1. **Methodology of Research**

   a. Method of Research

   In this research, I used quasi-experimental method, in which the method was used statistically in technique to analyze the data.

   b. Design of Research

   This research used “one group pre-test and post-test design” as follow:

   \[O_1 \quad x \quad O_2\]

   Notes: \(O_1\) - Pre-Test

   \(X\) - Treatment

   \(O_2\) - Post-Test

   (Arikunto, 2010: 124)

   Then, the procedures or steps of doing this research design are explained as follows:

   a. Pre-Test
The pre-test was given to the students before conducting treatment. The aim of this test is to know the students basic vocabulary mastery before apply English comic strip. The kind of test is multiple choices consist of thirty numbers (30).

b. Treatment

The treatment was conducted by applying the media in teaching vocabulary to the students through English comic strip. I did the treatment about three weeks or six meetings with the different topics.

c. Post-Test

Post-Test was given to the students after doing treatment. The aim of this is to know whether the English comic strip can influence significantly the students’ mastering vocabulary or not.

2. Population and sample

a. Population

According to Arikunto (2010:173) “a population is a set or collection of all elements processing one or more attributes of interest. The populations of this research are the students at the eighth grade of SMP Negeri 8 Kota Gorontalo. They are consist of 240 students.
b. **Sample**

According to Arikunto (2010:174) “Sample is part of the number or representative of population. I took the VIII\textsuperscript{7} class that consists of 30 students as the sample in this research. I took this class because the students’ mastery vocabulary is still low. Based on my observation, when I got some information’s from the English teacher, this class has a lower quality to understand and product vocabulary. In this research, I want to know the effect of comics strip to students’ mastery of English vocabulary.

a. **Variable of Research**

There are two variables in this research, namely:

1. Variable X (independent variable) is “comic strip”

2. Variable Y (dependent variable) is “the students’ mastering in English vocabulary”

b. **Technique of collecting the data**

In collecting the data, I used multiple choice tests as the instrument, it presented in the blue print bellow.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Multiple Choice Test</th>
<th>Details</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjectives</td>
<td>10</td>
<td>Students identify adjectives from the text.</td>
<td>10</td>
</tr>
<tr>
<td>Nouns</td>
<td>10</td>
<td>Students identify nouns from the text.</td>
<td>10</td>
</tr>
</tbody>
</table>
Verbs | 10 | Students identify verbs from the text. | 10 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of Items</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Validity testing

The aim of validity testing is to verify the correlation between score of instrument and the total score of instrument the respondents (sample). To get the validity of the test, I use product moment formula.

\[ r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} \]

Note:

- \( r_{xy} \): the score of the correlation of the scores on the two halves of the test.
- \( \sum X \): the sum of X scores
- \( \sum Y \): the sum of Y scores
- \( \sum X^2 \): the sum of the scores of X scores
- \( \sum Y^2 \): the sum of the scores of Y scores
- \( N \): the number of students in the sample
\[ \sum_{XY} \] : the sum of the products of X and Y scores for each student

(Arikunto, 2010: 213)

b. Reliability Testing

For testing reliability of the test, I use the formula as follows:

\[ r_{11} = \frac{kk - Mk^2}{MkVt} \]

Note:

\[ r_{11} \] : reliability of instrument

\[ Vt \] : total variants

\[ k \] : number of items/test

\[ M \] : the average of the scores

Arikunto (2010: 232)

c. Technique of Analyzing the Data

The data of this research analyzed in quantitatively. There are two steps in analyzing the data; normality testing and hypothesis verification. The steps are explained as follows:

1. Normality Testing

The normality testing is the prerequisite of using t-testing. The aim of the normality analysis is to know whether the data is normal or not. In
analyzing the data, I use Liliefors method with the real stage $\alpha=0.05$
by following procedures:

1. Observation $X_1, X_2, X_3\ldots, X_n$ is become deviation $Z_1, Z_2, Z_3\ldots, Z_n$ by using the formula as follow:

$$Z_i = \frac{X_i - \bar{X}}{S}$$

Note:

