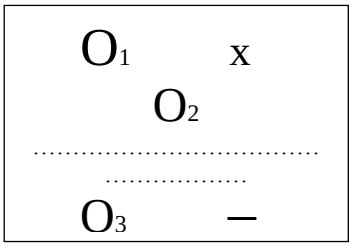
CHAPTER III
RESEACH METHOD

3.1 Research Method

This research was quantitative research design. This research used quasi experimental design. In this design, there were pre-test, treatment, and post-test. Pre-test was given to the student before giving the treatment, quasi experimental design needed two classes as experimental and control class. According to Sugiyono (2012:77) quasi experimental is a design that has control group, but cannot control all variables that give influence in research because very difficult to get the control group that used in the research. In this design, had one group that did not get the treatment, because had a compare, the result of the treatment. The treatment which was given was the influence of contextual teaching and learning (CTL) method toward students reading comprehension at the eighth grade of SMPN 10 Kotabumi academic year 2018/2019.

In this research, the researcher chosen nonequivalent control group design. Sugiyono (2012:79) this design have post-test and pre-test. But the control and the experiment group were not chosen randomly. The design of nonequivalent control as follows:



PICTURE 2
THE DESIGN OF NONEQUIVALENT CONTROL GROUP DESIGN

Notes:

X : Treatment

O1 : Pre-test in experiment class

O2 : Post-test in experiment class

O3 : Pre-test in control class

O4 : Post-test in control class

_ : No treatment

The data of this research was taken trough pre-test and post-test. The researcher conducted pre-test to find out the students basic of reading comprehension and to know whether the experiment class and the control class had the same ability or not. The task of pre-test and post-test were test. The researcher taught reading by using (CTL) method in experiment class but student in control class did not be taught by the this method but usual method. The post-test was conducted after the treatment. After got the result the researcher compared whether post-test of both class had significant value or not on students reading comprehension. If the average score of post-test in experiment class was higher than the average score of the post-test in control class, it means that (CTL) method significantly increase students reading comprehension.

3.2 Population, Sample, and Sampling Technique

3.2.1 Population

According to Sugiyono (2012:80) population means generalization region consist of: object/subject that have certain qualities and characteristics are determined by investigators to be studied and then draw conclusion. So the

population is not only people but also objects and natural objects to another. Population is also not just the amount present in the object / subject studied. But includes characteristics/properties owned by the subject or the object.

Population in this research was the eighth grade student of SMPN 10 Kotabumi academic year 2018/2019 consisting of 152 students the complete data was served in the following table.

TABLE 3
THE STUDENT'S POPULATION OF THE EIGHT GRADE
IN SMPN 10 KOTABUMI 2018/2019

No	Class	Number
1	VIII A	29
2	VIII B	28
3	VIII C	30
4	VIII D	28
Total		**115**

Based on the table above , population in this research was all of the IV classes in Sekolah Menengah Pertama Negeri 10 Kotabumi academic year 2018/2019 consist of 115 students. There were four classes in this population.

3.2.2 Sample

According to Sugiyono (2012:81) sample is a part of the total and characteristic which is having of the population. The sample which was taken from the population must be representative. In this research, researcher took two classes as a sample of four classes in Sekolah Menengah Pertama Negeri 10 Kotabumi, with the total of number were 56 students. The sample in this research were VIII B chosen as an experimental class, and VIII D chosen as control class.

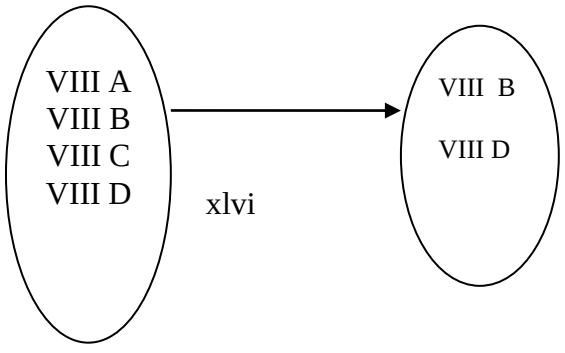
TABLE 4
THE SAMPLE OF THE EIGHT GRADE STUDENT
OF SMPN 10 KOTABUMI

No	Group	Class	Sample
1	Experiment class (X1)	VIII B	28
2	Control group (X2)	VIII D	28
Total			

Based on this opinion, sample which was taken are VIII B and VIII D because the both of class had same teacher so the technique in teaching learning became same, same time allocation, English handbook, and material. VIII B was choose as experiment class thata got the treatment by using Contextual Teaching and Learning method, and VIII D was choose as control class which was taught by another method. Both classes were given pre-test and post-test, but they got different treatment.

