# Chapter Three

# Methodology

This chapter discusses the method used to collect the data that equips this research. It includes the description of the research design, research setting, research population and sample, research instrument, data collection method, and data analysis. Those are explained clearly in this chapter.

## Research Design

The purpose of this research is to investigate the correlation between English as a medium of instruction and the students' speaking skill at English Education Department of UMY. Therefore, quantitative method was used by the researcher and correlational design was specifically used. Borrego, Douglas, and Amelink (2009) asserted that quantitative method is suitable for deductive approaches which the hypothesis validates the variables of the intently defined research questions. Specifically, this research used correlational design because in this research there are two related variables to see whether they influenced to each other. The researcher was demanded to "measure the degree of association (or relation) between two or more variables using the statistical procedure of correlational analysis" (Creswell, 2012, p. 21). Therefore, by using quantitative research, the researcher got several findings to show the correlation between two variables.

## Research Setting

English Education Department (EED) of UMY is the place where the study was conducted. EED of UMY provides Listening and Speaking for Academic Purposes subject which offer EED of UMY students the way to

increase their speaking skills and listening skills and they can learn it since they were in the first and second semester. Lecturers who taught that subject have the students' score of both speaking skills and listening skills, but the researcher only took the speaking skills score. Moreover, the lecturers in EED of UMY have implemented the use of English as a medium of instruction to the students. For the time, the researcher conducted this study in March to get the students' speaking score and the questionnaire was distributed in March 27 and 29, 2017.

**Research Population and Sample**

The population of this research was EED students of UMY in batch 2016. Creswell (2012) stated that "population is group of individuals who have the same characteristic" (p. 142). The researcher elected EED students of UMY batch 2016 as the population with the number of 108 students.

The researcher had several considerations in order to choose the students batch 2016 at EED of UMY. In terms of the stability of their involvement in learning speaking subjects in EED of UMY, the students had been studying Listening and Speaking for Academic Purpose subject since they were in the first and second semester and by that time the researcher was also doing this research. Then, in terms of accessibility, it made the researcher easy in seeing the participants to distribute and collect the data because the researcher is also a student at EED of UMY. Additionally, the researcher is more familiar to the participants, so the researcher can easily access the participants and in another hand, the researcher knows the EED of UMY lecturers well, so the researcher can also get in touch with the lecturers easily.

The researcher used random sampling as a strategy used to determine the required participants. According to Kriejcie and Morgan (1970) as shown in the table below that when the population is 110, the sample should minimally be 86 with 95% confident level.

**Table 3.1 Sample Taking Guidance**

| Population (N) | Sample (n) |
|---|---|
| 100 | 80 |
| 110 | 86 |
| 120 | 92 |

The total number of EED of UMY students in batch 2016 is 108. The researcher distributed 93 questionnaires to the students and those questionnaires completely came back to the researcher.

**Research Instruments**

There were two instruments which were used in this research; those are questionnaire and document. Questionnaire was the first instrument that was used by the researcher to collect the data of the first research question. Then, to collect the data of the students' speaking skills, the researcher used document which included the students' speaking skill score.

**Questionnaire**. Questionnaire in Closed Ended Format is kind of the questionnaire used in this study and it has multiple options as answer. Additionally, in this kind of questionnaire participants are just allowed to select a

single option by their feeling about the statement. The questionnaire was used to find out the frequency of using English as a medium of instruction and the questionnaires were distributed directly to the participants (face to face) in the class. Indonesian language is the language used in the questionnaire which it means to avoid any misunderstanding and the researcher self-designed the questionnaire that consisted of 16 items which were followed by four options in two components. The first component was about the frequency of using English as a medium of instruction which consisted of four options such as, never, seldom, often, and always. Strongly disagree, disagree, agree, and strongly agree were the options for the second component which was about the impact of using English as a medium of instruction. Those two components are purposed to find out the data of the first research question. The components distribution shows in table below.

**Table 3.2 The Distribution of Questionnaire Items**

| Components | Item Number |
|---|---|
| 1. The frequency of using English as medium of instruction<br>2. The impact of using English as a medium of instruction | 1,2,3,4,5,6,7,8,9,10,11<br>12,13,14,15,16 |

**Document**. Documentation technique was used to gather the data of the students' speaking skills and documentation means that the researcher asked the students' speaking scores document to relevant lecturers. The researcher gained the document from the lecturers who were teaching Listening and Speaking for Academic Purposes subject at EED of UMY. The document means the students'

speaking score which was one of assessments in Listening and Speaking for Academic Purposes subject that assessed the students' speaking skills only and the researcher who determined that speaking skills assessment.

