

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter discussed about research design, Source of Data, Subject of the study, Variable, Population and sample, Formulation of Hypothesis, Research instrument and method of collecting data, Data Analysis.

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

The purpose of research design was to know the using of Question Answer Relationship is effective or not if used in the first grade of MAN 1 Trenggalek. According to Ary (2006:21) research is an attempt to solve the problems by using scientific approach in a systematic way. This research used experimental design by using quantitative research. "Research designs are plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis." (Creswell, 2009:3). Experimental research is a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variable or variables for variation concomitant to the manipulation of the independent variables (Ary, 1985:26).

The experimental research intended to find out the difference in students' reading comprehension in narrative text between taught before and after using Question Answer Relationship Strategy. The experimental research is the only type of research that can test hypotheses to establish cause-and-effect relationship. In addition, the experimental research design is research in which the investigator determines whether the activity or materials make a difference in result for

participant. The experimental research used one group pre-test and post-test design because it was done in one group only.

In this research, there were two variables; the independent variable (X) was a condition that influences other variable and the dependent variable (Y) was a condition that influenced by experimental. In the dependent variable before the manipulation of the independent X, it was usually a pre-test (before the experimental group was given treatment) and after the manipulation of the independent variable X, it was usually a post-test (after the experimental group was given treatment), stated by Donald (2010).

The two variables were as follows:

1. Independent Variable (X): Question Answer Relationship Strategy
2. Dependent Variable (Y): Reading comprehension skill of students

That is why in this research the researcher just took one group of class and uses pre-test and post-test to see the result of the treatment.

There are three steps of this design, were:

1. Administering a pre-test and measuring the dependent variable.
2. Applying the treatment X to the experimental group.
3. Administering a post-test and measuring the dependent variable.

The researcher as a teacher used Question Answer Relationship Strategy to be applied in the class, and the procedure as follows:

- The teacher explained about the meaning of narrative text, the generic structures and the language features to the students.

- The teacher explained the Question Answer Relationship Strategy to the students.
- The teacher explained that in Question Answer Relationship Strategy there was four taxonomy, that was Right There, Think And Search, Author And Me, and On My Own. In Righy There and Think And Search means that the answer was in the text. While in Author And me and On My Own the answer was based on their background knowledge.
- The teacher given a narrtive text and asked the students to read the text carefully.
- And then the teacher guided the students to answer the question by using Question Answer Relationship Strategy.
- After the students understood, the teacher given different text of narrative to the students and asked them to read carefully to answer the question using Question Answer Relationship Strategy.

The One Group Pretest-Posttest Design as follows:

**Table 3.1 The One Group Pretest-Posttest Design**

Pretest	Independent	Posttest
$Y_1$	X	$Y_2$

Where:

$Y_1$  : Pre-test

$Y_2$  : Post-test

X : Treatment on the experimental group

This research intended to investigate the effectiveness of using Question Answer Relationship Strategy towards reading comprehension skill at First Grade Student of MAN 1 Trenggalek. The use of the treatment is aimed at proving whether the increase scores possibly got by the researcher. Thus, the effectiveness of that treatment was known as the significant score when the students taught using Question Answer Relationship Strategy.

## **B. Population, Sampling, and Sample**

### **1. Population**

Before the sample collected, the researcher had to determine the population. Population is object that has some qualities and characteristic that chosen to be cleared and to be concluded by the researcher Louis (2005). This research was conducted at MAN 1 Trenggalek. The researcher chooses MAN 1 Trenggalek because one of the visions of the school is to develop islamic, national and global academic skills with the implementation and development of the 2013 curriculum. From this vision the researcher seeks to realize the achievement of

global insightful academic abilities that are able to compete in the future. Language competence especially reading is very important to be mastered by students, because English in the future could be needed by them as an international language used in various local and international instances. This research intended for the first grade students of MAN 1 Trenggalek in academic year 2018/2019.

In this study, the populations are all of first grade students of MAN 1 Trenggalek which consist of seven classes for IPA (X MIPA 1, X MIPA 2, X MIPA 3, X MIPA 4, X MIPA 5, X MIPA 6, X MIPA 7), three classes for IPS (X IPS 1, X IPS 2, X IPS 3), and two classes for Agama (X IIK 1, X IIK 2). The total population are 389 students.

