CHAPTER III

RESEARH METHODOLOGY

In this chapter, the researcher will illustrate how this study is conducted with the subject of research designing. It consists of research method and design, population and sample, research variables, research instrument, technique of data collection and technique of analysis data.

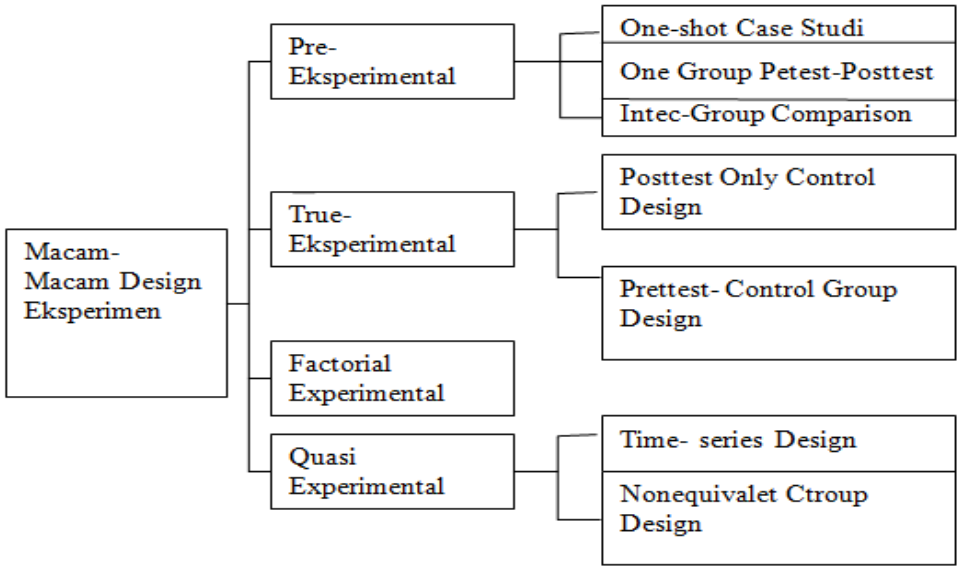
3.1 Research Method

"Research method can be described as the way of scientific to get a valid data in order for be able to be found, developed, proven and also used to conceive, solve and anticipate a problem" (Sugiyono, 2012:6).

Based on the purpose of the study has described by the researcher in the previous chapter, so research method used is quantitative method. A quantitative research method has the purpose to describe a social phenomenon which focused on the relationship between the variables studied. Quantitative research method is often well known as positivistic method because it based on the philosophy of positivism. Sugiyono (2012:14) said that "quantitative method can be interpreted as research method that based on the philosophy of positivisms, it is used to examine population or sample.

3.2 Research Design

Reseach design used of this study is *Experimental Design* with type of *True Experimental*. Sugiyono (2012:109) says that "there are so many kinds of research design that are able to used in a research. They are *Pre-experimental design, True experimental design, Factorial experfimental design and Quasi experimental design.* The following schematic depiction of the experiment is the form below:



(Source : Sugoiyono, 2012:109)

Based on the diagram above, the researcher uses True Experimental with Pretesst-Posttest Group Design as the form of research design of this study. Sugiyono (2012:113) said that "In this research, there are 2 groups chosen randomly. They are Control Group (A) and Experiment Group (B). Than they are given Pretest to know there is difference or not between both of them". Group A control is the group that is not given Treatment (X) by the researcher while group B experiment is the group given Treatment (X) by the researcher to know is there any influence or not for giving that treatment. The treatment above is the use of Inside-Outside Circle method by using Cue Card in teaching speaking. As for the research design for this model based on Sugiyono (2012:113)

Table 3.1 Pretest-Posttest Group Design

Group	***Pretest***	***Treatment***	***Posttest***
Control	**Y1**	**-**	**Y2**
Experimental	**Y1**	**X**	**Y2**

Note:

Y1**:** Pretest before treatment (Both of Groups)

Y2: Posttest after treatment (Both of Groups)

X: The Treatment given to Experimental Group

3.3 Population and Sample

3.3.1 Population

According to Arikunto, population is all of the subjects of the research (2010: 173). The population of this study was the seventh grade students of SMP Muhammadiyah 11 Surabaya in the years of 2014/2015. It should be clear from the above data that the population of the study consists of four classes of students from 7A-7D.

