

CHAPTER III

RESEARCH METHODOLOGY

This chapter discussed research place and time of the study, research type of the study, population and sample of the study, data collecting procedure, Instrument of the study, Instrument validity, reliability, data analysis procedures.

A. Place and Time of The Study

The study conducted at the tenth-grade students of SMA Nusantara Palangka Raya which is located on Jl. Dr. Wahidin Sudirohusodo No. 18 Palangka Raya. The research has been conducted for two months. It was August-September.

B. Research Type of The Study

This study used quantitative design. It was quantitative design because quantitative was the data that from of number using statistic data. According to Donald Ary, “Quantitative research a gunnery employing operational definitions to generate numeric data to answer predator mined hypotheses or questions.”⁸⁹ The design of this study was quasi – experimental design. This study used quasi – experimental design of this study to see the effect of cartoon towards students’ writing skill in narrative text. According to Millan, the purpose of quasi-experimental design was to determine cause and effect between independent and dependent variable. A common situation for implementing quasi-experimenta

⁸⁹Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *Introduction To Research In Education Eight Edition*,, Canada: Wadsworth Engage Learning, 2010,p. 648.

study involves several classes or schools that used to determine the effect of curricular materials or teaching methods.⁹⁰ In this study, cartoon was the independent variable which may cause/ influence students' writing skill in the narrative text as the dependent variable.

This study used pre-test and post-test on the control and experiment group, to see the effectiveness of cartoon by looking pre-test, and post-test measurement and comparing the gain scores between both classes. The effectiveness can be seen from the improvement of students' score of experiment group in the post-test. The score was taken by the writer after students were given some treatments and from the comparison of both classes. The experiment group was given the technique by using cartoon in the classroom and the controlling group without using cartoon.

According to Morgan, the best alternative for an experimental design was a quasi-experimental format. The *nonrandomized control group, pretest–posttest design* was one of the most widely used quasi-experimental designs in educational research. The design was as follow⁹¹ :

⁹⁰James H. McMillan, Sally Schumacher, *Research in Education Evidence-Based Inquiry 6th Edition*, (Boston: Allyn and Bacon, 2006), p. 24.

⁹¹Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *Introduction to Research in Education*, Canada: Wadsworth Engage Learning, 2010, p..317

Tabel 3.1**The Schema of Quasi Experimental design**

Subject	Pre-test	Treatment	Post-test
E	Y_1	X	Y_2
C	Y_1	-	Y_2

Where are:

E : Experimental group used cartoon

C : Control group used picture

Y_1 : Pre – test

X : Treatment

Y_2 : Post – test

Both of experiment group and control group took some pre test and post test, and the study was done at the same time. The experiment group learned English by using the cartoon (the treatment) and the control group taught by the traditional method, where the students just taught by using the picture and they asked to tell the picture in the form paragraph.

C. Population and Sample of the Study

1. Population

The population was all cases, situation, or individuals who share one or more characteristics.⁹² The population of this study was the tenth grade of SMA Nusantara Palangka Raya. The numbers of the population were 33 students. It consisted of two classes and each

⁹²Ibid, p.231.

class consists of 13-20 students.

**Table 3.2 The Number of the Tenth Grade Students of
SMA Nusantara Palangka Raya**

No	Classes	The Number of Students
1	X-1	20
2	X-2	13
	The Total Number	33

2. Sample

The small group that called a *sample* and the larger group about which the generalization was made called a *population*. A **population** was defined as all members of any well-defined class of people, events, or objects. For example, in this study which students in American high schools constitute the population of interest, you could define this population as all boys and girls attending high school in the United States. A **sample** was a portion of a population.⁹³ This study used the sample of the population, the researcher applies cluster sampling. Cluster sampling was a probability sampling technique that randomly selects and used whole naturally occurring group such as intact classrooms or entire voting precincts as the samples (clusters).⁹⁴ The writer took two classes, class X-1 as an experimental class and class X-2 as a control class which would be related to this study.

⁹³Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *Introduction to Research in Education, Eight Edition*, Canada: Wadsworth Engage Learning, 2010. p.148 .

