

CHAPTER III

RESEARCH METHOD

A. Research Design

This research use quantitative method. It related to the calculation and analysis of numerical data. Quantitative approach basically is used for testing hypothesis and concludes the result to know the answer. By using this approach, the difference or the relation between the variables will be gotten. In doing so, the researcher intends to use quantitative to complete this study.

This study is aimed at identify the effectiveness of clustering technique to improve students' ability in writing analytical expositions. In this research, the researcher uses experimental research which is one regarded as the most sophisticated research method for testing a hypothesis. Experiments are designed to collect data in such a way that threats to the reliability and validity of the research are ministered (Nunan, 1993: 47). Therefore, the researcher carried out an experimental research (quasi experimental with non-randomized control group) pretest-posttest design was used as recommended by Ary et al (2002:315).

The researcher carried out with two classes, they were experiment and control class with pre-test and post-test as research tools. The pre-test and post-test were similar for experimental and control class. The goal is to

solve the actual problem that faced recently and collecting data to design, explain, and analyze the Effectiveness of Clustering Technique in order to Improve Students' Ability in Writing Analytical Expositions at Ma Thalabul Irsyad Pulau Petak Kapuas Regency.

Table 3.1 Table of Research

Class	Pre-Test	Treatment	Post-Test
A	Y_1	X_1	Y_2
B	Y_1	X_1	Y_2

Terms and symbols:

X_1 : The treatment in this research is giving clustering technique

X_2 : The treatment in this research is not giving clustering technique

Y_1 : The implementation of the pre test

Y_2 : The implementation of the post test

A : The experimental class. The class that will be given clustering technique

B : The control class. The class that will be not given clustering technique

B. Research Setting

This research was taken in MA Thalabul Irsyad which located at Jalan Sei Tatas Kecamatan Pulau Petak Kapuas regency. The researcher has chosen this place because in teaching and learning English especially in writing in the school is not more interesting because the students had fewer differentiations in their capability to learn English, and the students have assumption that English is difficult, the students did not understand how to

write in English very well, so they still have difficulties to write the sentence or paragraph. Schedule of the teaching and learning implementation can be seen in the table 3.2.

Table 3.2 Implementation of Teaching and Learning in Experiment Class

Meeting	Day/Date	Time	Topic
1	Tuesday, 29 th August 2017	3-4	Pre-test
2	Wednesday, 30 th August 2017	6-7	Global warming
3	Thursday, 31 th August 2017	5-6	Childhood
4	Tuesday, 5 th September 2017	3-4	The Importance of Library
5	Wednesday, 6 th September 2017	6-7	Post-test

Table 3.2, explained the implementation of teaching and learning for the first meeting and the last meeting with difference topic and time (look at appendix 9). While the planning of teaching and learning implementation in experiment class was more complex than in control class. Besides, the researcher planned the lesson plan, the material aids, the evaluation, the researcher must plan and design clustering technique to students. In this research, the researcher design cluster/mapping concept that consist of making sentences and completing with paragraph.

Similar with control class, implementation of teaching and learning was done once for pre-test, three times for treatment, and once for pre-test. Schedule of the teaching and learning implementation can be seen in table 3.3 (for details see appendix 9) :

Table 3.3 Implementation of Teaching and Learning in Control Class

Meeting	Day/Date	Time	Topic
1	Tuesday, 29 th August 2017	3-4	Pre-test
2	Wednesday, 30 th August 2017	6-7	Global warming
3	Thursday, 31 th August 2017	5-6	Childhood
4	Tuesday, 5 th September 2017	3-4	The Importance of Library
5	Wednesday, 6 th September 2017	6-7	Post-test

C. Population and Sample of the research

1. Population

Population is defined a set (or collection) of all elements possessing one or more attributes of interest Arikunto (2003:115). Quantitative researchers attempt to discover something about large group individuals by studying a much smaller group. The larger group that they wish to learn about is called a population (Gall, 2003:167).

The population to which the researcher would like to generalize the result was the eleven year students of senior high school in MA Thalabul Irsyad Sei Tatas Pulau Petak Kapuas Regency academic year 2016/2017. The subject of research is the exact program students in 11th grade.

2. Sample

Sample is a part that can represent all the population observed, it is called sample research when we want to generalize the sample research result. The smaller group they actually study is called a sample. In

quantitative research, sampling refers to this process of selecting a sample from a defined population with the intent that the sample accurately represents that population (Gall, 2003:167).