## **2. Sampling**

Sampling is a process of selecting a number of the students who will be represented from the large group, Ary (et al, 2010: 155). To determine the sample, the researcher used purposive sampling because it did not choose randomly. Purposive sampling is a type of non-probability sampling where the researcher consciously selected subjects in a study to make sure that the elements have certain characteristics concerned to the study.

## **3. Sample**

Sample was a group of units selected from large group (population) to represent it Fraenkel and Wallen (2009: 90). It means that a good sample must be representative of the entire as possible so that the generalization of the sample as true as population. To take a sample the researcher use purposive sampling where

the researcher choose X MIPA 5 class to be a sample that consisted of 35 students, there are 5 males and 30 females at MAN 1 Trenggalek in academic year 2018/2019 and they were divided into the experimental and control group.

**Table 3.2 Sample of Research**

<b>Sample of X MIPA 5</b>		
Male	Female	Total
5 Students	30 Students	35 Students

### **C. Research Instrument**

In this study, the researcher used test to get the scores of the students. Arikunto (1998: 130) states that test is question, which used to measure the skills, knowledge, intelligence, achievement aptitude, and another capability of someone or a group of people. It is in line with what Brown (1994: 253) states that; a test has a purpose of measuring a test measures a person's ability or knowledge. Based on the theories it can be concluded that test is an assessment intended to measure test-takers knowledge, skill, aptitude, physical fitness, or classification in many other topics.

There were two kinds of tests in this study, there were pre-test and post-test. Pre-test intended to measure students' reading achievement in narrative text before the treatment given. While post-test was to measure students' reading comprehension in narrative text after the treatment given. The tests were in the form of subjective test reading narrative text to measure students' reading comprehension in narrative text.

The material of the test is taken from English book and Internet, which related to:

1) Try out

Instrument try out was held before the pre-test and post-test were administrated to the chosen classes. The purpose is to measure the validity and reliability of the instrument. Try out was administered in another class that was X MIPA 6 class which was not involved during the research process.

2) Pre-test

The researcher do the pre-test when the teacher for the first time entered the class. It was aimed to know the students' ability in material of reading comprehension which given by the researcher.

3) Post-test

Post-test was done in order to know the changeable on students reading comprehension material between learning process with explanatory strategy and learning process through Question Answer Relationship strategy.

#### **D. Validity and Reliability Testing**

Validity defined as the extent to which a concept accurately measured in a quantitative study. For example, a survey designed to explore depression but which actually measures anxiety would not considered valid. The second measure of quality in a quantitative study is reliability, or the accuracy of an instrument. In other words, the extent to which a research instrument consistently has the same

results if it used in the same situation on repeated occasions. In this research, reading comprehension in narrative text test was used to measure the students' reading comprehension after they have taught by using Question Answer Relationship strategy. Validity and reliability testing of this test was very important to know scores derived from instruments used in the research.

### **1. Validity**

Fraenkel and Wallen (2005:113) stated that a valid instrument is measures what it supposed to measure. Validity is the most important idea to consider when preparing or selecting an instrument for use. An instrument or a test can be called valid if it at least consists of the content and construct validity. Therefore, in this study, the researcher used content validity, construct validity and face validity to know the validity of test.

#### **a. Face Validity**

Face validity becomes one of the validity types that can be established. Validity was measurement that showed the validity level of the instrument (Arikunto, 1998: 160). Face validity was hardly a scientific concept that very important. Test takers, teachers, education, authorities or employers may not accept a test, which does not have face validity. In this test, some aspects should be considered from this test to make a good test based on the advisor lecturer and the teacher of the first grade of senior high school.

b. Content Validity

Content validity means there was correspondence between curriculum objectives and the objectives being tested. It means that test said to have content validity if its objectives are same with the curriculum objectives. In this case, the researcher also checked the curriculum set to know what students must be able to do in certain level, especially in the first grade of senior high school, and the researcher found that in the second semester they have to able to identify the narrative text.

c. Construct Validity

Brown (2004: 45) mentioned that a construct is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception. Based on the theory above, the researcher asked the students to answer the question about narrative text based on the text to measure students' achievement in reading comprehension in the form of multiple choices to fulfill the construct of reading test and valid in term of construct validity. Therefore, the test has fulfilled the theory of reading in part of narrative text. The test consisted of seven texts all of which are about narrative text especially in the personal narrative that contain the orientation, events and re-orientation and the test was appropriate for testing reading comprehension.

