CHAPTER III

RESEARCH METHOD

This chapter provides the design used in this study, data and source of data including population and sample, data collection technique and the instrument used, and the technique of analyzing data.

A. Research Design

As the data is in the form of numeric, the approach used in this study is quantitative. Meanwhile, correlation is used as the type of the study since the aim is to find out the correlation between two variables; phonemic transcription mastery and English pronunciation.

Variable is defined as “any entity that can take on different values.”¹ Independent variable is the variable that affects the change of the dependent variable. Dependent variable is the variable that is affected by independent variable.² Therefore, phonemic transcription is as the independent variable and English pronunciation is as the dependent variable.

The data obtained from the phonemic transcription and English pronunciation is in the form of interval. Hence, the type of the correlation is

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²Sugiyono, Statistika untuk penelitian (Bandung: Alfabeta, 2010). 4
Pearson Product Moment. This type of correlation is used to find out and prove the hypothesis between two variables if the data of both variables are in the form of interval and ratio, and the source of the data from the two variables is same.\(^3\)

To find out the correlation between two variables or more, it is obtained by calculating the correlation between the variables which is used to find out the correlation. The correlation indicates the strength of the correlation between the variables.\(^4\)

The correlation of two variables is positive if the value of one variable is increased, it will increase the value of the other variable. On the contrary, if the value of one variable is decreased, it will decrease the value of the other variable. Meanwhile, the correlation of two variables is negative if the value of one variable is increased, it will decrease the value of the other variable. On the contrary, if the value of one variable is increased, it will decrease the value of the other variable. Yet, if one variable changes while the other variable is constant, so it is called no or zero correlation.\(^5\)

\(^3\)Sugiyono, *Statistika untuk penelitian*... 228
\(^4\)Sugiyono, *Statistika untuk penelitian*... 224
\(^5\)Sugiyono, *Statistika Untuk Penelitian*... 225-226
B. Setting of The Study

In research method, Setting is one of the parts which play an important role. It includes place and time. Setting of the place of this study was at PBI, IAIN Sunan Ampel, Surabaya, while setting of the time was on Tuesday-Wednesday, June 5th-6th, 2012.

C. Data and Source Data

The data of the first research question is the pronunciation score of the students of PBI IAIN Sunan Ampel obtained from the test conducted. The next is the scores of the written phonemic transcription of the students of PBI IAIN Sunan Ampel which used to get the data of the second research question. The data from the first and second research questions are in the form of interval. To know the level of the students’ competencies, it is designed a likert scale.
“Likert scaling is a unidimensional scaling method.”\(^6\) There are some steps in developing the likert scale:

1. Defining the focus: in this research, what is measured is the score of the English pronunciation and the phonemic transcription. Each of the score used to get the data from the first and second research questions.

2. Generating the items: the scores are rated on 0 – 100 bad-good response scale.

3. Rating the items: having a group of judges rates items.

\[81 \rightarrow 100: \text{the English pronunciation and the phonemic transcription are classified as very good if the score are at this rate.}\]

\[61 \rightarrow 80: \text{the English pronunciation and the phonemic transcription are classified as good if the score are at this rate.}\]

\[41 \rightarrow 60: \text{the English pronunciation and the phonemic transcription are classified as average if the score are at this rate.}\]

\[21 \rightarrow 40: \text{the English pronunciation and the phonemic transcription are classified as bad if the score are at this rate.}\]

\[0 \rightarrow 20: \text{the English pronunciation and the phonemic transcription are classified as very bad if the score are at this rate.}\]

4. Selecting the items

5. Administering the scale: the scale is ready to use.

\[81 \rightarrow 100: \text{very good}\]

\[61 \rightarrow 80: \text{good}\]

41 – 60 : average
21 – 40 : bad
0 – 20 : very bad

Meanwhile, to get the data of the last research question, it is used the correlation between the first and the second data. The interval data obtained from the first and second research question are used to answer the last research question, which is the correlation between the English pronunciation and the phonemic transcription mastery.

The population which is used as the source of this study is the students of PBI IAIN Sunan Ampel, while the sample of this study is the students of semester 4 of PBI IAIN Sunan Ampel Surabaya. The reason for taking semester 4 as the sample is because they have got phonology class in this semester in which they had been taught about phonemic symbols. Moreover, the students of semester 4 were the students who were still fresh in learning the phonemic symbols, because the teaching of phonology class was in semester 4. Therefore, purposive sampling is used as the technique of sampling. The number of the students of semester 4 joining phonology class was 57. However, 7 of the students used as the sample could not come on the day when the test held. Therefore, the students joining the test are 50.

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7 Sugiyono, *Statistika Untuk Penelitian...* 68.
D. Research Instrument

To get the data from the first and second research question, it used tests as the instrument. The tests are in the form of written test. Meanwhile, after the interval data from the first and second research question were obtained, it was used to answer the last research question, which is the correlation between English pronunciation and the phonemic transcription mastery.

