**CHAPTER III**

 **RESEARCH METHODOLOGY**

1. **Research Design**

This research used experimental design. In conducting the research, the researcher applied quasi-experimental. Creswell states that we can apply the pre and post-test design approach to a quasi-experimental design. The researcher assigns intact groups the experimental and control treatments, administers a pre-test to both groups, conducts experimental treatment activities with the experimental group only, and then administers a post-test to assess the differences between the two groups.[[1]](#footnote-1) It means that, this research did not make new classes for experimental. Then, the researcherjust chooses two classes for control and experimental class. Before applying that treatment, the researcher gave pre-test and post-test to the students. The quasi-experimental design can be presented as follows:

**Table 2**

**Pre and Posttest Design**

|  |  |  |  |
| --- | --- | --- | --- |
| Control Group | Pre-test | No Treatment | Posttest |
| Experimental Group | Pre-test | Experimental Treatment | Posttest |

The researcher used two classes as sample in this research. Control class was taught by text media (teacher handbook and studens’ worksheet) and the experimental class was taught by using visual media (graphic novel). This research found the result and influence of using graphic novel media towards students’ reading comprehension.

1. **Variable of Research**

After determining the method of this research, the researcher focused on two variables:

1. The independent variable was using graphic novel as (X)
2. The dependent variable was the students’ reading comprehension as (Y)
3. **Operational Definition of Variable**
4. The independent variable (X)

Graphic novel is creative expression a distinct discipline, an art and literary form that deals with the arrangement, of pictures or images, and words to narrate a story or dramatize an idea.

1. The dependent variable (Y)

Reading comprehension is a process that the reader must read the text and interact the printed on written symbols with his cognitive skill and his knowledge of the world. It means that reading is not simply making sound of the text, but it is about comprehending the idea of the text itself.

1. **Population**

Fraenkel and Wallen state that a sample in a research study is the group on which information is obtained. The larger group to which one hopes to apply the results is called the population.[[2]](#footnote-2) The population in this research was all of the students at the second semester of the eighth grade in MTs Sriwijaya East Lampung in academic year of 2015/2016. The total numbers of all the students were 89 students that divided into 3 classes. Based on the statement, all of the second grade students were the population in this research.

The total number of the students at the eighth grade of MTs Sriwijaya East Lampung at the second semester in academic year of 2015/2016 can be seen from the table below:

**Table 3**
**Total Number of the Students at the Eighth Grade of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung in Academic Year of 2015/2016**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Class** | **Gender**  | **Number of Student** |
| **Male** | **Female** |
| 1.  | VIII A | 13 | 17 | 30 |
| 2.  | VIII B | 14 | 16 | 30 |
| 3. | VIII C | 15 | 14 | 29 |
| **Total** | **42** | **47** | **89** |

*Source: MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung in the Academic Year of 2015/2016*

1. **Sample of the Research**

The small group that is observed is called a sample, and the larger group about which the generalization is made is called a population. Based on Ary *et.al.* who state that a sample is a portion of a population. For example, the students of Washington High School in Indianapolis constitute a sample of American high school students.[[3]](#footnote-3) In this research the researcher took two classes as the sample of the research. They were one class as control class (VIII A) and one class as experimental class (VIII B).

1. **Sampling Technique**

In this research, the researcher used Cluster Random Sampling technique because the population is in groups and homogenous.[[4]](#footnote-4) The researcher took two classes of the eighth grade, one as the experimental class and the other one as the control class. There were three procedures to take the classes as sample:

1. First, the researcher made three small pieces of rolled paper which each piece was the name of each class (VIII A, VIII B, VIII C). All small pieces of rolled paper put into a glass.
2. Second, the glass was shaken and the researcher took one small piece of rolled paper it was control class (VIII A).
3. Third, the researcher shook the glass again and took one small piece of rolled paper the name of class as experimental class (VIII B).
4. **Data Collecting Technique**

In this research the researcher used the data which comes from:

1. Try out

try out was to know the students’ reading comprehension before doing Pre-test and posttest. It was to measure the validity and reliability of the test.

1. Pre-test

Pre-test was done to know the students’ ability before treatment. The test was done by answering multiple choice questions. The researcher’ scoring is based on main idea (topic), expressions /idioms/ phrases/ in context, and also inference (implied detail), grammatical features, detail (scanning for a specifically stated detail), supporting idea and vocabulary in context.

1. Post-test

Post-test was done to know the students’ comprehension after they were taught by using graphic novel. The system and the difficulty of posttest were same as the pre-test, because both of them were used to measure the students’ reading comprehension in graphic novel in order to know the development of the students’ reading ability after graphic novel was applied.

