMA Islam Jepara which divided into two classes. In X IPS consists of 25 students and in X MIPA consists of 18 students, so the total population is 43 students.

### 3.2.2    Sample

According Mubarok (2015:39), sample is a method/way in taking sample from population. Another opinion was stated by Rufeffendy (1994) cited in Anggarini (2008) said the sample for quasi experimental with non-equivalent control group design are taken from naturally assembled group as intact class. In this research the researcher used purposive sampling. Purposive sampling was the researcher took samples based on consideration of the researcher themselve. It means the sample is not randomly. This research took two classes ( X IPA and X MIPA). This research took 18 students from X MIPA and 18 students from X IPS, so the total samples were 36 students. The researcher was implemented Two Stay Two Stray (TSTS) model in the experimental class (X MIPA) and conventional technique in control class (X IPS) that currently in used by the teacher implemented to the second class.

## 3.3   Research Design

The design of this research was experimental research. Experiment is the best way to establish cause-and-effect relationship among variables (Fraenkel et al. 2012). This study tries to described the effect of treatment of two distinctions, Two Stay Two Stray model and speaking skill, the research design was pre-test and post-test. Therefore, the design was called a pre-test and post-test control group design. The study design was adopted from Ary, et.al (2002: 308).

This study used a Quasi Experiment Design. In this design, both the experimental and control group are compared, although the group is selected and placed without randomly (Mubarok, 2015:102). The researcher used quasi experimental design to know the distinguish between experimental group and control group. The control group was not gave any treatment ( Two Stay Two Stray model) as this picture below:

$$\boxed{\begin{array}{ccc} O1 & X & O2 \\ O3 & & O4 \end{array}}$$

Where,  O1 = pre-test of the experimental group

O2 = post-test of the experimental group

X  = treatment

O3 = pre-test of the control group

O4 = post test of the control group

(Mubarok, 2015:102)

In this study the researcher  use three steps in this research which describe below:

**a.  Pre-test**

Pre-test was used to know the basic capability of students. The researcher gave the same pre-test to experimental group and control group. The pre-test was given in the first meeting before both of class accepted treatment.
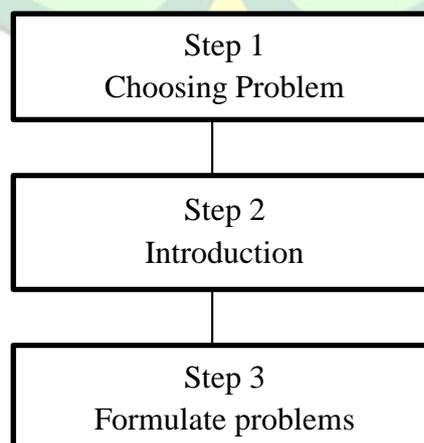
**b.   Treatment**

