CHAPTER III
RESEARCH METHOD

A. Research Design

1. Type of Research

In this study, the research used Quantitative method. A quantitative data dealt with numerical data.[1] In this study, the results of actual interview as quantitative data used to find out the effect of Pedagogic competence on their certified English teachers.

Meanwhile, a qualitative data presented with words or symbol. An analysis of qualitative data can be used to strengthen description of a quantitative data.[2] In this study, the results of interview the students and the teacher as a qualitative data used to find out the effect of certified English teachers quality. The quantitative method usually called by traditional method, because this method is already long enough to use, so it has become a traditional as a method for research. This method is referred to positivistic method because it is based on the philosophy of positivism. This method as a method of scientific because it has meets the scientific norms, namely concrete, empirical, measurable,

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[1] Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik,* (Jakarta: PT. Rineka Cipta 2006)2ⁿᵈ, p. 239

[2] Arikunto, *Prosedur Penelitian…*, p. 239

objective, rational and systematic. Quantitative method is called because the research data in the form and figures and analysis using statistic.[3]

B. Place and Time

Based on the research design, this research was conducted in some school of Private Junior High School in sub-district of Ngaliyan Semarang and grade of Ninth semester in year of 2016/2017, the researcher chose some students in some schools and taken a many sample from student.

No	School	Address
1	SMP Hasanuddin 07	Jl. Kauman 01 Podorejo
2	SMP Nurul Islam	Jl. Siliwangi 574
3	SMP Hj. Isriati	Jl. Abdurrahman Saleh

**Table 2.1 The list of Private Junior High School in
Sub-districts of Ngaliyan**

C. Population and Sample

1. Population

Population is the entire research subject.[4] In this research, the population is the students of Private Junior High School in Sub-districts of Ngaliyan Semarang in Academic year of 2016/2017.

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[3] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D,* (Bandung: Alfabeta, 2010), p.13

[4] Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik…*, p. 117

List of Total student in population of student at Private Junior High School in sub-districts of Ngaliyan Semarang:[5]

No	School	Certified English Teachers	Student		Total
			Male	Female	
1.	SMP Hasanuddin 07	M. Qolyubi, S.Ag.	24	30	54
2.	SMP Nurul Islam	Aji Heru Pambudi,S.Pd	48	60	108
3.	SMP Hj. Isriati	Syi'aruddin Basya, S.S	48	40	88
Total			120	130	250

Table 2.2 The list of total population

2. **Sample**

Arikunto states that sample represent a part of research population.[6] The sample is taking of a part population using certain procedure. So it can be expected to represent population and every school has many students to be a sample. This research used random sampling to choose the student as a subject.

The list of private junior high school in Sub-district of Ngaliyan Semarang:[7]

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[5]Source of http://dapo.dikdasmen.kemdikbud.go.id/sekolah/, accessed at 13:45 on 28th October 2016

[6]Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik…,* p. 118

[7] Source from Education Institution of Semarang City, *The Data of Teacher Certification in Sub-districts of Ngaliyan Semarang*

No	School	Address	Certified English Teachers
1	SMP Hj. Isriati	Jl. Abdurrahman Saleh	M. SYIARUDDIN BASYA,S.S.
2	SMP Hasanuddin 07	Jl. Kauman 01 Podorejo	M. QOLYUBI, S.Ag.
3	SMP Nurul Islam	Jl. Siliwangi 574	AJI HERU PAMBUDI, S.Pd

Table 2.3 The list of a Private Junior High School in Sub-districts of Ngaliyan

D. Variable and Indicator

1. Variable

According to Sugiyono, research variables are all things that shape what is defined by the researchers to be studied in order to obtain information about it and the conclusion drawn on next.[8] There are two types of variables, Independent variable and dependent variable, they are:

a. Independent Variable (X)

The independent variable was selected by the researcher to determine the relationship with dependent variable. In this research is teacher's Pedagogic competence in EFL learners.

b. Dependent Variable (Y)

Dependent variable is the variable that focused on the central variable, and the other variables will act if

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[8]Sugiyono, *Metode Penelitian Kuantitatif…*, p. 60

there is any relationship. Dependent variable in this research is the student achievement in EFL.

