

CHAPTER III RESEARCH METHODOLOGY

3.1 Research Methods

This research aims to determine the correlation between two or more variables. In this research, the researcher uses descriptive quantitative correlation research as a research method. According to Creswell (2014), quantitative correlation research is an approach for testing the relationship among two or more variables in research (p:32). In addition, Leedy & Ormrod in Tridinanti (2018) state that the correlation occurs if two variable, the independent variable (X) and the dependent variable (Y) each increases (p:37). Therefore, it aims to determine the correlation between two or more variables. Meanwhile, in this research the independent variable is speaking ability symbolized by “X” and the dependent variable refers to anxiety symbolized by “Y”.

3.2 Population, Samples, and Sampling Techniques

3.2.1. Research Population

The population is the all subjects or element. According to Priyono (2016) Population is all unit or symptom that will investigate (p:104). In addition, Creswell (2014) states that the population is group of people that have same the characteristic (p:32). The population in this research is all eight grade students consisting of 9 classes that have 285 students at SMPN 06 Kotabumi academic year 2020/2021. This is can be seen in the table as follows.

TABLE 7
THE POPULATION OF THE RESEARCH

No.	Class	Students
1	VII A	31
2	VII B	32
3	VII C	32
4	VII D	31
5	VII E	32
6	VII F	32
7	VII G	31
8	VII H	32
9	VII I	31
total		285

Source: English teacher VII grade of SMP Negeri 6 Kotabumi

Based on the table above, the population in this research is nine classes of of the eighth grade in SMPN 06 Kotabumi academic year 2020/2021. Which is consists of 285 students.

3.2.2. Research Samples

After finding a population, samples are part of the total characteristics. According to Priyono (2016), sample is parts of population that will investigated (p:104). In addition, Andita (2019) states that the sample is considered as a representative of the population (p:5). A large population do not allow researcher to investigate everything of the population, for example due to limited funds, resource, and time so that researcher can use samples take to represent that population.

3.2.3. Sampling Technique

According to Andita (2019) sampling technique is said to be simple because of the taking of sample members from within that population (p:5). The sampling technique uses in this research is proportional random sampling technique. According to Priyono (2016), random sampling is the sampling that can be taken with lottery or choosing numbers from the random number list (p:107). Not all of the second grade students become the sample in this research. As stated by Arikunto (2010) if the subject is less of 100, it is better to take all the subjects, but if the subject is big population (more than 100), the researcher can take between 10% - 15% or 20% -25% or more (p:177).

Based on the theory above, this study takes 10% of the populations. It means that 10% x population in each class. The class consists of nine classes. To choose the subjects in every class, it is used random technique. The calculation of sampling in this research as follow.

TABLE 8
THE SAMPLE OF THE RESEARCH

No	Nama	Students	Totasl
1	VII A	32 x 10%	4
2	VII B	32 x 10%	4
3	VII C	32 x 10%	4
4	VII D	31 x 10%	3
5	VII E	32 x 10%	4
6	VII F	32 x 10%	4
7	VII G	31 x 10%	3
8	VII H	32 x 10%	4
9	VII I	31 x 10%	3
	Jumlah	285	33

Based on the table above, the total samples of this research are 33 students from nine classes. In every class the researcher takes 3-4 students in each class. So, the amount of the sample is 33 students. Every student must do the test; they are anxiety and speaking test.

3.3 Research Instruments

Research instrument is a tool for researcher in using data collection methods. In addition, Sugiyono (2017) states that research instrument is a tool used to measure natural and social phenomena observed and specifically this phenomenon is called a research variable (p:102). Research instrument is the tool to collect the data. The instruments used for speaking is oral test. This instrument is a tool which is used to measure the speaking ability. The topic of the test is about descriptive text. The students will choose one of the picture that given by the teacher and they will describe the picture using they own words. The second instrument is in the form of questionnaire. It is used to measure anxiety. The instruments of the research are used to know speaking ability about the anxiety in speaking. The subject of instrument is eighth grade of students SMPN 6 Kotabumi.