The valid instruments means the measuring instruments used to get the data are valid. Valid means the instruments can be used to measure what will be measured. Meanwhile, the instruments are reliable if it is used several times to measure the same object, it will generate the same data. By using the valid and reliable instruments, it is expected that the result of the result will be valid and reliable.\(^8\)

To test construct validity, it can be used the judgment experts. The test of content validity can be done by comparing between the content of the instrument and the subject taught. Meanwhile, it can be used test-retest to test the reliability of the instrument.

The tests used as the instrument in this research have been validated by an expert to test the construct validity of this instrument. It has been validated by a lecturer of phonology at PBI, IAIN Sunan Ampel, Surabaya. Actually, some of the items and the key answers of the instruments were not valid, but other items are used to change the items and the key answers which are not valid. The content of

\(^8\) Sugiyono, *Statistika Untuk Penelitian*. 348.
the instruments have also been compared with the phonology subject taught in semester 4. This is used to test the content validity of this instrument. Meanwhile, the reliability of the instruments of this research is tested by using test-retest. Hence, the instruments were tested to 20 students of PBI, IAIN Sunan Ampel, Surabaya. Ten of the students are from semester 6, while the others are from semester 8. The results indicate that the tests used are reliable.

The students needed more or less 45 minutes to do the English pronunciation and phonemic transcription.

E. Data Collection Technique

In collecting the data, the researcher used tests as the technique. Test is the technique that was used to collect the first and the second data of the first and the second research question.

1. Testing the English pronunciation which is used to answer the first research question.

A good test should test what should be tested. It is realized that ideally, the way of testing English pronunciation is asking the learner to produce the English words by testing them orally. However, it is not always possible and suitable. This is caused by one of the greatest problem that is administration. Even managing the large number of the students to be tested is not often possible. Beside, testing equipment used to test pronunciation is scarce. Therefore, it was used the alternative way to test the English pronunciation from the point of
view of segmental feature, such as; finding the word which is different from the others.

E.g. a. How       b. cow       c. low       d. now

In this example, the answer is c. low.

2. Testing the ability of phonemic transcription mastery which is used to answer the second research question

This test is about the phonemic transcription. The respondent was provided some words in which one or some of the letters are underlined, and they have to transcribe the underlined letters into the phonemic symbol.

Eg. Cat /æ/

Testing the English pronunciation and the ability of phonemic transcription were held at the same time. They have 45 minutes to do the tests. The students as the sample of this research were divided in to three classes; class A, B, and C. Each class had same treatment. The seats of the students were arranged so that the opportunity in cheating was limited. Beside, the researcher easily monitored the students when doing the tests. Before doing the tests, the students told that the results of the tests done had not affected to their score of phonology. They were also told that they had been in research.

3. After the data from the first and second research question are collected, it was used to answer the last research question.
F. Data Analysis Technique

The data gathered from each test were used to answer the first and the second research question, in which those were analyzed by using descriptive statistics. The data was served in the form of table and diagrams.

There were some steps in analyzing the data from the oral and written test:

1. Drawing table and diagram to serve the data.
2. Judging the results using likert scale whether the pronunciation performance and the ability of using phonetic symbols of the students are good.
3. Drawing table to serve the result.
4. Analyzing the result.
5. Drawing conclusion.

After the data from the first and second research question gathered, then it was found the correlation to answer the last research question. Because the data was interval, so the kind of correlation was person product moment. The steps were:

1. Calculating coefficient of correlation ($r^9$)

$$r_{xy} = \frac{n \sum x_i y_i - (\sum x_i)(\sum y_i)}{\sqrt{\{n \sum x_i^2 - (\sum x_i)^2\}\{n \sum y_i^2 - (\sum y_i)^2\}}}$$

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9 Sugiyono, Statistika Untuk Penelitian... 228
Where:

\( r_{xy} \) is the correlation coefficient between X and Y.

\( n \) is the size of the sample.

X is the individual’s score on the X variable.

Y is the individual’s score on the Y variable.

\( XY \) is the product of each X score times its corresponding Y score.

\( X^2 \) is the individual X score squared.

\( Y^2 \) is the individual Y score squared.

2. Developing hypothesis

**Ho**: There is no correlation between the ability of phonemic transcription mastery and the English pronunciation performance.

**H1**: There is correlation between the ability of phonemic transcription mastery and the English pronunciation performance

**Ho**: \( r = 0 \)

**H1**: \( r \neq 0 \)

3. Determining \( \alpha \)

4. Testing hypothesis
The criteria of t test:

\[ t = \frac{r_{xy} \sqrt{n - 2}}{\sqrt{1 - r^2}} \]

5. Drawing conclusion