2. **Indicator**

Based on the variable above, it can make indicators that support the variables. The schema of indicators variables are state as follows:

Variable	Indicators
(Independent Variable) Teachers Pedagogic competence in EFL learners(X)	• The authorizing the characteristic of student from aspect of physic, morality, spiritual, social, cultural, emotional, and intellectual. • The authorizing theory of learning and principle educated. • The developing of curriculum related with English lesson. • The organization of learning to educate. • Exploit the information technology in the learning process. • Facilitating to develop student potential in order to actualize of their potential. • Communicate effectively, emphatically, and good manners with student. • Organize the assessment and evaluation of student achievement. • Exploit the assessment result and evaluation learning. • Do the action reflectively to improve learning quality.

(Dependent Variable) Students Achievement in EFL (Y)	• Score of student report (1st Semester, 2nd Semester, 3rd Semester and 4th Semester)

Table 2.4 The Schema of Indicators Variable

E. Data Collection Technique

The researcher collects the data to achieve the research. Susan Stainback said that the aim is not to determine the truth about some social phenomenon, rather the purpose is to increase one's understanding of whatever is being investigated. The technique of data collection in this research, consist of:

1. Questionnaire

Questionnaire is the written question given to respondent to answers. The respondent can give the answer by writing the mark of one or some answers that available in serve or by the write it answers.[9] The researcher used questionnaire as an instrument to collect data by developing the grill question related with Pedagogic competence in that school and the respondent is a student.[10]

In this research, the researcher used closed questions, it means that enables the respondent not given any probability to give long answer in his way of explanation, because the

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[9] Kountur, Ronny, *Metode Penelitian,* (Jakarta: Buana Printing, 2007), p. 189

[10] Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik Edisi Revisi V,* (Jakarta: PT. RinekaCipta, 2002), p.268

researcher has determined the answer of question and the respondent only has to choose the available options.

2. Documentation

Documentation is the method used to find the data concern about thing or variable like a note, transcript, book, newspaper, magazine, notes of meeting, agenda and etc.[11] The researcher used the document related with object research such as student's name list, teacher's name list, school's name list, the book report of student and the teachers certificate. The instruments here are documents to measure the influencing. Documents are used to get the information about the students' English achievement there. The researcher collected the data of the activity in the class, while the teacher teaches by taking photograph. Then, the researcher made some conclusions based on the documentation.

F. Validity and Reliability

1. Validity

The validity is an important quality of any test. It is a condition in which a test can measure what is supposed to be measured. According to Arikunto, a test is valid if it measures from what the purposed to be measured. The measurement can show the validity of instrument? The validity of an item

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[11] Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik…*, p. 274

can be known by doing item analysis. It is calculated by using product – moment correlation formula: [12]

$$r_{xy} \frac{N\sum XY - \sum(X).\sum(Y)}{\sqrt{\{N.\sum X^2 - \sum(X)^2\}\{N.\sum Y^2 - \sum(Y)^2\}}}$$

r_{xy} : The correlation coefficient between X variable and Y variable

N : The number of students

X : The number of each item score

Y : The number of total score

Calculation result of r_{xy} is compared with r_{table} of product moment by 5% degree of significance. If r_{xy} is higher than r_{table} the item of question is valid.[13]

2. Reliability

Reliability is as far as the result of measurement that believable.[14] It means "consistent". Reliability refers to the consistency of test scores. Besides having high validity, a good test should have high reliability too. Reliability testing was conducted with internal consistency technique of dividing the two analyzed by Spearman Brown formula.