The researcher chose XI A (science program) class XI B (social program) as the sample of the research, it consists of 31 students. The researcher chose XI A (science program) XI B (social program) as the sample research because the teacher suggested to do this research there. The researcher chose that class because of some reasons: (a) The students in that class had fewer differentiations in their capability and achievement than another class, so it will more help achieving my research target, (b) The students in that class had better average than another class and easier to adapt with new people or teacher, (c) At that time, the class was able to have a research than another lass because there was daily examination in another class.

Table 3.2 the Subject of Research

No	Classes		Total
	Experiment	Controll	
1.	XI A		19
2.		XI B	12

The subject of this research are two classes, they are experiment class and control class. For experiment class the researcher choose XI A (science program) and control class is XI B (social program).

D. Research Instruments

Research instrument, they are follows:

1. The writing process information is displayed on bulletin boards and whiteboard.
2. Writing down a word or phrase in the center of blank sheet and circling it, the logic of the sequence and connections.
3. Immediately writing down related words or phrases which come into mind, circling each of them, and making line which connects each to the main.

For scoring technique of this research the researcher took a scoring technique of writing assessment by Brown (2004:244-245).

Table 3.3 Scale for Rating Composition Tasks

No	Components	Score	Characteristics
1.	Organization: Introduction, body and conclusion	18-20	<ul style="list-style-type: none"> - Appropriate title, effective introductory paragraph, topic is stated, leads to body - Transitional expression used - Arrangement of material shows plan (could be outlined by reader)
		15-17	<ul style="list-style-type: none"> - Supporting evidence given for generalizations - Conclusion logical and complete - Adequate title, introduction, and conclusion

		12-14	<ul style="list-style-type: none"> - Body of recount essay is acceptable, but some evidence may be lacking, some ideas aren't fully developed - Sequence is logical but transitional expressions may be absent or misused
		6-11	<ul style="list-style-type: none"> - Mediocre or scant introduction or conclusion - Problems with order of ideas in body - The generalizations may not be fully supported by the evidence given - Problems of organization interfere
		1-5	<ul style="list-style-type: none"> - Shaky or minimally recognizable - Organization can barely be seen - Severe problems with ordering of ideas - Lack supporting evidence - Conclusion weak or illogical - Inadequate effort at organization - Absence of introduction or conclusion - No apparent organization of body - Severe lack of supporting evidence - Writer has not made any effort to organize the composition (could not be outlined by the reader)
2.	Content : Logical development	18-20	<ul style="list-style-type: none"> - Analytical essay addresses the assigned topic - The ideas are concrete

	of ideas	15-17	<ul style="list-style-type: none"> - and thoroughly developed - No extraneous material - analytical essay reflects thought - Analytical essay addressee the issues but misses some points - Ideas could be more fully developed - Some extraneous materials present
		12-14	<ul style="list-style-type: none"> - Development of ideas not complete or recount essay is somewhat off the topics - Paragraphs aren't divided exactly right
		6-11	<ul style="list-style-type: none"> - Ideas incomplete - analytical essay does not reflect careful thinking or was written - Inadequate effort in area of content
		1-5	<ul style="list-style-type: none"> - analytical essay is completely inadequate and does not reflect college level work - No apparent effort to consider the topic carefully
3.	Grammar	18-20	<ul style="list-style-type: none"> - Native-like fluency in English grammar - Correct use of relative clause, prepositions, modals, articles, verb forms and tense sequencing - No fragments or run-on sentences
		15-17	<ul style="list-style-type: none"> - Advance proficiency in English grammar - Some grammar problems

		12-14	<p>don't influence communication, although the reader is aware of them</p> <ul style="list-style-type: none"> - No fragment or run-on sentences - Ideas are getting through to the reader, but grammar problems are apparent and have a negative effect on communication - Run-on sentences or fragments present
		6-11	<ul style="list-style-type: none"> - Numerous serious grammar problems interfere with communication of the writer's ideas - Grammar review of some area clearly needed - Difficult to read sentences
		1-5	<ul style="list-style-type: none"> - Severe grammar problems interfere greatly with the message - Reader can't understand what the writer was trying to say - Unintelligible sentence structure
4.	Punctuation, spelling, and mechanics	18-20	<ul style="list-style-type: none"> - Correct use of English writing conventions - Left and right margins, all needed capitals, paragraphs intended, punctuation and spelling - Very neat
		15-17	<ul style="list-style-type: none"> - Some problems with writing conventions or punctuations - Occasional spelling errors - Left margin correct

