

CHAPTER III

RESEARCH METHOD

This chapter presents research method which consists of research design, population and sampling, research instrument, data collection, and technique of data analysis.

3.1 Research Design

Based on the research objective, this study investigates the effectiveness of WhatsApp on the students' reading ability and their motivation. To answer the research questions, the study used a quasi-experimental design two group pre-test and post-test. Based on Ary et.al (1979) the research design of the study can be summarized as follows:

Group	pre-test	independent variable	post test
Ex	Y1	X	Y2
Ct	Y1	-	Y2

Where:

Ex : experimental group

Ct : control group

Y1 : represent pre test

Y2 : represent post test

In this case, the researcher took the existing class, that VII C and VII D in MTs Salafiyah Margomulyo, Kerek District, in Tuban Regency, since the classes get four hours a week for English.

At the beginning of the experiment, the subjects were given a pre-test to investigate the initial reading comprehension ability. Then, the researcher gave motivation questionnaire to the students after the treatment to know the students motivation after they are taught using WhatsApp.

3.2 Population and Sampling

The population of this research was sixty two students of seventh grade of MTs Salafiyah Margomulyo Tuban. The students include in two classes. In choosing the subject, the researcher uses purposive sampling. The researcher choose class VII C and VII D as the subject of this study since the classes get four hours a week for English. The students in the classes are active and responsive, so the experimental and the control group, the researcher used lottery.

3.3 Research Instrument

The researcher used reading test and motivation test as the research instrument since this research was to investigate the effectiveness of using WhatsApp on the students' reading comprehension and motivation.

3.3.1 Reading Test

The students' reading comprehension was measured through their achievement as part of a given course (Nunan,1991). To measure the students'

reading comprehension, the researcher created a reading test consisting 25 items of objective test. In relation to the English syllabus for seventh grade of Junior high school, the researcher used one text type that was Descriptive text.

In developing and constructing a test, the researcher validated the test, tried out the test, analyzed the result of the try out test, item difficulty, item discrimination of the test, the reliability of the test, and revises the test items.

3.3.1.1 Developing and Constructing a Test

In constructing test items, the researcher took one text type from syllabus for second semester. In second semester, there was only one reading text type. The text was descriptive text. The text was unseen text. It means that the teacher did not give the reading text in the class. So, the students accepted the new reading material. By giving new texts, the researcher could measure the real performance of their reading ability.

3.3.1.2 Validating the test

The researcher tried to conduct the construct and content validity. The construct validity is the validity concerned with the theoretical construct. The test is regarded to have construct validity if the items of the test measure each of thinking aspect from the variable. While content validity is related to the coverage of materials would be measured and the materials are covered in the syllabus.

Moreover, validating the construct validity was done by analyzing the objectives of the test and the type of the test in which the students were asked to do the task. In this case, the researcher gave reading test since the researcher wanted to

measure the students' reading ability. After reading the text, the students were asked to answer the questions measuring their comprehension achievement.

On the other side, content validity is concerned with the coverage of the materials being tested. Validating content validity is done by analyzing the content of the test and the materials required in English syllabus of the seventh grade. The purpose of analyzing is whether the content of the test represent the reading materials in English syllabus.

The description of the test items used in the reading comprehension test can be clearly seen in the following table.

Table 3.1: Description of Reading Comprehension Test

Objective of the Test	Types of Comprehension	Specific Objective	Number of Question	Item Number
To evaluate students' reading comprehension of the text they read	Literal comprehension	<ul style="list-style-type: none"> • Finding specific information • Finding synonym • Finding reference 	10 4 4	1,2,4,7,9,12,13,14,16,22 3,8,19,24 10,15,20,23
	Inferential comprehension	<ul style="list-style-type: none"> • Determining generic structure • Finding main idea • Finding the purpose of the text • Finding the topic 	2 1 1 3	5,25 1 6 11,17,21

3.3.1.3 Trying Out Test

Before conducting the test, the researcher had tried out the test to get the evidence whether the test can be used as the research instrument or not. The result of the try out test was used to check the item difficulty, the item discrimination, and the reliability of the test. The researcher chose the students who have learned descriptive text.