$Z_i$: Standard of value

$X$: The average of total score

$S$: Total of score deviation

2. For each deviation uses distribution of normal and then counted the deviation by using the formula as follow:

$$F(Z_i) = P(Z \leq Z_i)$$

3. The next procedure is counting proportion $Z_1, Z_2, Z_3\ldots Z_n$ which is small or similar with $Z_i$. If this proportion is $S(Z_i)$

$$S(Z_i) = \text{amount } Z_i, Z_2, Z_3\ldots Z_n \leq Z_i$$

4. Count the deviation of $(Z_i)$ and then set the absolute value.
5. Take the big value among the absolute value deviation, which is called as Lo

6. The criterion of analysis, the data is normal distribution if Lo \textless Llist

2. Statistical Hypothesis

In statistical hypothesis, I use t-test formula. This formula is used to find out the comic strip can influence towards the students’ mastery on English vocabulary or not. The formula as follow:

1) Assembling of the hypothesis that is tested

\[ H_0: \mu_1 = \mu_2 \]

\[ H_0: \mu_1 \neq \mu_2 \]

2) Real stage \( \alpha = 0.05 \)

3) Statistic formula used in hypothesis verification is:

\[ t = \frac{X_1 - X_2}{s}\sqrt{n_1 + n_2} \]

\[ S^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2} \]

Note:

\( X_1 \) : the average value of pre-test
\( X_2 \) : the average value of post-test

\( n_1 \) : the number of sample pre-test

\( n_2 \) : the number of sample post-test

\( S_1 \) : standards of deviation of pre-test

\( S_2 \) : Standard of derivation of post-test

\( S \) : Standard of deviation of both pre-test and post-test

4) The criteria of testing

1. Accept \( H_0 \) if \(-t (1-\alpha) \leq t \leq t (1- \alpha)\)

2. Reject \( H_0 \) if \(-t (1-\alpha) \geq t \geq t (1- \alpha)\)
CHAPTER III

METHODOLOGY OF RESEARCH

3. Methodology of Research

a. Method of Research

In this research, I used quasi-experimental method, in which the method was used statistically in technique to analyze the data.

b. Design of Research

This research used “one group pre-test and post-test design” as follow:

\[ O_1 \quad \times \quad O_2 \]

Notes: \( O_1 \) = Pre-Test

\( X \) = Treatment

\( O_2 \) = Post-Test

(Arikunto, 2010: 124)

Then, the procedures or steps of doing this research design are explained as follows:

d. Pre-Test
The pre-test was given to the students before conducting treatment. The aim of this test is to know the students' basic vocabulary mastery before applying English comic strip. The kind of test is multiple choices consisting of thirty numbers (30).

e. Treatment

The treatment was conducted by applying the media in teaching vocabulary to the students through English comic strip. I did the treatment about three weeks or six meetings with different topics.

f. Post-Test

Post-Test was given to the students after doing treatment. The aim of this is to know whether the English comic strip can influence significantly the students’ mastering vocabulary or not.

4. Population and sample

c. Population

According to Arikunto (2010:173) “a population is a set or collection of all elements processing one or more attributes of interest. The populations of this research are the students at the eighth grade of SMP Negeri 8 Kota Gorontalo. They are consist of 240 students.
d. **Sample**

According to Arikunto (2010:174) “Sample is part of the number or representative of population. I took the VIII class that consists of 30 students as the sample in this research. I took this class because the students’ mastery vocabulary is still low. Based on my observation, when I got some information’s from the English teacher, this class has a lower quality to understand and product vocabulary. In this research, I want to know the effect of comics strip to students’ mastery of English vocabulary.

a. **Variable of Research**

There are two variables in this research, namely:

3. Variable X (independent variable) is “comic strip”

4. Variable Y (dependent variable) is “the students’ mastering in English vocabulary”

b. **Technique of collecting the data**

In collecting the data, I used multiple choice tests as the instrument, it presented in the blue print bellow.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Multiple Choice Test</th>
<th>Details</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjectives</td>
<td>10</td>
<td>Students identify adjectives from the text.</td>
<td>10</td>
</tr>
<tr>
<td>Nouns</td>
<td>10</td>
<td>Students identify nouns from the</td>
<td>10</td>
</tr>
</tbody>
</table>
Verbs | 10 | Students identify verbs from the text. | 10
--- | --- | --- | ---