3.3.1 The Concept of Speaking Abilities

a. Conceptual Definition of Speaking Ability

Conceptual definition of speaking is the result which shows the progress in developing and mastering a process of communication, delivering messages with using words to express their thoughts, ideas, and feelings to someone in the form of oral production either through face to face or at a distance.

b. Operational Definition of Speaking

The operational definition of students' speaking is a score or data used to measure students' speaking abilities. To get data on speaking achievement, researcher uses a speaking test. After that, students' speaking ability will be assessed based on several components and speaking criteria. They are comprehension, pronunciation, grammar, vocabulary, understanding, and fluency. The scoring system is from the highest score which is 5 in each aspect so maximal score from the 5 aspects is 25. Then the total score is as follows:

$$\text{Total} = \frac{\text{Total score} \times \text{Students' Score}}{\text{Total Score}} \times 100$$

c. Instrument Specification of Speaking Ability

Based on the concepts of conceptual definition and operational definition above, the specifications of speaking task and the instrument can be viewed in the following table:

TABLE 9
INSTRUMENT SPECIFICATION OF SPEAKING
PERFORMANCE ASPECT

Aspect	Indicator	Score
Comprehension	Students delivery their speaking with slowed speech	1
	Students have not able to require no specialized knowledge	2
	students comprehension is quite complete at a normal rate of speech.	3
	Students understand any conversation within the range of their experience	4
	Students Equivalent to native speaker.	5
Vocabulary	Students' vocabulary inadequate to express their ideas	1
	Students' delivery their vocabulary sufficient to express their ideas	2
	Able to speak the language with sufficient vocabulary to participate effectively	3
	Students can understand and participate in any conversation within the range of his experience	4
	Students able to speech on all level is fully accepted by native speakers in all its features	5
Pronunciation	Students do the Errors in pronunciation are frequents	1
	Students' accent is intelligible though often quite faulty	2
	Students' errors never interfere with understanding and rarely disturb the native speaker	3
	Students have an Errors in pronunciation are quite rare	4
	Students' Equivalent and fully accepted by educated native speakers	5
Grammar	Students' errors in grammar are frequent	1
	Students does not have thorough or confident control of the grammar	2

	Students' control grammar is good	3
	Students' errors in grammar are quite rare	4
	Students equivalent to that of an educated native speaker	5
Fluency	Students cannot handle their confident	1
	Students can handle with confidence but not with facility most social situations	2
	Students rarely has to grope for words.	3
	Students able to use the language fluently orally.	4
	Students has complete fluency in the language	5

3.3.2 Research Instrument of Anxiety

a. Conceptual Definition of Anxiety

Anxiety is a feeling where the people uncertain or hesitate with their ability. It can be described that someone having high level anxiety, so they feel unconfident and cannot get maximum of their learning process.

b. Operational Definition of Anxiety

Anxiety is a feeling where the students uncertain or unsecure with their ability. It is the students' ability can be seen from the score obtained from the questionnaire which is adapted from Foreign Language Classroom Anxiety Scale (FLCAS), developed by Horwitz that measured from 3 aspects: communication apprehension, test anxiety, and fear of negative evaluation which. For more details the score, the scale of foreign language anxiety is presented in the following table:

TABLE 10
SCORING SYSTEM OF QUESTIONNAIRE

NO	Scale	Positive Statement Score(+)	Negative Statement Score(-)
1	Strongly Disagree	1	5
2	Disagree	2	4
3	Neutral	3	3
4	Agree	4	2
5	Strongly Agree	5	1

Source: Mayangta in Juwitawati(2018:602)

c. Instrument Specification of Anxiety

The instrument of anxiety is using the form of questionnaire. For the questionnaire, the researcher adapted from Foreign Language Classroom Anxiety Scale (FLCAS), developed by Horwitz in Albar (2017:43). For more details the score, the scale of foreign language anxiety is presented in the following table:

TABLE 11
THE INSTRUMENT SPECIFICATION OF ANXIETY

No	Research Variable	Aspects	Indicator	Total Items	Number of Postive Statement	Number of negative Statement
1	Anxiety	Communication Apprehension	The students have lack communicating skill and felt shy, afraid, uncomfortable to communicating in front of class or with others people.	8	17, 20, 22, 23, and 24	4, 13, and 16
2		Test Anxiety	The students are can to felt tremble, nervous, and have lack self-confident when they fail in facing the test speaking.	10	19 and 21	1, 2, 3, 5, 7,8, 12, and 15
3		Fear of Negative Evaluation	The students able to evaluate and know the negative feeling which is can be effect in performance or their	7	18 and 25	6, 9, 10, 11, and 14

No	Research Variable	Aspects	Indicator	Total Items	Number of Postive Statement	Number of negative Statement
			learning process			
Total				25	9	16

Source: Horwitz in Albar(2017:43)

Based on the table there are 25 item instrument that will using the form of questionnaire anxiety. First aspect Communication Apprehension in positive statament were 17, 20, 22, 23, and 24 and negative statement were 4, 13, and 16. The second aspect test Anxiety were 19, 21 and negative statement were 1, 2, 3, 5, 7,8, 12, and 15. Then, the last aspect Fear of Negative Evaluation in positive statement were 18, 25, and negative statement were 6, 9, 10, 11, and 14.