⁹⁴ Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *Introduction to Research in Education, Eight Edition*, Canada : Wadsworth Engage Learning, 2010. p. 666

D. Data Collecting Procedure

The procedure to collected the data consists of some steps as follows:

1. The writer observed on Monday, October 5, 2015, the school by headmasters' permission.
2. The writer asked the class with the English teacher who taught English in the class that become the class of research:
 - a. The number of the class.
 - b. The number of the students.
3. The writer determined the class into experiment group and control group.
4. The writer gave pre-test on Monday, August 01st, 2016 to the students consist of X-1 as the experiment class and the writer gave pre-test on Wednesday, August 03rd, 2016 to the students consist of X-2 as the control class, writer gave writing test to the students' in the form of essay test consist of five items.
5. The writer taught of the experimental class using cartoon story. (see appendix 2)

Table 3.3 Procedure in Teaching Writing (Meeting 1 till 4)

Teaching process using cartoon story (for experimental group)		
No.	Step of writing	Teacher's activities
1.	Pre writing activity	<ul style="list-style-type: none"> - Prepare picture narrative text of cartoon story and material narrative text. - Introduce the Brainstorming and media

		<p>cartoon story.</p> <ul style="list-style-type: none"> - The writer explained what narrative text and also explained parts or generic structures. - The students write the story based on the topic that has given by the teacher.
2.	Whilst writing activity	<ul style="list-style-type: none"> - Gave the pictures narrative text of cartoon story to the students as the instructional media for writing stage. - Asked the students to write their own narrative text based on the pictures of cartoon story. - The students began to write a narrative text by pictures of cartoon story. - Discussed the answer with the students.
3.	Post writing activity	<ul style="list-style-type: none"> - Collecting the students' work. - Asked the students to infer what they understand about the narrative text and cartoon story.

6. The writer teach the control class without cartoon story. (see appendix 2)

Table 3.4 Procedure in Teaching Writing (Meeting 1 till 4)

Teaching procedure using picture (for control class)		
No.	Steps of writing	Teacher's activities
1.	Pre writing activity	- Prepare some piece of picture show the teacher did brainstorming toward knowledge of narrative text.
2.	Whilst writing activity	<ul style="list-style-type: none"> - Gave the picture narrative text to the students as the instructional media for writing stage. - Asked the students to write their own narrative text based on the picture. - Discussed the answer with the students.
3.	Post writing activity	<ul style="list-style-type: none"> - Collecting the students' work. - Asked the students to infer what they understand about the narrative text.

7. The writer gave post-test on Saturday, August 20, 2016, to the students consist of X-1 as the experiment class and the writer gave post-test on Thursday, August 25th, 2016 X-2 as the control class writer gave writing test to the students' in the form of Essay test consist of 3 items.
8. The writer gave score to the data from experiment group and control group.
9. The writer started to analyse the obtain data from the pre test and

post test using t-test.

10. The writer interpreted the analysis result.

11. The writer concluded the activity.

Cartoon story as experimental study toward students' writing score is the concept of this study. It is limited to the tenth Grade students at SMA Nusantara Palangka Raya in studying Narrative text.

To measure the standard score of the tenth-grade students at SMA Nusantara Palangka Raya in writing narrative, the writer used the Evaluation standard of English Subject which used by the English teacher at SMA Nusantara Palangka Raya. The minimal completeness Standard of English subject at SMA Nusantara Palangka Raya was 65. It meant that the students pass the test if they got 65 or more. But they got under 65, it meant they do not pass the test.⁹⁵ We saw the standard in the following table;

Tabel 3.5 Evaluation Standard of English Subject

Interval	Interpretation
65-100	Master
0-64	Not master

1. Tabulating

The last to process the data is inserted into a certain table and arrange the numbering then calculated them.

⁹⁵Standar of English subject in SMA Nusantaraof Palangka Raya Academic year 2016/2017.

E. Instrument of the Study

Instruments of the study are very needed in research. It was because the instruments were tools to get the data of the study, in which the data are the important things to help the writer in answering the problem of the study and also to prove the hypothesis. The data also needed to find the aim of the study.

Test

Tests were valuable measuring instruments for educational research. A test was a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. This score, based on a representative sample of the individual's behavior, was an indicator of the extent to which the subject the characteristic being measured.⁹⁶

The test used to find out of the result of students' achievement in learning writing and it was the main technique in collecting data. This study collected the main data from pre-test and post-test. From the two tests, this study found the effectiveness of using cartoon story towards students' writing skill in the narrative text at the tenth grade of Nusantara Palangka Raya. A pre-test was given before any teaching. Pre-test was given because this study needs to compare the scores to the post-test scores which was given after the treatment. A post-test as the last test was given to get the quantitative data about their writing ability after the writer taught narrative text with cartoon story. This study used essay test in this study.

⁹⁶ Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *Introduction to Research in Education*, Canada: Wadsworth, Cengage Learning, 8th, Edition, P. 201.