## 2. Reliability

Harrison in Johnson (2001) say that the reliability of a test is its consistency. Thus, reliability is a measure of accuracy, consistency, dependability or fairness of scores resulting from administration of particular examination. Ary et al (2006:236) also define reliability as the degree of consistency with which an instrument measures whatever it is measuring. In this study, the researcher conducted try out before pre-test and post-test. After that, the researcher used SPSS statistics 18.0 to calculate the score during try out session. The researchers conducted try out to 34 students of X MIPA 6 on 21 March 2019. The criteria of validity of the instruments can be divided into five classes as follows (Ridwan 2004: 118);

1. If the *alpha cronbach* score 0.00-0.20: less valid
2. If the *alpha cronbach* score 0.21-0.40: rather valid
3. If the *alpha cronbach* score 0.41-0.60: enough valid
4. If the *alpha cronbach* score 0.61-0.80: valid
5. If the *alpha cronbach* score 0.81-1.00: very valid

Based on the tryout of the test that has been done on 21 March 2019, the researcher can find the result of the reliability of the test. The researcher used SPSS program to calculate it and the result of the test could be seen as follows:

**Table 3.3 The Result of Reliability Testing by Using Cronbach's Alpha**

**Case Processing Summary**

		N	%
Cases	Valid	34	100,0
	Excluded <sup>a</sup>	0	,0
	Total	34	100,0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
,748	21

From the table above, it showed that the Alpha value was 0.748, thus the value is included in *alpha cronbach* score 0.61-0.80, it could be concluded that the test has reliable.

## **E. Data Collecting Method**

In collecting data for this research, the researcher used reading test as the instrument, the kinds of test that given to the students are as follows:

### **1. Pre-test**

A pre-test provides a measure on some attribute or characteristic that you assess for participant in an experimental before they receive a treatment Creswell (2008:301). At the first meeting, the researcher gave a pre-test to the students. It was conducted to know how far the students score in reading. This test was given in order to know how far the students ability in reading comprehension of narrative text. The pre-test comprised 20 items, in the form of multiple choices items.

### **2. Post-test**

The post-test is a measure on some attribute or characteristic that is assessed for participants after a treatment Creswell (2008:301). The researcher conducted post-test after conducting the teaching through Question Answer Relationship Strategy. The post-test comprised also 20 items, in the form of multiple-choice items.

## **F. Data Analysis**

In this research, the researcher used statistical data analysis technique to know the different score between the student's achievement in reading ability before and after being taught by using Question Answer Relationship Strategy. Data analysis in research includes scoring technique, data analysis on the pre-test and post-test:

Analyzing data is a process of analyzing the acquired from the result of the research. The data which was needed in this research is students' comprehending about the text of the first grade students of MAN 1 Trenggalek in the academic year 2018/2019 before and after taught by using Question Answer Relationship Strategy. To analyze the data, the researcher used statistically calculation of the test to determine the final calculation, which done to measure the last score of the research test. Ary et al (2010:32) state that analyzing the data is the data collected in research must be analyzed. Quantitative data were usually in the form of numbers that the researcher analyzes using various statistical procedures. Even verbal data, such as compositions written by high school students, would be converted through the scoring process to a numerical form. The analysis of the numerical data in quantitative research provided evidence that supports or failed to support the hypothesis of the research. In this research, the researcher used a quantitative data analysis technique by using statistical method.

Statistical method was used to find the significant difference on the students' score before and after being taught by using Question Answer Relationship Strategy. To know the effectiveness of Question Answer Relationship Strategy in the students reading comprehension, the data was collected from students' score in pre-test and post-test. Then the data, which were gained from those two tests, were analyzed by using t-test for dependent sample, this test is also known as the correlated, non-independent, or Paired Sample t-test. Paired Sample t-test was used when the samples were pair or correlate where each individual results in two data. In other words, the scores for pre-test and post-test

were correlated because those scores were gained by the same individuals. To know the significant differences researcher used SPSS 18.0 version.