Table 3.2 The Number of All Population

No	Class	Number
1	**7A**	**31**
2	**7B**	**30**
3	**7C**	**30**
4	**7D**	**30**

3.3.2 Sample

Sample is a part of population that has the same characteristic with population its self. Sugiyono (2012:118) stated “Sample is a part of the number of population

that has the same characteristic". In simple word, sample is part or representative from the population that will be studied.

To establish the number of sample of this study, the researcher uses *Snowball Sampling Technique*. Cresswell (2002:161) stated that "Snowball sampling is a technique taken by interviewed a superior person. Cresswell told again deply that superior person can be a teacher, headmaster etc that knows all of condition about the sample". By the statement above, The researcher uses it to establish the number of sample. But before establishing it, the researcher interviews English teacher at SMP Muhammadiyah 11 Surabaya, Mrs. Ro'ifah, M.Pd. She said that 7B and 7C class is more effective to be used as sample of this study. Mrs. Ro'ifah also added that academically, the students of 7C class are high achievers than 7B. So she guessed the researcher to use 7B class as Experimental group while 7C class as Control group.

Based on interviewing above, the researcher establish that 7B class will get the treatment about teaching speaking uses IOC technique with Cue Card as media, while 7C class will not get treatment, and just taught speaking with "lecturing" method.

3.4 Research Variables

Research variable is a form established by the research its self to be studied so that can be found an information and than made a conclusion. Sugiyono (2012:60-61) stated that "theoretically, research variable can be defined as someone's atribute or object's atribute that has the same variance between one person with another person or one object with another object". He also stated that research variable is divided into 2 kinds, those are Independent (X) and Dependent variables (Y). Independent

variable is an influencing variable or becoming a cause for the onset of variable Y (Dependent Variable), while dependent variable is a variable influenced by the variable X. It means that dependent variable (Y) is a effect because Independent variable (X) that can stand alone without depends on another variable.

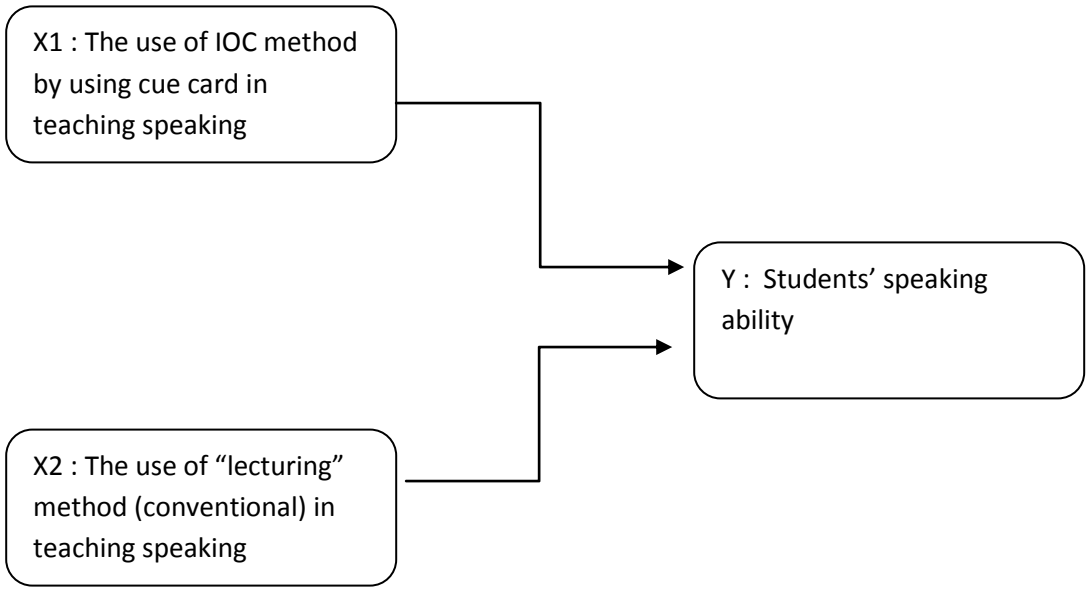
3.4.1 Independent Variable (X)

(X1) : The use of IOC method by using cue card in teaching speaking.