Treatment is technique that given to the students by researcher to help students improve their skill especilly in speaking skill. In this case, the researcher aplied Two Stay Two Stray Method to help students improve their speaking skill. The experimental group only that given this treatment.
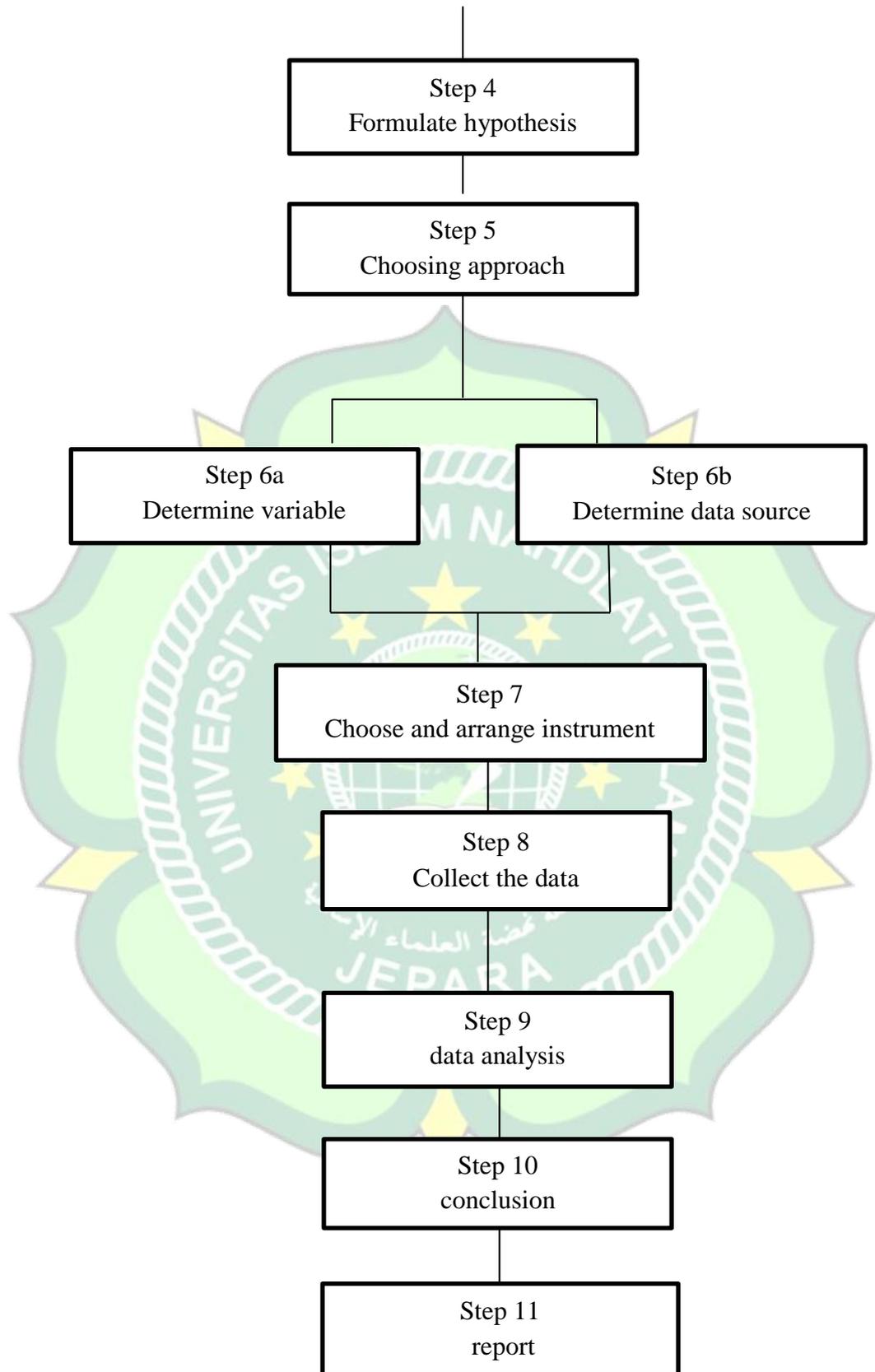
| Group | Meeting | Treatment |
|---|---|---|
| Experiment | Meeting 1<br>15 August 2018 | • Introduction<br>• Researcher gave pre-test to measure students basic comprehension of speaking. |
| | Meeting 2 | • Researcher greets students |

| | 15 August 2018 | in class |
| --- | --- | --- |
| | | • Researcher divided students into some groups. |
| | | • Each group consist of four students. |
| | | • Researcher gave some topic to each group related to the material (introduction). |
| | | • Researcher asked two students for each group to stray to other group. |
| | | • Every member asked and answer question. |
| | | • Two members go back to their own group and then share their idea. |
| | Meeting 3<br>21 August 2018 | • Researcher greets students in class |
| | | • Researcher divided students into some groups. |
| | | • Each group consist of four students. |
| | | • Researcher gave some topic to each group related to the material (descriptive text). |
| | | • Researcher asked two students for each group to stray to other group. |
| | | • Every member asked and answer question. |
| | | • Two members go back to |

| | | |
|---|---|---|
| | | their own group and then share their idea. |
| | Meeting 4 28 August 2018 | • Researcher gave post-test to measure students comprehension of speaking after treatment. |
| Control class | Meeting 1 15 August 2018 | • Researcher gave pre-test to measure students basic comprehension of speaking. |
| | Meeting 2 15 August 2018 | • Researcher greet students in class. <br> • Researcher gave material with traditional method (introduction) |
| | Meeting 3 21 August 2018 | • Researcher greet students in class. <br> • Researcher gave material with traditional method (descriptive text) |
| | Meeting 4 28 August 2018 | • Researcher gave post-test to students. |

The steps of research

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┌─────────────────────┐
│       Step 1        │
│  Choosing Problem   │
└─────────────────────┘
          │
┌─────────────────────┐
│       Step 2        │
│    Introduction     │
└─────────────────────┘
          │
┌─────────────────────┐
│       Step 3        │
│ Formulate problems  │
└─────────────────────┘
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┌─────────────────────────────┐
│          Step 4             │
│    Formulate hypothesis     │
└─────────────────────────────┘

┌─────────────────────────────┐
│          Step 5             │
│     Choosing approach       │
└─────────────────────────────┘
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┌──────────────────────┐          ┌──────────────────────────┐
│       Step 6a        │          │         Step 6b          │
│  Determine variable  │          │   Determine data source  │
└──────────────────────┘          └──────────────────────────┘

┌─────────────────────────────┐
│          Step 7             │
│ Choose and arrange instrument│
└─────────────────────────────┘

┌─────────────────────────────┐
│          Step 8             │
│      Collect the data       │
└─────────────────────────────┘

┌─────────────────────────────┐
│          Step 9             │
│       data analysis         │
└─────────────────────────────┘

┌─────────────────────────────┐
│          Step 10            │
│        conclusion           │
└─────────────────────────────┘

┌─────────────────────────────┐
│          Step 11            │
│          report             │
└─────────────────────────────┘

**3.4    Validity of the Instrument**

Bond (2003, p. 179) state that validity is foremost on the mind of those developing measures and that genuine scientific measurement is foremost in the minds of those who seek valid outcomes from assessment. From this explanation above, validity can be seen as the core of any form of assessment that is trustworthy and accurate. Validity refers to the degree in which our test or other measuring device is truly measuring what we intended it to measure.