**Validity and Reliability**

**Validity.** The researcher measured the instrument to meet the validity before the data were analyzed because the validity of the instrument items was still in consideration. Creswell (2012) stated that "validity is the degree to which all of the evidence points to the intended interpretation of test scores for the intended purpose" (p. 159). Hence, the researcher used Aiken test to measure the validity of the instrument by asking three raters or validators to do scoring in the relevancy table provided by the researcher. The table consisted of all questionnaire items which included four categories; those are not relevant (1), less relevant (2), fair (3), relevant (4), strongly relevant (5). So, through those steps can be interpreted that if index of agreement less than 0.4, the validity is weak, if among 0.4 to 0.8, the validity is medium, and if more than 0.8, the validity is strong. In addition, Aiken Test was intended to strengthen whether the questionnaire items were related to the study and the result that the questionnaire could bring the valid data. The result of Aiken Test distribution is shown in the table below.

**Table 3.3 The Distribution of Aiken Test**

| No. | rater_1 | rater_2 | rater_3 | s1 | s2 | s3 | SUM | Result | |
|---|---|---|---|---|---|---|---|---|---|
| Q1 | 5 | 4 | 4 | 4 | 3 | 3 | 10 | 0.8 | High |
| Q2 | 5 | 3 | 5 | 4 | 2 | 4 | 10 | 0.8 | High |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Q3 | 5 | 4 | 5 | 4 | 3 | 4 | 11 | 0.9 | High |
| Q4 | 5 | 4 | 5 | 4 | 3 | 4 | 11 | 0.9 | High |
| Q5 | 5 | 5 | 5 | 4 | 4 | 4 | 12 | 1 | High |
| Q6 | 5 | 3 | 4 | 4 | 2 | 3 | 9 | 0.7 | Medium |
| Q7 | 5 | 3 | 5 | 4 | 2 | 4 | 10 | 0.8 | High |
| Q8 | 5 | 4 | 5 | 4 | 3 | 4 | 11 | 0.9 | High |
| Q9 | 5 | 4 | 4 | 4 | 3 | 3 | 10 | 0.8 | High |
| Q10 | 5 | 3 | 5 | 4 | 2 | 4 | 10 | 0.8 | High |
| Q11 | 5 | 3 | 5 | 4 | 2 | 4 | 10 | 0.8 | High |
| Q12 | 5 | 4 | 4 | 4 | 3 | 3 | 10 | 0.8 | High |
| Q13 | 5 | 4 | 4 | 4 | 3 | 3 | 10 | 0.8 | High |
| Q14 | 5 | 4 | 4 | 4 | 3 | 3 | 10 | 0.8 | High |
| Q15 | 5 | 3 | 5 | 4 | 2 | 4 | 10 | 0.8 | High |
| Q16 | 5 | 4 | 5 | 4 | 3 | 4 | 11 | 0.9 | High |

After distributing the Aiken Test to the three Raters, the validity result of the questionnaire items was shown on the table above which proved that there was no weak item validity, there was only 1 medium item validity and there were 14 high items validity. Thus, it can be concluded that the questionnaire was valid.

**Reliability.** Valid questionnaire items were used to gain reliable questionnaire items and all the valid items can be considered as reliable if the Cronbach's Alpha score was higher than Alpha coefficient score. "Reliability means that scores from an instrument are stable and consistent" (Creswell, 2012,

p. 159). There were five categories of the reliability test according to Cohen, Manion, and Morrison (2011) as shown in the table 3. 4.

**Table 3.4 Category of Reliability**

| Score | Category |
|---|---|
| >0.90 | Very Highly Reliable |
| 0.80-0.90 | Highly Reliable |
| 0.70-079 | Reliable |
| 0.60-0.69 | Minimally Reliable |
| <0.60 | Unacceptable Low Reliable |

Valid items were used to get reliable items. By looking at the categories in the table above, the result of 16 valid items were considered as very highly reliable since the result of Cronbach's Alpha score was 0.969 as shown in the table below.

