

## **CHAPTER III**

### **RESEARCH METHOD**

In this chapter, the researcher describes the research method as a scientific way to obtain data with a specific function and purpose. Consists of research design, research setting, participant, population and sample, technique of data collection, data analysis techniques, and technique measurement of data analysis.

#### **A. Research Design**

The researcher used mixed methods research combining qualitative data and quantitative data as well. Qualitative method in this research dominated the research methodology, because the researcher used documentation and observation as instrument data collection, and the data were changed into transcript, typically characteristic of qualitative method. This research also used statistical program which is numbers, percentage as the result, typically characteristic of quantitative method. This was needed to provide complete research and valid finding result.

This study uses a research approach that combines quantitative descriptive and qualitative descriptive which is called mixed methods. Mixed methods research is an approach to combining two research methods, qualitative and quantitative to collect data, integrating the two forms of data using different designs which may involve philosophical assumptions and theoretical frameworks. This combination provides a more complete understanding. Data with questions as the initial data source and quantitative descriptive approach analysis. Then the results of the

analysis are continued by strengthening the qualitative data which is then followed by a qualitative analysis.

## **B. Research Setting**

This research took place at SMPN 3 Sungai Pandan. It was located in Jl. Banyu Tajun Pangkalan Sari, Sungai Pandan, Hulu Sungai Utara, Kalimantan Selatan. The researcher chose to conduct research on ninth grade students of SMPN 3 Sungai Pandan because the summative test scores of the ninth graders of SMPN 3 Sungai Pandan based on the results of the exams conducted in the previous school year have low scores. Personally, the researcher considers it is very important for the students themselves in continuing their education to the high school level. On the other hand, the principal and the teacher concerned accept research activities, especially for the benefit of all parties involved in the future.

## **C. Data Sources**

The subject of this research is 25 multiple choices of summative test items for English subject at SMPN 3 Sungai Pandan on academic year of 2020/2021. The object of this research is ninth grade of SMPN 3 Sungai Pandan at Hulu Sungai Utara regency on academic year of 2020/2021. This study describes how the validity and reliability of summative test items for English subject at SMPN 3 Sungai Pandan on academic year of 2020/2021.

#### **D. Technique of Data Collection**

To collect the data, the researcher visited the school to ask for the documents such as paper test question or the English summative test items, answer sheets and answer key of the summative test items of English subject for ninth grader of SMPN 3 Sungai Pandan to be analyzed, and include analysis and interview.

##### **1. Documents**

Based on Sugiyono (2018), he states that documents are a method used to obtain data and information in the form of books, archives, documents, written figures and pictures in the form of reports and information that can support research (p. 476). In this study, the researcher used primary data documents to answer the research questions, which are divided into paper test questions or the English summative test items, answer sheets and answer keys.

##### **a. Paper Test Question**

It consists of 25 questions in the form of multiple choice. The test package was taken from an English summative item test for ninth grade students of SMPN 3 Sungai Pandan.

##### **b. Answer Sheets**

This answer sheet is used to determine the distribution of answers. They were analyzed to find out the validity and reliability to answer the problem statement.

### c. Answer Key

The answer key is a guideline for answering a test in order to find out the accuracy of the answers chosen by students. This answer key is used as a valid guide in assessing each item.

## 2. Analysis

In this research, before all the collected data reported, the researcher analysis them descriptively and quantitatively. It is to describe the validity and reliability of the summative test items of English subject for ninth grader of SMPN 3 Sungai Pandan objectively into a description by classification which is based on the analysis of the test.

## 3. Interview

Interviewing based on Fox (2009) is an important data collection technique that involves verbal communication between the researcher and the participants (p. 4). Interviews can be conducted in a variety of ways, ranging from fully unstructured ones in which participants are free to talk about whatever they choose to highly organized ones in which participant replies are confined to answering direct questions. In this research, the researcher has interviewed several relevant competent people such as the principal, the team of English summative items test constructors, and the student's administration center staff to obtain secondary data.