In this research the researcher was used content validity. Conten validity pertains to the degree to which the instrument fully assesses or measures the construct of interest. Content validity is test that compared with the curriculum at school.

**3.5    Method of Data Colection**

Test in language education can be divided into two broad categories, namely written test and spoken test. Written test can be done for reading and writing test, while spoken test can be done for listening and speaking test (Mubarok 2015).

In this research the reseacher used two tests, pre-test and post-test. Pre-test used to know the base knowledge of students and the Post-Test used to know the result of students after treatment.

Technique and collecting data in this research is using a test which is given to both classes. In this research, the writer gave pre-test to see students' basic capability in speaking before using Two Stay Two Stray (TSTS) model of cooperative learning method in learning speaking. Then the resrarcher gave post-test which can measure the effectiveness of Two Stay Two Stray (TSTS) model toward students' speaking achievement.

The test in this research is spoken test which consist of coversational test. The researcher used rubric of speaking to assessed the student. The researcher focussed on, pronunviation, fluency, vocabulaty, and grammar use from each students.

Rubric of Speaking by Brown (2002:173)

| No | Name | Fluency | | | | Pronunciation | | | | Vocabulary | | | | Grammar use | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 |
| 1. | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | |

Student's score                    Total Score X 5

Category:

| Score | Aspects | | | |
|---|---|---|---|---|
| | Fluency | Pronunciation | Vocabulary | Grammar |
| 5 | Speaks fluidly, few or no breaks | Speeks clearly, accurate pronunciation | Varied old and new vocabulary | Strong grammar and very limited mistakes acceptable |
| 4 | Speaks mostly fluidly, a few long breaks | Speaks clearly, attempts accurate pronunciation. | Varied old vocabulary, but limited new vocabulary | Moderately strong grammar and several mistakes |
| 3 | Speaks less fluidly, a few long breaks | Speech is comprehensible, but have some mispronunciations | Basic vocabulary | Basic grammar and several mistakes |
| 2 | Does not speak fluidly, many long breaks | Mispronunciations impede comprehensibility | Limited vocabulary | Poor grammar and many significant mistakes |

**3.6    Method of Data Analysis**

The researcher analyzed the data which taken from both classes X IPS and X MIPA. Analyzing the data is the last step of the research to get result of the research. In this research, the writer used T-test formula as technique of data analysis. T-test was used to know the effectiveness of using Two Stay Two Stray (TSTS) model and to know the difference of students' score in both experimental class and controlled class. The researcher used Microsoft Excel and SPSS (Statistic Product and Statistic Solution. Here is the form of the T-test (Sudijono, 2006:314) :

$$t_{0=}\frac{M_1-M_2}{SE_{M_1-M_2}}$$

Where,

M$_1$      : Mean of variable X ( experimental class)

M$_2$      : Mean of Variable Y ( control class)

SE      : Standard Error

X      : Experimental Class

Y      : Control Class

N      : Students

t$_o$      : t observation

There are several stages that will take to get the calculation of t-test,

a.  Determining Mean of variable X, with formula:

$$M_1 = \frac{\sum X}{N_1}$$

b.  Determining Mean of variable Y, with formula :

$$M_2 = \frac{\sum Y}{N_2}$$

c.  Determining Standard of Deviation score of variable X, with formula :

$$SD_1 = \sqrt{\frac{\sum X^2}{N_1}}$$

d.  Determining Standard Deviation score of variable Y, with formula :

$$SD_2 = \sqrt{\frac{\sum Y^2}{N_2}}$$

e.  Determining Standard Error Mean of variable X, with formula :

$$SE_{M1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

f.  Determining Standard Error Mean of variable Y, with formula :

$$SE_{M2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

g.  Determining Standard Error of different Mean of variable X and Mean of variable Y, with formula :

$$SE_{M1-M2} = \sqrt{SE_{M_1}{}^2 + SE_{M_2}{}^2}$$

## 3.7   Statistical Hypothesis

Before deciding the result of the hypothesis, the researcher proposed two hypothesis to be tested :

a.  $H_o$ : there is empirical evidence that the use of Two Stay Two Stray (TSTS) technique is not effective in teaching speaking in first grade students of SMA ISLAM Jepara.

b.  $H_a$ : there is empirical evidence that the use of Two Stay Two Stray (TSTS) technique is effective in teaching speaking in first grade students of SMA ISLAM Jepara.