3.3.3 Validity and Reliability of Research Instrument

1. Validity and Reliability of Speaking

a. Validity of Instrument

Validity means how far the accuracy of a measuring instrument is really measured. According to Bannigan (2009), the instrument which has validity is the instrument which can be used to measure what should be measured (p:3240). Bannigan (2009) states that Validity is the degree of determination of an instrument (p:3238). The validity uses in this research is the construct validity. According to Bannigan (2009) construct validity which includes of convergent, divergent, factorial and distriminant validity (p:3238). Thus, in order to get construct validity of the test instruments oral test. The researcher will use the opinions from expert or it usually called as expert's judgment. In this case, the researcher uses the judgment from the experts. The way was the researcher

consulted on aspects of the instrument, and then the researcher asked the opinion of both experts about the instrument that has been made. The Experts of this research is lucture of English Department which is Mrs. Dewi Sartipa and Mrs. Dewi Sri Kuning.

b. The Reliability of Instrument

Reliability is that something can be reliable enough if the instrument can used as a tool to collect the data in different places and times and still show the similar results. According to Bannigan (2009), reliability is consistency of measurement or how far the measurement can measure the same subject in different times but shows the similar result (p:3239). In this research, the researcher will use inter-rater reliability. Furthermore, the researcher will collaborate with the teacher of the research sample. The researcher will give the try out to students in the eighth grade of SMPN 02 Bungamayang, because they are not the sample in this research.

According to Azwar (2012) limitation of difference analyzed the result between rater is about 0.0 - 1.0 (p. 13). If the reliability coefficient is getting about 0.0 - 1.0, it means that there is consistency between the rater and the test is reliable.

In contrast, if the reliability coefficient is gotten more than 1.0; it means that there is an inconsistency between rater, and the test cannot be said reliable.

According to Azwar (2012), the formula to estimate inter-rater reliability that is done by raters toward n subjects is as follow (p:90):

$$r_{xx'} = \frac{(S_s^2 - S_e^2)}{S_s^2}$$

Notes:

- $r_{xx'}$: Coefficient reliability X
 S_s^2 : Variance between subjects that is influenced by rating.
 S_e^2 : Variance error is variance interact between subject and rater.

The formulas calculate S_e^2 and S_s^2 as follow:

$$S_e^2 = \frac{\sum i^2 - (\sum R^2)/n - (\sum T^2)/K + (\sum i)^2/nK}{(n-1)(K-1)}$$

$$S_s^2 = \frac{(\sum T^2)/K - (\sum i)}{n-1}$$

Notes:

- i = rating number that is given by rater to a subject
T = the number of ratings that is received by a subject to all rater
R = the number of ratings that is given by rater to all subjects
n = the number of subject
k = the number of rater

The measurement results that have a reliability coefficient are $\geq 0,70$ said to be reliable in the sense that the instrument can be used to make measurements.

2. Validity and Reliability of Anxiety

a. Validity of Anxiety

In this research the researcher measure the validity of the questionnaire test with use are construct and content validity. Firstly, the method used by researcher in testing the validity of anxiety is used construct validity which is calculated by the Expert Judgment. The way is the researcher consulted on aspects

of the instrument, then the researchers asked the opinion of both experts about the instrument that has been made by Mrs. Dewi Sartipa and Mrs. Dewi Sri Kuning. The second, after the construct is completed, the researcher used the method to measure the content validity of the test is calculated with the *Product Moment Formula* (Arikunto, 2010, p.213). The formula is as follows:

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{\left\{ \left(N \sum x^2 - (\sum x)^2 \right) \left(N \sum y^2 - (\sum y)^2 \right) \right\}}}$$

Description:

r_{xy}	= Correlation coefficient of variable X and Y
$\sum xy$	= The sum of the products of X and Y
$\sum X$	= The sum of X scores
$\sum Y$	= The sum of Y scores
$\sum X^2$	= The sum of square of X scores
$\sum Y^2$	= The sum of square of Y scores
$(\sum X^2)$	= The sum of squared X scores
$(\sum Y^2)$	= The sum of squared Y scores
N	= The number of respondent

The testing criteria were if $r_{\text{observed}} \geq r_{\text{table}}$ it clear that (H_0) is rejected and