(X2) : The use of "lecturing" method (conventional) in teaching speaking.

3.4.2 Dependent Variable (Y) : The Students' Speaking Ability

Here is a schematic depiction of the relationship between the independent variables with the dependent variable in this study



On this study, the variable will be observed only Variable Y the students' result of study.

3.5 Research Instruments

In this research the researcher uses some of instruments to do the experimental research.

3.5.1 Pre-test

Pretest is a test that given to students before they get a treatment. The function of pretest is to measure how far the students understand the teacher's explanation before. Beside that, pretest is also used to choose which one is the control group and expermental group based on the result. Creswell (2002:297) stated that a pretest uses to measure the participants' ability in experiment before they recieve a treatment.

In this research the researcher give a pretest about describing people that they like, it can be idol etc. The pretest will be given to the 7B and 7C class with the same materials.

3.5.2 Post-test

As like the pretest, in posttest the researcher also give the question about describing people/idol. But there is difference that idol is choosen by the researcher to make them so easily.

3.6 Research Procedure

In this case, the researcher will describe about research procedure that will be done in both of groups. As seen in this table below:

Control	Experimental
1. The researcher enters the classroom and describes about the material 2. The researcher asks to the students to describe their idol by their own word, and make it in some notes 3. The researcher gives 40 minutes to the students to finishing it	1. The researcher enters the classroom and describes about the material 2. The researcher divides the class into 6 groups. each group consists of 5 students 3.The researcher describes about the material and implementation from IOC method

4. The researcher asks the students to go ahead in front of the class one by one. 5. The researcher closes the class.	4.The researcher asks the students to make circle and make them to face each other where inside circle bring the cue card and outside circle bring the some notes. 5.The researcher asks the students to move ach 1 minutes in another position in order to find their partners 6. The researcher asks to the students to describe their idol by their own word with their partners. The researcher closes the class

3.7 Reliable and Validity

3.7.1 Reliability

Reliability is one of the important test in the measurement of the quality test. Mousavi in Brown (2004:20) states that a reliable test is consistent and dependable. It means that the score must be similar when the same test are given to the same students on two different occasions. Besides consistent, the score has to be dependable. It means that the students' score are proved and believable. Finally, reliability is demonstrated not only through predictability but also through commitment and dedication (Creswell, 2002:43).

According to Heaton (1990: 162) a test its self is categorized reliable if the scores are relatively stable among one rater to another. To get reliable result, the

researcher uses 2 observer when observe the students. It calls intereter. In this study, the rater 1 is the teacher and the rater 2 is the researcher.

According to Bartz (1976:195) pearson product-moment correlation is common uses in measuring reliability. The formula is as follows:

$$r_{XY} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - \left(\sum X\right)^2\}\{N\sum Y^2 - (Y)^2\}}}$$

r_{XY} = correlations coefficient

$\sum XY$ = total of result times score X and Y

$\sum X$ = total score X (total score from the teacher as rater 1)

$\sum Y$ = total score Y (total score from the researcher as rater 2)

$\sum X^2$ = total quadrate score X

$\sum Y^2$ = total quadrate score Y

N = number of subjects

From that formula, the level of reliability is determined based on the criteria by Bartz (1976:205) as seen in the table below:

Table 3.3

Criteria	Description
0.80 < r	The reliability is very high

$0.60 \leq r \leq 0.80$	The reliability is strong
$0.40 \leq r \leq 0.60$	The reliability is moderate
$0.20 \leq r \leq 0.40$	The reliability is low
$r < 0.20$	The reliability is very low

The researcher count the data to get the reliability uses Microsoft Excel. The counted results see at appendix.