3.2.3 Sampling Technique

In conducting the research in order to get the sample from the population, the were several ways to get the sampling technique. In this research, the researcher used purposive sampling technique because had certain consideration. According to Sugiyono (2012:85) purposive sampling technique was the technique to determine sample with some consideration. The following is the islustration of sampling technique by using purposive sampling.



Purposively

PICTURE 3
PURPOSIVE SAMPLING TECHNIQUE

3.3 Research Instrument

Research instrument was the tool to collect the data. According to Sugiyono (2012:102) instrument is tools testing to measure some specifics phenomenon. In this research the researcher used instruments in reading test, to measure students reading comprehension.

3.3.1 Research Instrument of Reading Comprehension

a. Conceptual Definition Reading Comprehension

Reading comprehension is an activity to obtain information and knowledge by observe, understand and think the written text that has been read, in order words, reading comprehension is an activity that can enhance our information and ability because by reading the readers can get and find information that they read.

b. Operational Definition of Reading Comprehension

To get the data in reading comprehension, researcher conducted a test. The test made by the researcher. The way of test was by using multiple choice tests. Concept of the test was students given some text and then the students answer the question which ha correlation with the text. The question was multiple choices and the students must choose one of the choices. The researcher gave multiple choices that consisted of 35 items with 4 options a, b, c and d to measure the

students reading comprehension items, after conducted the test, the researcher analyzed the result.

Questions in reading comprehension were made based on the reading skill level proposed by Djiwandono (2006:117-118). However, the researcher only focused on the three indicators covers main idea, vocabulary, and unstated (detail) information.

TABLE 5
THE ITEM OF READING COMPREHENSION TEST

No	Aspects	Indicator	Test Item	Total
1	Main idea	determining the main ideas of the text	1, 4, 7, 12, 15, 18, 22	7
2	Supporting details	determining the supporting details of the text	2, 3, 8, 11, 13, 17, 21, 23, 25, 26, 28, 29, 30, 31, 32, 33, 34	17
3	Knowledge about certain vocabulary	using correct vocabulary or diction	5, 6, 9, 10, 14, 16, 19, 20, 24, 27, 35	11
Total				35

After that the researcher conducted tryout the research instrument test. Then the researcher evaluated the test items to get good items that used test in pretest and posttest. In this case, researcher measured the validity and reliability of the test, only the valid and reliable items used in the pretest and postest.

3.3.2 Validity of the Test

Validity means how far the accuracy of a test instrument really measured what it should be measured. In this research, researcher used internal validity

which was developed based on the relevant theory. There were two kinds of internal validity: those were construct and content validity. In measuring the instrument validity of students reading comprehension, the researcher used content validity: content validity was the extent to which a test examines whether the test a good representation of the material that needs to be tested.

The focus of content validity was on the items of the test should represent the material being discussed. The testing of content validity was done by comparing between content of instrument test was created by comparing the content of instrument with the subject or material which was taught. To measure the validity of test instrument from students reading comprehension, the researcher used point biserial correlation because the data have interval and the ordinal data was interval. The formula of point biserial correlation according to Arikunto (2006:283) is: Rpbis = $\boxed{\frac{Mp - Mt}{St}\sqrt{\frac{p}{q}}}$

Note:

Rpbis : Coefficient of point biserial correlation

Mp : Mean score from subjects which answer correctly the item

St : Standard deviation of total score

Mt : Mean of total score (average of score from all of test participants)

P : Proportion of subject which answer correctly the item

Q : 1- p

The criteria of validity test was the calculation result of r_{pbis} (r_{count}) consulted by r_{table} score. If (r_{count}) > r_{table} the item test was valid. Moreover, to know

about the validity levels of (r_{count}) was interpreted with the table of interpretation as follows:

TABLE 6
INTERPRETATION OF r_{count}

r_{count}	Interpretation
0,000-0,199	Very low
0,200-0399	Low
0,400-0,599	Enough
0,600-0,799	High
0,800-0,999	Very High

Arikunto, 2006:75

3.3.3 Reliability of The Test

Arikunto (2006:178) says that reliability means an instrument can be believed to be as tool to collect the data because the instrument has been well and although the data is taken many times the result would consistent or similar.