**Table 3.5 Reliability Test Result**

| Cronbach's Alpha | N of Items |
|---|---|
| .969 | 16 |

**Data Collection Method**

To investigate the correlation between English as a medium of instruction and the students' speaking skills at EED of UMY, two instruments were used by the researcher to collect the data. The researcher made questionnaire to gain the data of the first variable and also document to gain the data of the second variable.

The use of English as a medium of instruction was the first variable which the questionnaire was used to find the frequency. Firstly, the researcher found two components related to this study to create some items which were included in the questionnaire; those components are the frequency and the impact of using EMI so the number of the items could be seen and each component was also followed by an expert judgment. Secondly, the questionnaires were distributed by the researcher directly to the participants. By distributing face to face made the researcher easy to distribute the questionnaires which the researcher could also interact with the participants. Consequently, the researcher could manage the time and the context well.

The researcher used document technique to gain the data of the second variable which was the students' speaking skills. The researcher collected the students' speaking score which is in Listening and Speaking for Academic Purposes subject as complement data and also to signify the students' speaking skills who were being participants. The researcher asked for permission to the participants before that the researcher needed their speaking assessment score of Listening and Speaking for Academic Purposes subject and the researcher also told them that their identities were kept safely. Afterward, the researcher also asked for permission to the relevant lecturers to have the students' speaking

assessment score because the researcher could not directly gain the speaking assessment score data from the participants.

**Data Analysis**

The researcher analyzed the data after all the data were collected. The researcher used SPSS to measure the data. Descriptive statistics and inferential statistics analyses were used to find out the answer of the research questions. The descriptive statistics were used to answer the research question number one and two by considering mean, median, and mode. On the other hand, inferential statistics were used to answer the research question number three which was to find out the correlation between English as a medium of instruction and the students' speaking skills. The inferential statistics used in this research was product moment correlation via SPSS to correlate between two variables which were the use of English as a medium of instruction as the independent variable and the students' speaking skills as the dependent variable.

Analyzing the data to answer the research question number one, the researcher took a look the table frequencies made by SPSS. Then, the researcher made table of range to know the mean score by using known formula by (Cohen, Manion, & Morrison, 2011) which was the maximum scale is minus by the minimum scale then divided by the *n* category. The maximum scale was 4 and the minimum scale was 1, while the n category was 3. So the formula is 4 – 1 : 3 = 1. The result is shown on the table 3.6.

**Table 3.6 The Range of Interpretation Criteria**

| No. | Scale | Category |
|---|---|---|
| 1. | 1.00 – 2.00 | Low |
| 2. | 2.01 – 3.00 | Fair |
| 3. | 3.01 – 4.00 | High |

Analyzing the data to answer the research question number two, the researcher also took a look at the statistic table made by SPSS which included the students' speaking score. First, the researcher collected the chosen participants' speaking score to find out the maximum and minimum score. To identify the level of the students' speaking ability, the formula was the maximum score minus the minimum score and then divided by n category. Then, the researcher made 3 categories; those are poor, fair, and good, so the n category was three. Each category was followed by its each scale that was gained from the formula used.

**Table 3.7 The Categories of the Students' Speaking Skills Level**

| No. | Scale | Category |
|---|---|---|
| 1. | 3.50 – 5.50 | Poor |
| 2. | 5.51 – 7.50 | Fair |
| 3. | 7.51 – 9.50 | Good |

Before doing correlational test to find out the correlation between two variables which also means to answer the third research question, normality test

was done. Since the participants of this study were lower than 200 people, the significant level used was the significant level in Kolmogorov-Smirnov. Thus, the data was considered normal if the significant level was higher than 0.05. Afterward, the researcher correlated the two variables by using SPSS and the variable x and variable y were considered correlated to each other if the level of significant was lower than 0.05. The measurement was known as Pearson product-moment correlation coefficient (r) and in analyzing the data the researcher used analysis of bivariate correlation to determine the correlation between the two variables. Creswell (2012) stated that correlation research data have degree of association, so the association between two variables is a correlation coefficient of -1.00 to +1.00. The table is shown below.

**Table 3.8 Coefficient Correlation Interpretation**

| **Standard $r_{x,y}$** | **Interpretation** |
|---|---|
| 0.00- < 0.20 | Very weak correlation |
| >0.21 - < 0.40 | weak correlation |
| >0.41 - < 0.70 | Medium correlation |
| >0.71 - < 0.90 | strong correlation |
| >0.91 – 1.00 | Very strong correlation |