3.7.2 Validity

In the validity, Sugiyono (2013:121) said that Valid instruments is the measurement used to get the data. Valid means the instruments are used to measure what should be measured. Therefore in using valid instruments in this research, the researcher expected the valid result. The data of validity was measured from the valid instruments. To make the instruments became valid in making short film in teaching speaking for eighth grade, the researcher used standard competency and basic competency in Indonesia curriculum that was related with those instruments.

Table 3.4

The result of validity

Class	Standard competency	Basic Competency	Indicators
Seventh Grade Curriculum 2006	1. Menghargai dan menghayati ajaran agama yang dianutnya.	1.1 Mensyukuri kesempatan dapat mempelajari bahasa Inggris sebagai bahasa pengantar komunikasi Internasional yang	1.1.1 Mengucapkan rasa syukur atas kesempatan mempelajari Bahasa Inggris melalui do'a

		diwujudkan dalam semangat belajar	2.1.1 Melaksanakan perilaku santun dalam
	2. Menghargai dan menghayati perilaku jujur, disiplin, tanggungjawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan sosial dan alam dalam jangkauan pergaulan dan keberadaannya	2.1 Menunjukkan perilaku santun dan peduli dalam melaksanakan komunikasi interpersonal dengan guru dan teman. 2.2 Menunjukkan perilaku jujur, disiplin, percaya diri, dan bertanggung jawab dalam melaksanakan komunikasi transaksional dengan guru dan teman.	berkomunikasi dengan guru dan teman 2.1.2 Melaksanakan perilaku perduli dalam berkomunikasi interpersonal dengan guru dan teman. 3.1.1 Mengenal fungsi sosial teks lisan dan tulis dalam melakukan percakapan yang telah dibuat oleh siswa.
	3. Memahami dan menerapkan pengetahuan (faktual, konseptual, dan prosedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.	3.1 Menerapkan struktur teks dan unsur kebahasaan untuk melaksanakan fungsi sosial dari ungkapan hasil percakapan yang dibuat oleh siswa, menghargai kinerja yang baik, dan meminta dan mengungkapkan pendapat, serta responnya, sesuai dengan konteks	4.3.1 Menyusun teks lisan dan tulis terkait cara yang di buat oleh siswa.

	4. Mengolah, menyaji, dan menalar dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.	penggunaannya 4.1 Menyusun teks lisan sederhana untuk mengecek pemahaman, dan menghargai kinerja yang baik, serta memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks	4.3.2 Menggunakan unsur kebahasaan dalam percakapan sesungguhnya. 4.3.3. Melafalkan dengan ucapan, tekanan kata dan intonasi yang lancar dan benar.

Based on the table above, it shows that data is suitable with standard competency and basic competency. It is also in row with indicators. The result was considered to be valid.

3.8 Data Collection Technique

Sugiyono (2012:308) stated that " data collection technique is a main step of the research because it has the function to get data". Without knowing it, the researcher will not get standarized data. Data is a thing more needed in a research to be observed and studied. Therefore the researcher uses Test as data collection technique. Test has the function to get the results of pretest and posttest.

As the steps done in data collection technique as below:

3.8.1 Preparation

a. Analyzing topic materials

b. Arrange lesson plan

c. Preparing Instrument assesment and test

d. Revision about instrument

e. Making test

For consultancy about all above with the true teacher in SMP Muhammadiyah 11 Surabaya

3.8.2 Realization

a. Giving pretest for both of groups, experimental and conrtrol group

b. Implementation of the trarment about IOC method by using cue card in teaching speaking at experimental group

c. Giving posttest for both of groups.

3.8.3 Ending of Action

a. Collecting data

b.Observing data

c. Analyzing data

3.9 Data Analysis Technique

Sugiyono (2012:147) state that Analyzing data will be done if all of data have benn collected. The activities of data collection technique are grouping data based variable, showing data and doing the calculation to answer the satement of the problem as well as to examine hypothesis.