1. **Research Instrument**

Instrument of this research was a test for reading comprehension. To get a good result of test reading comprehension the researcher consoled it with the language assessment theory, especially in reading there were some criteria that commonly used in measuring students’ reading comprehension. They were:

1. Main idea (topic).
2. Inference (implied detail).
3. Grammatical features.
4. Detail (scanning for a specifically stated detail).
5. Excluding facts not written (unstated details).
6. Supporting idea(s).
7. Vocabulary in context

This means that not all questions were about guessing technique, but the questions should cover all of the above criteria. Vocabulary in context, in which guessing strategy was mostly used, the researcher prepared instrument in the form of multiple choice questions. The specification of test as follows:

**Table 4**

**Instrument of Try out for Pre Test and Post Test**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Aspects** | **Indicator** | **Item numbers** |
| **Pre Test** | **Post Test** |
| **1.** | Main idea (topic) | Students can find the main idea of the passage. |  6, 16, 30, 40, 47 | 2, 14, 18, 30, 37, 50 |
| **2.** | Inference (implied detail) | Students can find what is inferred in the passage. | 5, 2, 11, 15, 26, 33, 37, 38, 45, 50 | 1, 17, 22, 31, 32, 41, 45, 49 |
| **3.** | Grammatical features (reference) | Students can match between the pronoun and what or who it stands for. | 9,29,17, 23, 39, 48,  | 3, 4, 8, 15, 21, 38, 7 |
| **4.** | Detail (scanning for a specifically stated detail) | Students can scan for a specifically stated detail. | 3, 8,10,28, 31, 35, 43,  | 7,9, 11,13,18,20,27, 33, 35, 43, 46 |
| **5.**  | Excluding facts not written (unstated details) | Students can find unstated detail. | 1, 7, 13, 21, 22, 27, 44,  | 5, 6, 10, 12, 34, 36, 44 |
| **6.** | Supporting idea(s) | Students can find the supporting idea(s) to support the main idea. | 4,12, 14, 20, 24, 32, 34, 41, 46, | 19, 23, 24, 25,  |
| **7.** | Vocabulary in context | Students can guess the meaning of difficult vocabularies from context provided. | 18, 19, 25,36, 42, 49 | 16, 28, 29, 39, 40, 42, 48 |
| Total | 50 | 50 |

After tried out the instruments, the researcher found 20 item numbers instruments for pre-test, and 20 item numbers instrument for post-test. The specification of test as follows:

**Table 5**

**Instrument of Test for Pre-test and Post-test**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Aspects** | **Indicator** | **Item numbers** |
| **Pre Test** | **Post Test** |
| **1.** | Main idea (topic) | Students can find the main idea of the passage. | 18 | 14 |
| **2.** | Inference (implied detail) | Students can find what is inferred in the passage. | 6,14, 15, 16  | 6, 15, 19 |
| **3.** | Grammatical features (reference) | Students can match between the pronoun and what or who it stands for. | 17 | 1, 2 |
| **4.** | Detail (scanning for a specifically stated detail) | Students can scan for a specifically stated detail. | 1, 3, 11, 12, 19 | 3, 7, 9, 12 |
| **5.**  | Excluding facts not written (unstated details) | Students can find unstated detail. | 4, 9, 20 | 4, 16 |
| **6.** | Supporting idea(s) | Students can find the supporting idea(s) to support the main idea. | 2, 5, 8, 13  | 8, 10, 11 |
| **7.** | Vocabulary in context | Students can guess the meaning of difficult vocabularies from context provided. | 7, 10 | 5, 13, 17, 18, 20 |
| Total | 20 | 20 |

1. **Research Procedure**

There were three steps that was done in research procedure, which were:

1. **Planning**

Before the researcher applied the research procedure, the researcher made some planning to run the application well. There were some steps that should be planned by the researcher.

The procedure of making planning of this research can be seen as follows:

1. Determining the subject

In this phase the researcher chose the eighth Grade student of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung as the subject of the research, one class was the experimental class and the other one was the control class.

1. Preparing the try-out

The researcher prepared a kind of test (called try-out test) that was given to the students. There were 50 items. The try out would be done in 90 minutes. The aim of try out was to know the quality of the test, which was used as instrument of the research.

1. Preparing the pre-test

The researcher prepared a kind of test (called pre-test) that was given to the students. The researcher used the test instrument which had been tried out before.

1. Determining the material to be taught

After giving pre-test to students, the researcher determined the material to be taught to the student that is reading comprehension.

1. Preparing post-test

The researcher prepared a kind of test (called post-test) that was given to the students. The post test was done at 90 minutes and the aim is to find out the students’ reading comprehension.