		12-14	<ul style="list-style-type: none"> - Paper is neat and legible - Uses general writing conventions but has errors - Spelling problems distract reader - Punctuation errors interfere with ideas
		6-11	<ul style="list-style-type: none"> - Serious problems with format of paper -Parts of essay not legible - Errors in sentence punctuation and final punctuation - Unacceptable to educated readers
		1-5	<ul style="list-style-type: none"> - Complete disregard for English conventions - Paper illegible - Obvious capital missing, no margins, severe spelling problems
5.	Style and quality of expression: Vocabulary	18-20	<ul style="list-style-type: none"> - Precise vocabulary usage - Use of parallel structures - Concise - Register good
		15-17	<ul style="list-style-type: none"> - Attempts variety - Good vocabulary - Not wordy - Register OK - Style fairly concise
		12-14	<ul style="list-style-type: none"> - Some vocabulary misused - Lack awareness of register - May be too wordy
		6-11	<ul style="list-style-type: none"> - Poor expression of ideas - Problems in vocabulary - Lacks variety of structure
		1-5	<ul style="list-style-type: none"> - Inappropriate use of vocabulary

			- No concept of register or sentence variety
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(Brown, 2004:244-245)

From the table 3.2 above are five items those are organization (introduction, body and conclusion), content (logical development of ideas), grammar, punctuation, spelling and mechanics, style and quality expression (vocabulary), and the maximum score is 20 for each item. If the students got maximum score, they got 100. To get the mark of each student, the scoring considered the five components above.

Then the researcher classified the score of the students to a category as the table below to make it easier to be understood. The classification of students' achievement is as stated by Harris in Turasih (2008:41).

Table 3.4 Classification of Students' Score

No	Score	Categories
1	90-100	Excellent
2	80-90	Very good
3	70-80	Good
4	60-70	Fair
5	50-60	Poor
6	Less than 50	Very poor

E. Data Collection Procedure

The processing of data and technique of collecting data and to collect data in this research, the researcher uses some technique which consist of:

1. Test (written test)

a. Pre test

The pretest was conducted on August, 10th 2017. The pretest was conducted to the students' mastery in writing before getting treatment. It means the researcher wants to know the students' mastery in writing before the teacher teaching and learning English using of clustering technique. The pre-test, the test in experiment class same with the test in control class. The students class XI A (science program) as experiment class and the students class XI B (social program) as control class. For the test, writing down a words or phrase in the paper with the cluster concept circle center, the logic of the sequence and connections, to be a sentences and completely with paragraph analytical exposition.

b. Treatment

In the treatment, there are five meetings, the first meeting on August, 29th 2017, the second meeting on August, 30th 2017, and the third meeting on August 31st 2017. In each meeting the students are uses clustering technique in experiment class, and each meeting spends 80 minutes.

c. Post-Test

The post test was conducted on September 5th 2017 and the five meeting on September 6th 2017. In post-test, the students class XI A (science

program) and the student class XI B (social program) of MA Thalabul Irsyad will given the assessment like pre-test. It means the researcher wants to know the students' mastery in writing after the teacher teaching and learning English using of clustering technique. The post test was taught by using clustering technique and the control class without using clustering technique. The assessment is not the same. But for the level of assessment are same with pre-test. For the test, writing down a word or phrase in the center of blank sheet and circling, the logic of the sequence and connections, to be a sentences and completely with paragraph analytical exposition.

2. Observation

This technique is used to observe students learning process in the classroom.

F. Data Analysis Procedure

1. Technique of Data Processing

In processing the data, the researcher uses some technique such as:

a. Editing

This technique is used to check back all of the collected data to make sure the researcher that they already complete or not.

b. Coding

The researcher classified all the data that have been edited before in accordance with their kinds and by making certain codes on all collected data.

c. Scoring

This technique is used to compose and put the data into table and count the right answer's frequency. In scoring content, the scoring started ranging from very good criteria until very poor criteria.

d. Tabulating

The researcher composes and puts the data into a table and then counts its percentage by using the following formula:

$$P = \frac{F}{N} \times 100$$

P = Percentage

F = The frequency of answer from respondents for each item

N = Number of respondents

2. Data Analysis Procedure to the Students' Improvement

To conduct an analysis of the first formulation of the problem, that is the students' English between students taught by clustering technique in writing analytical expositions and students taught without using clustering technique in writing analytical expositions, the research uses analytical

techniques comparative test “t” (Students’ test) by the formula of Anas Sudijono (2009: 297-299):

$$T = \frac{M_1 - M_2}{SE\ M_1-M_2}$$

Description:

T = Tests are being sought

M1 = Mean students taught by using clustering technique

M2 = Mean students taught without using clustering technique

SE M1-M2 = Standard error difference in mean students’ ability in writing who are taught by using clustering technique in writing analytical expositions and taught without using clustering technique in writing analytical expositions.