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[12]Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik, …* p. 314

[13]Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, (Jakarta: Bumi Aksara, 2002), p.3

[14]Sudaryono, *Dasar-Dasar Evaluasi Pembelajaran,* (Yogyakarta: Graha Ilmu, 2012), p. 185

Spearman Brown (Split Half):[15]

$$r_i = \frac{2r_b}{1 + r_b}$$

Where:

r_i = Internal reliability of Instrument

r_b = Correlation of Product moment between first split and second split

Calculation result of r_{xy} is compared with r_{table} of product moment by 5% degree of significance. If r_{xy} is higher than r_{table} the item of question is reliability.

G. Technique of Data Analysis

This research uses some steps of analysis:

1. Descriptive Analysis

The first step is descriptive analysis method which the data was retrieved, compiled, classified, analyzed, and then interpreted objectively so the retrieved a description of problems encountered and explain the result of calculation.

2. Hypothesis Analysis

Simple linear analysis is used to find out the relationship between the Independent variables and Dependent variables. In this case the research is used to know the effect on Pedagogic competence of certified English

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[15]Sugiyono, *Metode Penelitian Pendidikan...*, p. 185

language teachers towards students English achievement with the following formula:

a. Normality Test

   According to Sugiyono, statistics parametric, requires that any variables must be analyzed then before the hypothesis testing is done in advance of testing the normality of data. Test of normality was done on both variables examined. The Independent variable (X) is the teachers Pedagogic competence in the view of EFL learners and Dependent variable (Y) is students achievement in EFL, and then after the result found, it was counted by Microsoft Excel 2010 and SPSS application, This research used Liliefors (Z) formula[16], namely:

$$Z_i = \frac{x_i - \bar{x}}{s}$$

Where:

Z_i :   The number of transformation into notation in normal distribution

x_i :   The number of data mean of regression line quadrate

$\bar{x}$:   mean of data

s :   Standard Deviation

Terms of testing with a 5% significance level:

[16]Sudjana, *Metode Statistika,* (Jakarta: Tarsito, 2005), p. 467

If $L_O > L_{Table}$, so the data Ho is Rejected

If $L_O < L_{Table}$, so the data Ho is Accepted

b. Regression Analysis of Similarity

This analysis aims to move on from the preliminary analysis. This analysis is intended to test the data on the influence of the Independent variable (X) against a variable is Dependent (Y). For analyzing the data with the following stages:

1) Looking for the correlation between the predictor and criteria through technique of *product moment* formula:

$$r_{xy} \frac{N\sum XY - \sum(X).\sum(Y)}{\sqrt{\{N.\sum X^2 - \sum(X)^2\}\{N.\sum Y^2 - \sum(Y)^2\}}}$$

r_{xy} : The correlation coefficient between X variable and Y variable

N : The number of students

X : The number of each item score

Y : The number of total score

2) The correlation of significancy consult with r_{table}.

3) Looking for the regression similarity:[17]

$Y = a + bX$

Y : Dependent variable

X : Independent variable

a : the numerical of constant

[17]Sugiyono, *Metode Penelitian Pendidikan,....*, p. 262

b : the numerical of predictor coefficient

4) Variant analysis of regression line:[18]

$$F_{reg} = \frac{RK_{reg}}{RK_{res}}$$

Where:

F_{reg} : value of F numerical for regression line

RK_{reg} : mean of regression line quadrate

RK_{res} : mean of residue quadrate

s : Standard Deviation

H. Hypothesis Test

1. Coefficient of Determination

Coefficient of determination $(R2)$ is used to measure the extent of the contribution of Independent variable (X) against Dependent variables (Y). If the coefficient determination $(R2)$ is getting large (approaching one) shows the better capabilities of the variable X and Y variables explains where $0 < (R2) < 1$. Conversely, if $R2$ got smaller (close to zero), it will be said that the influence of Independent variable is small towards Dependent variables. It means that the result is not strong enough to explain to influence between Independent variable towards Dependent variable.

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[18]Sugiyono, *Metode Penelitian Pendidikan*...., p. 276