1. **Application**

After making the planning, the researcher applied the research procedure that was already planned. There are some steps in doing this research:

1. In the first meeting, the researcher gave try-out

This test was multiple choices that consist of 50 items with 4 options a, b, c, and d

1. In the second meeting, the researcher gave pre-test.

The test was multiple choices with 4 options a, b, c, and d. The total number of the test items was 20, determined by the validity and reliability analysis of the try out. It means that only the valid and reliable test items used in the pre-test.

1. After giving the pre-test to the students, the researcher conducted a treatment in control class and experimental class. In control class the researcher conducted a treatment with teacher’s handbook and students’ worksheet (teacher’s media). While in experimental class, the researcher conducted the treatment with graphic novel media.
2. In the last meeting, the researcher gave post-test.

The test was multiple choices with 4 options a, b, c, and d. The total number of the test items was determined by the validity and reliability analysis of the try out. It means that only the valid and reliable test items would be used in post-test.

1. **Reporting**

The last point that should be done in the research procedure was reporting. There were three steps in reporting. The steps were as follows:

1. Analysing data that was already received from try-out test.
2. Analysing data that was already received from pre-test and post-test.
3. Making a report on the findings.
4. **Scoring System**

Before getting the score, the researcher determined a procedure to be used in scoring the students’ work. In order to do that, the researcher used Arikunto’s formula. The ideal highest score was 100. The scores of pre-test and post-test were calculated by using the following formula:



Notes:

S : The score of the test.

r : The total of the right answer.

n : The total items.

1. **Validity of Test**

Validity is a matter of relevance. Best and Kahn state that, a test is valid if it is measures what it claims to measure.[[5]](#footnote-5) It means that the tests measures what is supposed to be measure. To measure whether the test has good validity or not, the researcher will use the content and construct validity.

1. **Content Validity**

Best and Kahn state *Content validity* that refers to the degree to which the test actually measures, or is specifically related to the traits for which it is designed. Content validity is based upon careful examination of course textbooks, syllabi, objectives, and the judgments of subject matter specialists.[[6]](#footnote-6) It means that the content validity is based on the material, and the material is agreement with the objectives of learning.

The instrument of the test must be agreement with the objectives of learning in the school which it was based on the syllabus, because the test must be able to measure the students’ reading comprehension at the eihgth grade of junior high school. The researcher consulted the instrument to the English teacher of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung. It was done to make sure that the instrument was valid.

1. **Construct Validity**

Best and Kahn state *Construct validity* is the degree to which scores on a test can be accounted for by the explanatory constructs of a sound theory.[[7]](#footnote-7) It means that construct validity is focused on the aspects of the test which can measure the ability especially for reading ability.

In this research, the researcher made a reading test that can measure the students’ reading comprehension based on the eight criteria of reading’s scoring rubric. The researcher consulted the instrument to the English teacher of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung to make sure whether the instrument was valid or not.

1. **Reliabilityof Test**

Fraenkel and Wallen state that, reliability refers to the consistency of the scores obtained-how consistent they are for each individual from one administration of an instrument to another and from one set of items to another.[[8]](#footnote-8) Besides having high validity, a good test must have high reliability too. To get the reliability of the test, the researcher used inter-rater reliability. This inter-rater reliability count level of the reliability based on two series of score that were gotten by two ratters or more simultaneously. They are teacher and researcher. To estimate the reliability of the test, the researcher will use rank order correlation.[[9]](#footnote-9) The formula is:

$$ ρ=1- \frac{6 \sum\_{}^{}D^{2}}{N \left(N^{2}- 1\right)}$$

Notes:

ρ = the number of rank order correlation (rho)

6 and 1 = constant number

D = different of rank correlation (D = R1 – R2)

N = the number of students

Furthermore, to know the degree of the level of reliability of written, the researcher consulted the criteria of reliability as follows:

Reliability coefficient 0.800 – 1.000 is very high

Reliability coefficient 0.600 – 0.800 is high

Reliability coefficient 0.400 – 0.600 is fair

Reliability coefficient 0.200 – 0.400 is low

Reliability coefficient 0.000 – 0.200 is very low[[10]](#footnote-10)

1. **Data Analysis**
2. **Normality Test**

The researcher uses normality test to know whether the data had a normal distribution or not. Here, the test of *liliefors* is used. When the data had been collected, so the normality test is as follows:[[11]](#footnote-11)

The procedures to get the normality test were:

1. Arranging the sample’s data from the lowest until the highest
2. Determining the score of Z from each data by using the following formula:

Z=$\frac{xi-x}{s}$

Where:

S : Standard of deviation

Xi : Single datum

X : Coefficient of single datum

1. Determining the probably of each Z score with ƒ(Z) by using

If Z>0, then ƒ (Z) = 0.5 + table score

If Z<0, then ƒ (Z) = 1(0.5 + table score (SZ)

1. Counting the cumulative frequency of Z score (SZ)
2. Determining the Lo score with the highest score to compare to the Lt score from the table of *liliefors*.
3. The hypotheses for the normality test formulate are :

H0: The data are normally distributed

Ha: The data are not normally distributed

1. The Criteria are as follows:
2. H0 is accepted if Lobservedis lower than Lcritical, means the distribution of data is normal.
3. Ha is rejected if Lobservedis higher than Lcritical, means the distribution of data is not normal.
4. **Homogeneity Test**

The homogeneity test was done in order to know the resemblance among population, whether the variance of the data in the experimental class and in the control class was homogenous or not. The homogeneity test used the test of two variances of *fisher test*.

The formula was:

F = $\frac{S}{S}$

Where:

F : Homogeneity

S12 : The highest variance

S22 : The lowest variance[[12]](#footnote-12)

The hypothesis for the homogeneity test formulated as follows:

H0 : Data have the homogenous variances

Ha : Data have not the homogenous variances

The criteria for homogeneity test are as follows:

1. H0 is accepted if Fobservedis lower than or equal to Fcritical, means the variance of the data is homogenous.
2. Ha is rejected if Fobservedis higher than Fcritical, means the variance of the data is heterogonous.
3. **Hypothetical Test**

After the researcher knows that the data was normal and homogeneous, the data is analyzed by using ttest in order to know the significance of the treatment effect.

This test used Ttest to analyze the data. The T-test formula is:

t = $\frac{Mx-My}{\sqrt{\left(\frac{\sum\_{x}^{}2+\sum\_{y}^{}2}{Nx+Ny-2}\right)\left(\frac{I}{I}+\frac{I}{Ny}\right)}}$

Where:

 t : ttest

 Mx = mean of experimental class

 My = mean of control class

 Σx2 = average deviation in experimental class

 Σy2 =average deviation in control class

 N = subject in sample

 With df = Nx+Ny-2.[[13]](#footnote-13)

The criteria of the test are as follows:

 Ha is accepted if tobserved>tcritical

 Ho is accepted if tobserved≤ tcritical

In this case, the reader used the level of significance α 0.05.

Where the hypothesis of the research are:

Ho : There is no significant influence of using graphic novel toward students’
 reading comprehension at second semester of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung in academic year of 2015/2016

Ha : There is significant influence of graphic novel toward students’ reading
 comprehension at second semester of MTs Sriwijaya, Sadar Sriwijaya, Bandar Sribhawono, East Lampung in academic year of 2015/2016

1. John W. Creswell, *Educational Research Planning Conducting and Evaluating Quantitative and Qualitative Research 4th Ed,* Baston : Pearson Education, 2012, p.310 [↑](#footnote-ref-1)
2. Jack R. Fraenkel and Norman E. Wallen, *How to Design and Evaluate Research in Education,* McGraw-Hill, New York, 7th ed., 2009, p. 90 [↑](#footnote-ref-2)
3. Donald Ary, *et, al, Introduction to Research in Education 8th edition,* Cengage Learning*,* Wadsworth,2010*,* p, 148 [↑](#footnote-ref-3)
4. Sugiyono, *Metode Penelitian Pendidikan Kuantitatif, Kualitatif, dan R&D,* Alfa Beta, Bandung, 2010, p.121 [↑](#footnote-ref-4)
5. John W. Best and James V. Kahn, *Research in Education,* New Delhi, Prentice-Hall, 7th ed., 1995. p. 218 [↑](#footnote-ref-5)
6. *Ibid,* p. 219 [↑](#footnote-ref-6)
7. *Ibid,* p, 219 [↑](#footnote-ref-7)
8. Jack R. Fraenkel and Norman E. Wallen, *Op. Cit,* p. 154 [↑](#footnote-ref-8)
9. Anas sudijono, *Pengantar Statistika Pendidikan,* Jakarta: Rajawali Pers, 2010, P.232. [↑](#footnote-ref-9)
10. Bambang Setiyadi, *Op, Cit*, p, 167 [↑](#footnote-ref-10)
11. Sudjana, *Metode Statistika,* Tarsito, sixth edition, 2005, p, 466 [↑](#footnote-ref-11)
12. *Ibid* p.249 [↑](#footnote-ref-12)
13. AnasSudijono, Op.Cit, p.317 [↑](#footnote-ref-13)