In this research, reliability was tested by using split half technique formula. In this test, scores were grouped into odd parts and even parts, and then calculated the correlation value over the odd and even parts (r_{xy}) with the following formula:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\}\ \{(N \sum y^2) - (\sum Y)^2\}}}$$ (Arikunto, 2010:72)

description:

r : correlation coefficient of the odd and even parts

$\sum_{xy}$: the sum of the odd and even parts

$\sum X$: the sum of the odd parts scores

$\sum Y$: the sum of the even parts scores

$\sum X^2$: the sum of square of the odd and even parts for each student

$\sum Y^2$: the sum of square of the odd and even parts for each student

$(\sum X^2)$: the sum of the squared of the odd and even parts

$(\sum Y^2)$: the sum of the squared of the odd and even parts

N : total of the respondents

Then, it was continued to find the index reliability the researcher used Spearman Brown Formula (Arikunto, 2010:93). The formula was as follows:

$$r_{11} = \frac{2 \text{ x } r\, {}^{1}\!/_{2}\, {}^{1}\!/_{2}}{1 + r\ {}^{1}\!/_{2}\, {}^{1}\!/_{2}}$$

where:

r_{11} = coefficient reliability instrument

$r_{½½}$ = Pearson correlation of odd and even value

After reliability score was found, it was consulted to r product moment table. The criteria for instrument to be called reliable is if r_{11} (r_{count}) > $r_{table.}$

3.4 Data Collecting Technique

The data collecting technique in this research was used test, test in this research was reading test, the form was multiple choices, which consisted of 35 items with four alternative answesr, and the test was given in directly for students. The result of the test was collected and then given score by researcher. A student

which was right answer got score 1 and wrong answer got 0. To find the score was used the formulation:

$$\text{Score} = \frac{\sum total\ right\ answer}{\sum total\ items}\ X\ 100\%$$

3.4.1 Pre-test

The used of pre-test was to measure how far students reading comprehension before the treatment applied. In this section, pretest was used to measure both of classes are having same ability before conducting the treatment. After the pretest was done, the experiment class was taught by using CTL method in teaching reading, and in contrast, the control group was taught by teacher explanation in reading.

3.4.2 Post-test

Post-test was a test that given after a lesson or a period of instruction, this test conducted to knowing any influence in Contextual Teaching and Learning Method toward students reading comprehension.

So the researcher made a conclusion, pre-test and post-test done to comparing and seen if there was the influence in the use of CTL method toward students result of learning when before given treatment and after lesson or after given treatment.

3.5 Data Analysis

The data analysis was used to draw the conclusion of the research data. In analyzing, the researcher used to know the final result between experimental and control group. The data which was used in analysis was the data from result of

post-test. The data had been tested with prerequisite test by using normality and homogeneity.

3.5.1 Normality Test

Normality test was used to know whether the data of the sample which was used in the research have normal distribution or not. According to Sudjana (2005:466), to measure the normality of the data was used lilliefor's test with the formula as follow:

a. Determine the standard number using the formula

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

Notes :

Z_i : Standard Number

X_i : Score which are gotten

$\bar{X}$: Average

S : Standard deviation

b. Determining the opportunity of each standard number using the formula

$$F(zi) = P(Z \leq Zi)$$

c. Determining the proportion using the formula

$$S(Z_i) = \frac{\text{total } z_1, z_2, z_3, .. z_n \text{ which is} \leq Z_i}{n}$$

d. Calculating the absolute number using the formula

$$| F(Zi) - S(Zi) |$$

e. Determine the largest absolute value which is called L_0, then compared the $L_0$with L_{table}. The normal criteria is; H_o is accepted if $L_0 \leq L_{table}$ (the data has normal distribution).

3.5.2 Homogeneity Test

The homogeneity test was used to know whether the data in experiment class and control class were homogeneity was not. The researcher used homogeneity test. According to Sugiyono (2010:275) is as follow:

$$F = \frac{The\ highest\ Variant}{The\ Lowest\ Variant}$$

The test criteria are:

a. H_o is accepted if $F_{observation} < F_{table}$ (the variances of the data are homogeneous)
b. H_o is rejected if $F_{observation} > F_{table}$ (the variances of the data are not homogeneous)

3.5.3 Hypothesis Test

To analyze the hypothesis test, it was used t-test.it was used to know whether there was any difference or similarity between the data from control group and experiment group. The t-test was named independent group t-test. The formula based on Sudjana, (2005:238) is:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2 + s_2^2}{n_1\ n_2}}}$$

Description:

t = t-test

$\overline{x_1}$ = Average of experiment class

$\overline{x_2}$ = Average of control class

n_1 = Sum of experiment class

n_2 = Sum of control class

S_1^2 = Varian of experiment class

S_2^2 = Varian of control class

The hypothesis which would prove is:

H_0 : There is no influence of contextual teaching and learning (CTL) method toward students reading comprehension at eight grade of Sekolah Menengah Pertama Negeri 10 Kotabumi academic year 2018/2019

H_a : There is significant influence of contextual teaching and learning (CTL) method toward students reading comprehension at eight grade of Sekolah Menengah Pertama Negeri 10 Kotabumi academic 2018/2019