(H_a) is accepted. The criteria of the validity of the anxiety test are:

- a. H_0 is accepted if $r_{\text{observed}} \leq r_{\text{table}}$ (the data are valid)
- b. H_0 is rejected if $r_{\text{observed}} > r_{\text{table}}$ (the data are not valid)

b. Reliability of Anxiety

Reliability is consistency of measuring instrument or how far the instruments can be measured the same subject at different times but show relatively similar result In order could be get the data from questionnaire was reliable, the

researcher will be used reliability analysis based on Alpha Formula (Arikunto, 2010:196):

$$r_{11} = \left(\frac{k}{(k-1)} \right) \left(1 - \frac{\sum \sigma_b^2}{\sigma_t^2} \right)$$

Description:

r_{11} = coefficient of reliability

k = number of items or number of questions

$\sum \sigma_b^2$ = number of items variance

σ_t^2 = total variance

3.4 Data Collecting Techniques

In this research, the researcher used questionnaire to collect the data of anxiety and speaking test to collect the data of speaking ability by oral test.

3.5 Data Analysis Techniques

In this research, the data analysis techniques used is inferential statistical techniques in the form of parametric statistics. Before the data analysis technique is carried out, then a prerequisite test is used to check the normality and homogeneity tests.

3.5.1. Prerequisite Test

Before beginning the test, the hypothesis has done in the first prerequisite test. The prerequisite test carried out to find out the data obtained with a normal and homogeneous distribution.

a. Normality test

Normality test used to know that the data is normally distributed or not. In this study, the data must be normally distributed. According to Sudjana (2005) the formula of Lilliefors' is appropriate to measure the normality of the data (p. 466). The steps are:

- a. Determine the standard number used the formula

$$Z_i = \frac{X_i - \bar{x}}{S}$$

Notes:

Z_i = Raw Number

X_i = The values obtained

\bar{x} = The Mean

S = Standard Deviation

- b. Opportunity determines each raw numbers with the formula:

$$F(z_i) = p(z \leq z_i)$$

- c. Determine the proportion using the formula:

$$S(z_i) = \frac{\text{total } Z_1, Z_2, Z_3, \dots, Z_n \text{ which is } \leq Z_i}{n}$$

- d. Calculate the absolute number using the formula:

$$F = |(z_i) - S(z_i)|$$

- e. Determine the largest absolute value which is call L_{observed} , then compare the L_{observed} with L_{table} . The normal criteria is; H_0 is accept if $L_o < L_{\text{table}}$ (the data has normal distribution).

b. Homogeneity Test

Before the data is processed, it needs to be analyzed whether the samples taken are homogeneous or not. To test the homogeneity of two groups it uses similar test of two variances. Two variance of common test used to determine whether both data are homogeneous. The requirement for homogeneous test is that both data have normal distribution.

The formula of homogeneity test according to Arikunto (2010:363) is as follows:

$$F_{\text{observed}} = \frac{\text{The Highest Variance}}{\text{The Lowest Variance}}$$

The testing criteria are: $H_0 : H_0$ is accepted if $F_{\text{observe}} \leq F_{\text{table}}$ the variances of the data is homogenous (Sugiyono. 2017, p.197).

c. Hypothesis Test

After the data was provided to have normal distribution and homogeny, for analyzing the correlation between anxiety and speaking ability, it is used parametric analysis. To measure the hypothesis test, the researcher used Product Moment Correlation formula. According to Arikunto (2010), the formula to measure the hypothesis is as follows (p.318):

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

Notes:

r_{xy} : Coefficient of correlation
 N : Total sample
 xy : Total x and y

- X : Independent variable
 Y : Dependent variable
 X^2 : The sum square of x variable
 Y^2 : The sum square of y variable

Because $r_{.xy}$ only shows about coefficient or correlation, to find out the significance test, it was used t-test. The formula of t-test according to Sugiono (2017:184) is as follow:

$$t\text{-test} = \boxed{t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}}$$

Notes:

- t : t calculation that get from T table
 r : The result of correlation between two variable
 n : The total of sample

The test criteria are as follows:

If t_{observed} is greater than the t_{table} at the significance level of < 0.05 , the correlation is significant. Based on the formula of hypothesis test, the hypothesis in this research will be proven:

H_0 : There is no significant correlation between speaking ability and anxiety at the eighth grade students of SMPN 6 Kotabumi Academic Year 2020/2021.

H_a : There is significant correlation between speaking ability and anxiety at the eighth grade students of SMPN 6 Kotabumi Academic Year 2020/2021.