## **E. Data Analysis**

Data analysis is a method of placing facts and figures to solve research problems. It is very important to find answers to research questions. Another important part of the research is the interpretation of the data, which is taken from analyzing the data and making inferences and drawing conclusions. Often it becomes difficult to conclude the raw data, in this case, according to Ahuja (2001), he states that the data must be analyzed and conclude the results of the analysis. In this research, the researcher used technique of data processing, such as:

### **1. Editing**

This technique is used to check all the collected data to ensure whether it is complete or not. In this research, the researcher collect data from paper test questions or English summative test questions, answer sheets, answer keys and so on related to the research that has been carried out as a research instrument.

### **2. Classification**

This technique is used to classify the collected data by type. In this study, the researcher classified the data with calculated data and measuring data collected from the results of percentage calculations or showed a measure of the validity and reliability value of the summative test item.

### **3. Tabulating**

The researcher arranges and puts the data into tables to make it easier to interpret and analyze the data. In this research, the researcher made a table from the results of the validation test and reliability test.

### **4. Data Interpretation**

Data interpretation is needed to describe the significance of the data. In this research, the researcher describes the significance of the data in accordance with the results of the validity and reliability tests that have been carried out.

#### **F. Technique Measurement of Data Analysis**

The researcher explains the data analysis technique in separation based on the researcher questions:

To facilitate the organization and analysis of data processing, the researcher compiled a design for measuring the validity and reliability, as follow:

1) According to Arikunto (2010) state that validity is a measure that shows the levels of validity or validity of an instrument. Researcher in testing the validity of each item using the SPSS 26.0 software program. The items criteria are said to be valid or not depending on the results of the SPSS output seen in the correlation value compared to a significant level of 5% or 0.05. If  $r_{\text{count}} > r_{\text{table}}$  then the item can be said to be valid and if  $r_{\text{count}} < r_{\text{table}}$  then the item can be said to be invalid (p. 211).

Based on Arikunto (2013) as for identify the validity of the test item can be found by using the formula (p. 169):

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

$r_{xy}$  : Correlation coefficient

$\sum X$  : sum of X

$\sum Y$  : sum of Y

N : Number of cases

If this instrument is valid, it can be seen from the interpretation criteria regarding the correlation index (r). For more details, the researcher provides a table that provides a brief description of the interpretation criteria regarding the correlation index (r) of each item.

<b>Table 3.1</b>	
<b>Correlation Validity</b>	
<b>Correlation Coefficient</b>	<b>Description</b>
0,00 – 0,199	Very Low
0,20 – 0,399	Low
0,40 – 0,599	Sufficient
0,60 – 7,999	Good
0,80 – 1,000	Very Good

2) According to Arikunto (2013) states that reliability shows an understanding that an instrument can be trusted to be used as a data collection tool because the instrument is good. To determine the reliability of the instrument in the form of multiple-choice questions in this study, the SPSS 26.0 program was carried out using Cronbach's Alpha testing. For an instrument in the form of reliability, it is declared reliable if the Cronbach's Alpha value obtained is at least 0.60 (p. 221).

According to Arikunto (2013) as for identify the reliability of the test item can be found by using the formula (p. 231):

$$r_{11} = \frac{2xr_{1\frac{1}{2}}}{(1+r_{1\frac{1}{2}})}$$

$r_{11}$  : Instrument reliability

$r_{\frac{1}{2} \frac{1}{2}}$  : The result of validity ( $r_{xy}$ )

To give an interpretation of the reliability of the instrument, it can be seen from the criteria for testing the reliability of the instrument. For more details, the researcher provides a table that provides a brief description of the criteria for testing the reliability of the instrument for all items.

<b>Table 3.2</b>	
<b>Instrument Reliability Testing Criteria</b>	
<b>Item Reliability</b>	<b>Description</b>
$R_{11} < 0,20$	Very Low Reliability
$0,20 < r_{11} 0,40$	Low Reliability
$0,40 < r_{11} 0,70$	Sufficient Reliability
$0,70 < r_{11} 0,90$	High Reliability
$0,90 < r_{11} 1,00$	Very High Reliability