In conducting a try out, the researcher chose the students who had already learned reading material of descriptive text for seventh grade. Therefore, the students of the tried out test were at least those who had got descriptive text before. Based on the consideration, the researcher chose students of VII A as the subject of the try out. The try out was conducted on 28th of March 2019.

3.3.1.4 Analyzing the Result of the Try Out

In analyzing the try out test here, the researcher used item analysis. This was conducted to obtain a reliable research instrument. The result of the analysis was used to make revision. Brown (1996) stated that item analysis is the systematic evaluation of the effectiveness of the individual item of a test. Analyzing is conducted to obtain the good test items or to revise the items. Analyzing was carried out in terms of item difficulty, item discrimination, analysis of distractors, and the reliability index of the test result.

3.3.1.5 Item Difficulty of the Test

The good test item is the item which is not too easy or difficult. Too easy test item can't encourage the students to solve it. Too difficult test item causes the

students reluctant to finish it since it is beyond their ability. Good test item is test item which has moderate criteria. Item difficulty which is often called item facility or facility of the test is a statistical index used to get the percentage of the test items which is correctly answered by the students. The percentage indicates the category level of the test items. Djiwandono (2008) explains that counting the reliability can be done through prediction of the number of test item, the average score and standard deviation. To get the reliability of the test, the researcher determined the difficulty level. It is the division of the number of correct answer and the number of test takers. The formula is as follows:

$$P = \frac{\text{the number of correct answer}}{\text{The number of test takers}}$$

The criteria of difficulty level is as follows:

Table 3.2: The Criteria of Difficulty Level

Difficulty level score	Criteria
0.71 – 1.00	Easy
0.31 – 0.70	Moderate
0.00 – 0.30	Difficult

(Arikunto, 2008)

The calculation of item difficulty can be seen in Appendix 1. The result item difficulty computation is described on the following table.

Table 3.3: The Result of Item Difficulty Computation

No	Number of item	total	Classification
1.	1,2,4,7,8,9,11,12,14,16	10	Easy
2.	3,5,6,10,13,15,17,18,19,20,21,22,23,24,25	15	Moderate

3.3.1.6 The Reliability of The Test

Reliability is one of the characteristics of a good test. Reliable test is the test which can give consistent result. It means that the test have the same result when it is given to any different situations. Reliability measures the consistency of the test. That's why in this study, the test which is used as the instrument of the research must be reliable. In this case, the researcher used SPSS reliability analysis to determine the reliability of the test. The criteria of the reliability is as follows:

Table 3.4: The Criteria of Reliability

Correlation Coefficient	Criteria
0.80 – 1.00	Very high
0.60 -0.79	High
0.40 - .059	Adequate
0.20 -0.39	Low
0.00 – 0.19	Very Low

(Arikunto, 2008)

The result of reliability of test can be seen in Appendix 2. Based on the result of reliability calculation using SPSS, it showed that the result is 0,891. It means that the reliability can be categorized as very high category.

3.3.1.7 Discrimination Power

Another criteria in which the test should have is discrimination power. Discrimination power is the ability of test item to differentiate good (high ability) students with bad (low ability) students (Arikunto:2008). The score which shows discrimination power is called discrimination index. Discrimination index ranges between 0.00 to 1.00. there is minus (-) sign in discrimination index. It means the test item is reversed. In this case, the good students give the wrong answers for that test item while the bad students give the correct answer. Discrimination power can be calculated with the following formula:

$$DP = \frac{U - L}{\frac{1}{2} T}$$

Explanation:

DP : Discrimination Power

U : number of good students which answer correctly for each item

L : number of bad students which answer correctly for each item

T : number of good and bad students

The criteria of discrimination power is as follows:

Table 3.5: The Criteria of Discrimination Power

Discrimination Power	Criteria
0.71 – 1.00	Very good
0.41 – 0.70	Good
0.21 – 0.40	Moderate
0.00 – 0.20	Bad

The result of Discrimination power calculation can be seen in Appendix 3.