F. Instrument Validity

1. Content Validity

Sudijono in Maya syarah stated the content validity of a learning result test was the validity that was a gain after doing the analyze, investigation or examination of the content that was contained in the learning result test.⁹⁷ Djiwandono in Maya Sarah stated content validity demand a content suitability between a skill being measured and a used test to measure.⁹⁸ Dornyei state content validity concern expert judgment about test content.⁹⁹ In this study content validity, the writer constructs the test based on what material in the syllabus.

2. Face validity

Face validity of test was when the test was indeed testing what it claims to test; the test samples the actual content of what the learner has achieved or expects to achieve.¹⁰⁰ Therefore, the appearance of the test in the study as follows; the test items used English, consisted of narrative text discourse, and the test was suitable with the syllabus of English writing for the tenth-grade students of SMA Nusantara Palangka Raya.

For face validity of the test items as follow:

- a) The test was written test in essay test instruction.

⁹⁷Mayasyarah, *The Effectiveness of Video Compact Disc as an Audiovisual Medium toward The Students' Listening Comprehension Score of The Tenth Grade Students at MAN Model of Palangka Raya*, Unpublished Thesis, p. 16.

⁹⁸ Ibid

⁹⁹Zoltan Dornyei, *Research Method in Applied Linguistics Quantitative, Qualitative A Mixed Methodologies*, p. 51.

¹⁰⁰H, douglas brown, *teaching by principles: an interactive approach to language pedagogy*. San fransisco:longman, p 388.

- b) The evaluation was based on the scoring system.
- c) Kind of the essay was writing narrative text.
- d) The Language used was English
- e) The test was suitable with the syllabus of English writing for tenth-grade students at SMA Nusantara 1 Palangka Raya.

3. Construct Validity

Dornyei stated construct validity show how the test results conform to a theory of which the target construct was a part.¹⁰¹ Djiwandono in Mayasyarah states the construct validity was to show the finding score that reflects the same construct with the target skill of its measuring.¹⁰² The writer formulates the test item as a test of the writing test. The test used to measure the writing skill of the students at the tenth grade of SMA Nusantara Palangka Raya in Academic year 2016/2017.

In this study, the validation of instrument was mainly direct to the content validity. According to Sudijono in Mayasyarah, the validity of learning result test was the validity that was a gain after doing the analyze, investigation or exam of the content that was contained in the learning result test.¹⁰³ Related to the writing test, the content validity was check by exam and the test use to measure the

¹⁰¹Zoltan Dornyei, *Research Method in Applied Linguistics Quantitative, Qualitative A Mixed Methodologies*, p. 51.

¹⁰²Mayasyarah, *The Effectiveness of Video Compact Disc as an Audiovisual Medium toward The Students ' Listening Comprehension Score of The Tenth Grade Students at MAN Model of Palangka Raya*, Unpublished Thesis, p. 17.

¹⁰³Mayasyarah, *The Effectiveness of Video Compact Disc as an Audiovisual Medium toward The Students' Listening Comprehension Score of the Tenth Grade Students at MAN Model of Palangka Raya*, Unpublished Thesis, p. 16.

objective. The writer was used inter-rater method (test of validity). Inter-rater was two rater who scores the students' writing to get the score compositions as possible. The writer used product moment correlation as the formula to calculate the validity from the test result.¹⁰⁴

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\} \{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Where:

r_{xy} : Index Correlation Number “r” product moment.

N : Number of Case.

ΣXY : Multiplication Result between Score X and Score Y.

ΣX : Total Value of Score X.

ΣY : Total Value of Score Y.

Interpretation:

$r_{xy} > r_t$ = Valid

$r_{xy} < r_t$ = Invalid

According to Riduwan in Maya syarah, he states the criteria of interpretation the validity:¹⁰⁵

0.800 - 1.000 = Very High Validity

0.600 - 0.799 = High Validity

0.400 - 0.599 = Fair Validity

¹⁰⁴Anas Sudijono, *Pengantar Statistik Pendidikan*, Jakarta: PT. RajaGrafindo Persada, 1997, p. 193.

¹⁰⁵Mayasarah, *The Effectiveness of Video Compact Disc as an Audiovisual Medium toward the Students' Listening Comprehension Score of the Tenth Grade Students at MAN Model of Palangka Raya*, Unpublished Thesis, p. 18.