3.9.1 Normality Test

The purpose of the normality test is about to know is the data normal or not. Normality test is done by using SPSS verse 17. To check this data is normal or not, the criteria of testing normality is if Pvalue > σ (sig. 0.05) so that H_0 is accepted. But if Pvalue < σ so that H_0 is refused.

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 push away, if $p_{(value)} < \alpha$, so data is normal distribution

H_1 Push away, if $p_{(value)} > \alpha$, so data is mor normal distribution

3.9.2 Homogenity

After the data is distributed normally, so it will be continued by examining Homogenity test with using SPSS verse 17. Homogeniy has the function to check that 2 variables is the same or not. The criteria of testing homogenity is if $F_{tabel} < F_{count}$ refuses H_0 or Pvalue < α (5% = 0.05).

$H_0 : \sigma_1^2 = \sigma_2^2$ there is no difference between experimental and control class

$H_1 : \sigma_i^2 \neq \sigma_j^2$ there is difference between experimental and control class

In addition, the researcher also counts homogenity using another way with calculating F_{count} and F_{table}. If $F_{count} > F_{table}$, so H_0 push away, but if $F_{count} < F_{table}$ so that H_1 push away.

3.9.3 T-Test

After testing homogenity, it will be continued with T-test. T-test has the function to know is there significance or not in implementation of the treatment (Nazir, 1988: 464). On the standarization 0.05 with formula hypothesis :

H_0 : IOC method by using cue card is not effective for students' speaking ability at seventh graders. H_1 : IOC method by using cue card is effective for students' speaking ability at seventh graders.

The criteria of the test based on *p-value* as below*:* H_0 push away, if $p_{(value)} < \alpha$, so there is no effective H_1 Push away, if $p_{(value)} > \alpha$, so there is effective

As homogenity, the researcher also counts T-test using manual way with calculating T_{count} and T_{table}. If $T_{count} > T_{table}$, so H_0 push away, but if $T_{count} < T_{table}$ so that H_1 push away.

3.9.4 Eta Squared

In this study, the researcher adds Eta Squared to support T-Test. As stated Pallant (2010:243) that eta squared is used to get more valid data that is able to support the result of T-test. To count eta squared, the researcher uses the formula:

$$= eta\ squared = \frac{t^2}{t^2+(N_1+N_2-2)}$$

The results of the eta squared can show the data is effective or not. To know the data is effective or not, it can be seen in the result of the table below:

Result	Categories
0.01	Low effective

0.06	Moderate
0.14	Large effective

3.9.5 Computing Mean

Computing the mean of pretest and posttest scores in each group by arithmetic average technic. (Bachman, 2004:56).

$$\bar{x} = \frac{\Sigma x}{N}$$

$\bar{x}$ = mean

Σx = the sum of the x scores

N = the number of the subjects

3.9.6 Computing Standard Deviation

Determining the Standard Deviation used for the scores pretest and post test for both groups from raw scores. (Bachman, 2004:68).

$$s = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$$

S = Standard Deviation

$\sum x^2$ = the sum of the x squared scores

$\bar{X}^2$ = the mean of distribution

N = the number of the students

3.9.7 Computing Standard Error of The Differences

Determining standard error of the differences by parametric test of significance. (Butler, 2006:79)

$$S_{D\bar{x}} = \sqrt{\frac{N_1 S_1^{\ 2} + N_2 S_2^{\ 2}}{N_1 + N_2 - 2}} \left(\frac{1}{N_1} + \frac{1}{N_2}\right)$$

$S_{D\bar{x}}$ = Standard error of difference

S_1 = the standard deviation of the first sample

S_2 = the standard deviation of the second sample

N_1 = the sizes of the first receptive sample

N_2 = the sizes of the second receptive sample

3.9.8 Computing Degree of freedom

Determining Degree of Freedom. (Bachman, 2004:239)

$$df = N_1 + N_2 - 2$$

df = degree of freedom

N_1 = the size of the first receptive sample

N_2 = the size of the second receptive sample