CHAPTER 3

RESEARCH PROCEDURES

3.1 Research Method

The method used by the researcher is the experimental method. Sugiyono (2013) stated that experimental method is a method that researchers could utilize to determine how an independent variable affect a dependent variable. In this study, the pre-experimental method is utilized to determine the effect of using the Jigsaw method on students' reading comprehension in an EFL classroom.

3.2 Variables of the Research

Variables are objects that are the focus of research. According to Best & Kaln (1986) in Oyebanji (2017), variables are the conditions or features that the experimenter manipulates, controls, or observes. In addition, according to Sugiyono (2013), research variables are everything that the researcher decides to study in order to learn more about a subject, and then make conclusions. There are two variables in this research:

1. Independent Variable

An independent variable is a variable that can affect another variable. According to Oyebanji (2017), an independent variable is an input variable that contributes to a specific output, either entirely or partially. It is a stimulus that affects a reaction, an antecedent, or a factor that may be changed (for instance, under experimental or other conditions) to affect an outcome. The independent variable in this research is the use of the Jigsaw method, symbolized by X.

2. Dependent Variable

A dependent variable is a variable that is influenced by the independent variable. The outcomes or results of the effect of the independent factors are known as dependent variables since they are

those that rely on the independent variables. Dependent variables can also be referred to as criteria, outcomes, or effect variables. (Creswell, 2014). The dependent variable in this study is students' reading comprehension, symbolized by Y.

3.3 Research Design

In this study, the researcher used a one-group design. According to Fraenkel et al. (2009), in a one-group research design, one group is measured or observed both before and after treatment. It means, in this study the sample is given a test before and after treatment. The pre-test is used to determine students' reading comprehension before being given treatment with the Jigsaw method, and the post-test is used to determine their reading skills after being given treatment. The research design in this study is as follows:

Y1	X	Y2
(Pre-test)	(Treatment by using the Jigsaw method)	(Post-test)

3.4 Population and Sample

1. Population

Population is a set of data or information that can be utilized to create a sample. Ary et al. (2010) defined a population as all members of a clearly defined class of individuals, occasions, or objects. Eighth grade students from one of the junior high schools in Tasikmalaya, which has 293 students across 11 classes, make up the population of this study.

2. Sample

The sample is part of the population that participates in the research. A sample is a number of people, things, or objects drawn from a huge population for a measurement (Mujere, 2016). It means the sample is a smaller part and is representative of the population.

The sample in this study is class VIII-J students from one of the junior high schools in Tasikmalaya, totaling 26 students and the sampling technique used is convenience sampling. Dornyei (2007) in Etikan et al. (2016) stated that convenience sampling is a form of nonprobability sampling in which study participants are selected for inclusion based on practical factors such as ease of accessible, close the area, availability at a specific time, or willingness to participate. Therefore, this sample was chosen because the sample was willing to participate and could be researched at the time determined by the researcher.

3.5 Data Collection Technique

In this research, the data collection technique was a test. Tests in the form of multiple choice questions to measure students' reading comprehension are given before and after being given treatment. Test is a technique for determining a person's aptitude and knowledge performance in a certain area, and the technique must be explicit and systematic, such as with: Multiple-choice questions that have predetermined correct responses; a question for writing with a score system; an oral interview that the administrator conducts using a question script and a checklist of acceptable answers (Saragih, 2016). It means the tests in this study are questions given to students to measure their knowledge and abilities.

3.6 Research Instrument

In conducting research, the instrument is important as a tool to obtain the data. According to Sathiyaseelan (2015), when referring to measurement tools like checklists or questionnaires, researchers generally use the term "instrument". An important part of the study process is choosing a research instrument. The research variables are numerically represented using it. In this study, the researcher used written tests as research instruments to measure students' reading

comprehension, which included determining main ideas, finding specific information, and understanding the meaning of words. The test is in the form of multiple choice. The test is tested first to ensure its validity and reliability.

1. Validity

Validity is a measure or criterion that shows the level of validity of an instrument. According to Sudaryono et al. (2019), validity is the degree of a measuring instrument's accuracy and determination in carrying out its intended measurement function. This means that researcher must test the validity of the test items that will be given to find out whether the test is valid or not. The researcher compared the r observed (Pearson correlation) with r table df (24) = 0.404 to determine the validity of the test. The test is valid if r observed > r table. After analyzing the validity, there are 25 questions from 40 questions which are valid. There are numbers 2, 3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 25, 26, 28, 30, 31, 33, 36, 37, and 38. In addition, the researcher only used 24 questions for pre-test and post-test.

2. Reliability

Reliability is a measurement series' or measurement instrument's consistency. Segal & Coolidge (2018) stated that reliability is the consistency or stability of a measurement. If no other irrelevant circumstances influence the score, a respondent taking the same test again will receive the same result, indicating that the test or instrument has strong reliability.

Table 3.1 Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
0,931	25

Table 3.2 Range of Reliablity

Cronbach's Alpha Value	Reliablity Level
> 0.90	Excellent
0.80-0.89	Good
0.70-0.79	Acceptable
0.60-69	Questionable
0.50-0.59	Poor
< 0.59	Unaccaptable

The researcher use internal consistency or reliability tests to determine whether the test is reliable or not by comparing the cronbach's alpha value with the reliability level by George and Mallery (2003) in Arof et al. (2018). From the table it is known that Cronbach's alpha is 0.931, which means that the test is in the excellent category so it can be used as a research instrument.

3.7 Data Analysis Technique

In analyzing the data, the researcher carried out descriptive statistics, normality test, and dependent samples t-test or paired samples t-test. The dependent t-test was used to test the data collected because it compares the mean score before and after treatment so that its effectiveness can be determined and IBM SPSS Statistic was used to compute the data. The paired samples t-test is used when comparing the means of two matched groups of individuals or cases, or when comparing the means of one group observed twice at different times (Ross & Willson, 2017).

3.7.1 Normality

The normality test is carried out to find out whether the data is normally distributed or not. To determine whether it is normal or not, if sig > 0.05 then the data distribution is normal and if sig < 0.05 then the

data distribution is not normal. The table of results from the normality test is as follows:

Table 3.3 Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pretest	0,140	26	0,200	0,943	26	0,159
Posttest	0,163	26	0,074	0,942	26	0,147

a. Lilliefors Significance Correction
m

From the table above, it can be seen that the pre-test significance value is 0.159 which means it is greater than 0.05 and the post-test significance value is 0.147 which means it is greater than 0.05. It can be concluded that the data distribution is normal so the researcher can use parametric statistics in the form of a dependent sample t-test or paired sample t-test.

3.8 Steps of the Research

In this research, the researcher carried out the following steps:

1. Formulating the problems and the aims of the research;
2. Formulating the research hypothesis;
3. Determining the population and sample;
4. Making the research instrument;
5. Giving pre-test to the sample;
6. Giving treatment by using the Jigsaw method to the sample;
7. Giving post-test to the sample;
8. Collecting and analyzing the data;
9. Examining the hypothesis and making conclusions.

3.9 Time and Place of the Research

This research is conducted at one of the junior high schools in Tasikmalaya from February to June 2024.

Table 3.5 Timeline of the Research

No	Descriptions	Feb 2023	Nov 2023	Jan 2024	Feb 2024	Jun 2024	Jul 2024
1.	Research Proposal Writing						
2.	Research Proposal Examination						
3.	Data Collection						
4.	Data Analysis						
5.	Report						
6.	Thesis Examination						