This technique is used to analyzed truth or wrong about hypothesis of the research. If the result of the test (to) is same or higher than *ttable* (tt), then Zero hypothesis (Ho) is rejected, but if the result of test (to) less than *ttable* (tt) then, Zero hypothesis (Ho) is accepted.

The application way to use student “t” or test “t” or (t) code formula:

- a. Looking for Mean Variable I by using the following formula:

$$M_x \text{ or } M_1 = \frac{\sum x}{N_1}$$

M_1 : Mean of the control class of MA Thalabul Irsayad Sei Tatas

$\sum x$: Accumulative of the total score of the control class of MA Thalabul Irsayad Sei Tatas

N_1 : Number of subject of the experiment class of MA Thalabul Irsayad Sei Tatas

b. Looking for Mean Variable II by using the following formula:

$$M_y \text{ or } M_2 = \frac{\sum y}{N_2}$$

M_2 : Mean of the experiment class of MA Thalabul Irsayad Sei Tatas

$\sum y$: Accumulative of the total score of the experiment class of MA Thalabul Irsayad Sei Tatas

N_2 : Number of subject of the experiment class of MA Thalabul Irsayad Sei Tatas

c. Looking for standard Deviation for variable I by using the following formula:

$$SD_1 = \sqrt{\frac{\sum (x - \bar{x})^2}{(N-1)}}$$

SD_1 : Standard Derivation of the control class of MA Thalabul Irsayad Sei Tatas

$\sum x^2$: Accumulative of the quadrat of deviation of the control class of MA Thalabul Irsayad Sei Tatas

N_1 : Number of subject of the experiment class of MA Thalabul Irsayad Sei Tatas

- d. Looking for standard Deviation for variable II by using the following

formula:

$$SD_y \text{ or } SD_2 = \frac{\sqrt{\sum y^2}}{N_2}$$

SD_2 : Standard Derivation of the experiment class of MA Thalabul

Irsayad Sei Tatas

$\sum y^2$: Accumulative of the quadrat of deviation of the experiment class
of MA Thalabul Irsayad Sei Tatas

N_2 : Number of subject of the experiment class of MA Thalabul
Irsayad Sei Tatas

- e. Looking for standard error for Mean Variable I by using the following

formula:

$$SD_{Mx} \text{ or } SE_{M1} = \frac{SD_1}{\sqrt{N_1 - 1}}$$

SE_{M1} : Standard Error of the control class of MA Thalabul Irsayad Sei
Tatas

N_1 : Number of subject of the experiment class of MA Thalabul
Irsayad Sei Tatas

1 : Value of constant

- f. Looking for standard error for Mean Variable II by using the following

formula:

$$SD_{my} \text{ or } SE_{M2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

SE_{M2} : Standard Error of the experiment class of MA Thalabul Irsayad Sei Tatas

N_2 : Number of subject of the experiment class of MA Thalabul Irsayad Sei Tatas

I : Value of constant

- g. Looking for standard Error for comparative Mean Variable I and Mean variable II by using the following formula:

$$SE_{M1-M2} = \sqrt{SEM_1^2 + SEM_2^2}$$

SE_{M1-M2} : Standard error for comparative mean of control class and experiment class of MA Thalabul Irsayad Sei Tatas

SE_{M1}^2 : Quadrat result of standard error of mean of the control class of MA Thalabul Irsayad Sei Tatas

SE_{M2}^2 : Quadrat result of standard error of mean of the experiment class of MA Thalabul Irsayad Sei Tatas

- h. Looking for t, by using the following formula:

$$T_{test} = \frac{M_1 - M_2}{SE_{M1-M2}}$$

T : value of t observation

- i. Giving interpretation for “t” with consulting (“t”table):

- Looking for Degree of Freedom :

$$Df / db = (N_1 + N_2) - 2$$

Df / db = Degrees of Freedom

N_1 = number of subject of the control class of MA Thalabul Irsayad Sei

Tatas

N_2 = number of subject of the experiment class of MA Thalabul Irsayad

Sei Tatas

2 = value of degree of freedom for two variables

- Consulting score of “df/db” with “t table”

Ttable = value of critic “t”

- In significant degrees t *tabel* 5%
- In significant degrees t *tabel* 1%
- Making hypothesis interpretation :
 - *Ho* (Zero Hypothesis): there is no significant difference
 - *Ha* (Alternative Hypothesis): there is a significant difference
 - Consulting “*to*” with “ t *table*”

If the value of “*to*” is higher than the value of t *tabel*”

Ho is rejected, *Ha* is accepted.

If the value of “*to*” is lower than the value of t *tabel*”

Ho is accepted, *Ha* is rejected