3.3.1.8 Revising the Test Item

The final step of constructing the reliable test is revising the items of the test based on the result of analysis test items. Reliable instrument will produce reliable data. Therefore, analyzing test items was important step before revising the test items. The purpose of revising test items is that is to get the valid and reliable test items in order to get the valid and reliable data.

3.3.2 Motivation Test

The test is arranged based on the theory of motivation proposed by Robert Gardner (1985) which is known AMTB. It includes. To develop the questions, some components and subcategories are listed by adapting AMTB motivation theory proposed by Gardener (1985). There are three components in the test. The first components consists of three categories, the second component consist of two subcategories and the third component consists of three subcategories. 25 items of

statements are listed in the test. The test uses 4 points Likert Scale to measure students' motivation which range from strongly disagree = 1, disagree = 2, agree=3, strongly agree=4.

The motivation questionnaire used in this study was adapted from the AMTB questions which proposed by Gardner (2004) in English version then translated by the researcher. The AMTB was properly used by the theorist in some countries such as Brazil, Japan, Poland and Spain. However, the item of questions had been validated by the users by the students to validate it. The researcher distributed the questionnaire and made some lists of the questions which made students confused. Based on the result of the users' validation, the questions in the questionnaire were easily understood by the students, but the lay out was not interesting and made them boring. Therefore, the researcher changed the layout of questionnaire in form of table.

3.4 Data Collection

The data of this study is in the form of score is representing the students' achievement in reading ability and the scores of students' motivation. The researcher will conduct pre-test and post-test to both of the groups. The pre-test is used to examine the initial mastery of students' reading ability for both of the groups before the treatment and to know whether the experimental and control groups are statistically comparable. After that, the researcher conducted the treatment that is experimental group was given material by using WhatssApp and the control group would be taught by using non-WhatsApp media.

The next step is administering the post-test and questionnaire of motivation for both groups. The score of post-test and the result of the questionnaire were clear picture of the research problem which needs the answers as whether WhatsApp is effective in improving students' reading ability and motivation.

3.5 Technique of Data Analysis

The technique used in analyzing data of this study is descriptive and inferential analysis. The descriptive analysis was used to know the mean and standard deviation of the students' score in reading. Furthermore, to test the research hypothesis, inferential analysis was used. Testing hypothesis was conducted in order to manage the research data which were in the form of numbers, so that they could produce a real conclusion. It was also used to test whether the hypothesis of the research was accepted or rejected.

To prove the hypothesis of the research, the researcher analyzes the data statistically using SPSS. For analyzing the mean score of reading test, and motivation, the researcher uses Kruskal-Wallis . Kruskal-Wallis testing is a kind of Nonparametric Statistic test. It is used to compare independence with not normally distributed ordinal or interval scale (Uyanto,206:331).

The criteria of Kruskal Wallis test are:

If Sig.<0.05, Ho is rejected

If Sig. > 0.05, Ho can not be rejected

Before computing the data by using Kruskal-Wallis, the data with interval scale is transformed into ordinal scale. The following table is the point scale to transform the interval scale to ordinal scale.

Table 3.5.1: Point Scale of Reading Comprehension

Point Scale	Score	Ordinal Scale
Excellent	81-100	4
Good	65-80	3
Fair	50-64	2
Poor	0-49	1

Table 3.5.2: Point Scale of Motivation

Point Scale	Score	Ordinal Scale
High Motivated	81-100	4
Motivated	65-80	3
Low Motivated	50-64	2
Unmotivated	0-49	1