Total of Items | 30

a. Validity testing

The aim of validity testing is to verify the correlation between score of instrument and the total score of instrument the respondents (sample). To get the validity of the test, I use product moment formula.

\[ r_{xy} = \frac{\sum X \sum Y - \sum X \sum Y}{\sqrt{\sum X^2} \sqrt{\sum Y^2}} \]

Note:

\[ r_{xy} \]: the score of the correlation of the scores on the two halves of the test.

\[ N \]: the number of students in the sample

\[ \sum X \]: the sum of X scores

\[ \sum Y \]: the sum of Y scores

\[ \sum X^2 \]: the sum of the scores of X scores

\[ \sum Y^2 \]: the sum of the scores of Y scores
\[ \sum_{XY} \] : the sum of the products of X and Y scores for each student

(Arikunto, 2010: 213)

b. Reliability Testing

For testing reliability of the test, I use the formula as follows:

\[ r_{11} = \frac{kk - 1}{M - M/M/k/Vt} \]

Note:

\( r_{11} \) : reliability of instrument

\( Vt \) : total variants

\( k \) : number of items/test

\( M \) : the average of the scores

(Arikunto (2010: 232)

c. Technique of Analyzing the Data

The data of this research analyzed in quantitatively. There are two steps in analyzing the data; normality testing and hypothesis verification. The steps are explained as follows:

7. Normality Testing

The normality testing is the prerequisite of using t-testing. The aim of the normality analysis is to know whether the data is normal or not. In
analyzing the data, I use Liliefors method with the real stage $\alpha=0.05$ by following procedures:

1. Observation $X_1, X_2, X_3\ldots, X_n$ is become deviation $Z_1, Z_2, Z_3\ldots, Z_n$ by using the formula as follow:

$$Z_i = \frac{X_i - \bar{X}}{S}$$

**Note:**

$Z_i$: Standard of value

$X$: The average of total score

$S$: Total of score deviation

8. For each deviation uses distribution of normal and then counted the deviation by using the formula as follow:

$$F(Z_i) = P(Z \leq Z_i)$$

9. The next procedure is counting proportion $Z_1, Z_2, Z_3\ldots Z_n$ which is small or similar with $Z_i$. If this proportion is $S(Z_i)$

$$S, S(Z_i) = \text{amount } Z_1, Z_2, Z_3\ldots Z_n \leq Z_i N$$

10. Count the deviation of $(Z_i)$ and then set the absolute value.
11. Take the big value among the absolute value deviation, which is called as Lo

12. The criterion of analysis, the data is normal distribution if Lo<Llist

3. Statistical Hypothesis

In statistical hypothesis, I use t-test formula. This formula is used to find out the comic strip can influence towards the students’ mastery on English vocabulary or not. The formula as follow:

5) Assembling of the hypothesis that is tested

\[ H_0: \mu_1 = \mu_2 \]

\[ H_a: \mu_1 \neq \mu_2 \]

6) Real stage \( \alpha=0.05 \)

7) Statistic formula used in hypothesis verification is:

\[ t = \frac{X_1 - X_2}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \]

\[ s^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1 + n_2 - 2} \]

Note:

\( X_1 \) : the average value of pre-test
$X_2$ : the average value of post-test

$n_1$ : the number of sample pre-test

$n_2$ : the number of sample post-test

$S_1$ : standards of deviation of pre-test

$S_2$ : Standard of derivation of post-test

$S$ : Standard of deviation of both pre-test and post-test

8) The criteria of testing

1. Accept $H_0$ if $-t (1-12\alpha) \leq t \leq t (1-12\alpha)$

2. Reject $H_0$ if $-t (1-12\alpha) \geq t \geq t (1-12\alpha)$