0.200 - 0.399 = Poor Validity

0.201 - 0.199 = Very Poor Validity

G. Reliability

Reliability indicated how consistent a test measure whatever it does measure.¹⁰⁶ The reliability of a measuring instrument was the degree of consistency with which it measures whatever it was measure.¹⁰⁷ Reliability was a concern with the effect of such random error of measure on the consistency of the score. But some error involved in measures were predictable or systematic.¹⁰⁸

Reliability procedures were a concern with determining the degree of inconsistency in score caused by random error.¹⁰⁹ A reliable test was consistent and dependable.¹¹⁰ Scores reliability was the consistency of scoring by two or more scores.¹¹¹

A simple way to determine the reliability of rating was to have two or more observer independent rate the same behavior and then correlate the observers' ratings. The result correlation called the interrater.¹¹² It indicated accuracy in the scoring composition of a rater incorrect the students' test score twice.

In this study, the writer used inter-rater to correct the student's score. The

¹⁰⁶Donald Ary, Lucy Cheser Jacobs & Asghar Razavich, *introduction to research in education*, Eight Edition, 2010, p. 224.

¹⁰⁷Ibid, p. 236.

¹⁰⁸Ibid, p.238.

¹⁰⁹Ibid, p.239.

¹¹⁰H. Douglas Brown, *Teaching by Principles an Interactive Approach to Language Pedagogy*, Second Edition, p. 386.

¹¹¹Ibid, p. 387.

¹¹²Donald Ary, Lucy Chesar Jacobs, Chris sorensen, Asghar Razavieh, *introduction to research in education*, Eight Edition, 2010, p. 256.

rater was the self writer, Dra. Femie Karolina Borang and Tatar Rimalati, S.Pd as a teacher of English in SMA Nusantara Palangka Raya. The writer used analytic scoring. In analytic scoring, scripts were rated on several aspects of writing or criteria rather than gave a single score. Depending on the purpose of the assessment, scripts might be the rate on such feature as content, organization, cohesion, register, vocabulary, grammar, or mechanic.¹¹³

H. Data Analysis Procedures

In analyzing data, the writer did the following procedures :

1. Collecting the students' score of pre-test and post-test
2. Arranging the obtained score into the distribution of frequency of score table.
3. Calculating mean, median, standard deviation and standard error of variable X_1 from the experiment group.
4. Calculating the mean, standard deviation, and standard error of variable X_2 from the control group.
5. The calculating the standard error from the difference mean between variable X_1 and X_2 .
6. The writer used manual calculation t-test and SPSS 16 to answer the problem of the study with formula:

¹¹³Sara Cushing Weigle, *Assessing Writing*, series editor: J. Charles Akderson and Lyle F. Bachman. New York: Cambridge University Press, 2002, p. 114.

- a. It calculated the standard error of the difference between X-1 and X-2 as follow:¹¹⁴

$$SE_{M1-M2} = \sqrt{(SE_{M1})^2 + (SE_{M2})^2}$$

- b. Then, it inserted to the formula to get value of t_{observed} as follow:¹¹⁵

$$T_o = \frac{M1-M2}{SE_{M1-M2}}$$

Which the criteria:

If $t_{\text{observed}} \geq t_{\text{table}}$, it means H_a was accepted and H_o was rejected.

If $t_{\text{observed}} \leq t_{\text{table}}$, it means H_a was rejected and H_o was accepted

where:

$M1 - M2$: Differentiation of Two Means.

SE_{M1-M2} : The Standard Error of the Difference between Two Means. With the criteria:

SE_{M1-M2} : If $t_{\text{test}} > t_{\text{table}}$: H_a is accepted and H_o is rejected.

If $t_{\text{test}} < t_{\text{table}}$: H_a is rejected and H_o is accepted.

7. Interprets the result of t_{test} . Previously, it accounted the degrees of freedom (df) with the formula:¹¹⁶

$$Df = (N1 + N2 - 2)$$

¹¹⁴ Triwid syafarotun Najah, p.97

¹¹⁵ Ibid,

¹¹⁶ Anas Sudijono, *Pengantar Stastistik Pendidikan*, Jakarta: Rajawali Press, 2012, p.285.

Where:

Df: Degrees of freedom

N1: Number of subject group 1

N2: Number of subject group 2

2: Number of variables

After that, the value of t_{test} consulted on the t_{table} at the level of significance 1% and 5%. In this study, the writer used the level of significance at 5%. If the result or t_{test} was higher than t_{table} , it meant H_a was accepted. But if the result of t_{test} was lower than t_{table} , it means H_o was accepted

8. After calculated the data by using manual, then calculated the result t_{test} to test the hypothesis of the study by using SPSS 16 program.
9. Then, the interpretation was made to answer the research problem.
10. The last discussed and concluded the result of data analysis.