CHAPTER III

METHODS AND PROCEDURES

In this chapter present: (1) research method; (2) research variables; (3) operational definitions; (4) population and sample; (5) data collection; (6) research instrument analysis; (7) readability test; (8) research teaching schedule; and (9) data analysis.

3.1 Research Method

In this study, I used an experimental research. Fraenkel et al. (2012) state experimental research is the best way to establish cause and effect relationships among variables. In this research, quasi-experimental design was used to collect, process, analyzes the data to get conclusion of the research. Specifically, one of the quasi-experimental design was used in this study was pretest and posttest non-equivalent group design. The design involved experimental and control group which both was given a pretest and posttest. In addition, Cohen, Lawrence and Keith (2007) state that formulate the design as follows:

Experimental O_1 X O_2

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Control O_3 O_4

Where:

O1 = The pretest in experimental group

O2 = The posttest for the experimental group

O3 = The pretest of the control group

O4 = The posttest of the control group

X = Treatment to experimental group taught using discussion web strategy

------ = The dashed line separating the parallel rows in the diagram of the non-equivalent control group indicates that the experimental and control groups have not been equated by randomization-hence the term ‘non equivalent’.

This study included two groups mainly experimental group and control group. The experimental group was taught by using discussion web strategy. Meanwhile, the control group was taught by using the strategy that was usually used by teacher.

3.2 Research Variables

According to Fraenkel et al. (2012) variable is a concept a noun that stands for variation within a class of objects. In this study there were two kinds of variables, they were independent variable and dependent variable.

Furthermore, Fraenkel et al. (2012) argue that independent variable is presumed to affect (at least partly cause) or somehow influence at least one other variable. Meanwhile, a dependent variable is the variable that the independent variable is presumed to affect. The independent variable of this study was discussion web strategy and the dependent variable was the eleventh grade students’ hortatory exposition reading achievement at SMA IBA Palembang.

3.3 Operational Definitions

The title of this study is “Teaching Hortatory Exposition Reading by Using Discussion Web Strategy to the Eleventh Grade Students of SMA IBA

Palembang". From the title, I explained some terms. They were hortatory exposition reading and discussion web strategy.

1. Hortatory Exposition Reading

   Hortatory exposition reading was the students' reading activity of hortatory exposition by using their comprehension. The students were encouraged to comprehend the purpose of hortatory exposition text, to identified the main ideas and the important parts of the text, and also able to answered the question related to the text.

2. Discussion Web Strategy

   Discussion web was strategy with used graphic aids to encouraged students to considered different points of view about an issue, and helped students thought critically about what they had read. In this study, this strategy was used as a treatment to the experimental group.

3.4 Population and Sample

3.4.1 Population

Fraenkel and wallen state that a population is the group of interest to the researcher to whom the research generalizes the result of the study (as cited in Lestari and Holandyah, 2016, p. 49). In other words, population was the group of interest to me, the group to whom I would like to generalize the results of the study. The population of this study was all the eleventh grade students of SMA IBA Palembang in the academic year 2017/2018 that consist of three classes. The

total number of population was 95 students. The distribution of the population is described in table 1

Table 1

Population of the Study

Class	Male	Female	Total
XI IPA	16	15	31
XI IPS 1	15	17	32
XI IPS 2	16	16	32
Total			95

(Source: SMA IBA Palembang in academic year 2017/2018)

3.4.2 Sample

Within this target population, I selected a sample for study. Creswell (2012) states sample is the group of participants in a study selected from the target population from which the researcher generalizes to the target population. In this study, two classes were needed as a sample to collect the data. The sample was taken by using non-random sampling method in purposive sampling. The sample was chosen by interviewed and discussed with teacher at SMA IBA Palembang. Then the teacher recommended class XI IPS 1 and class IPS 2 were selected as the sample of the study because have the same criteria, both of class are taught by the same teacher and same the number of students.

Fraenkel et al. (2012) state purposive sampling consists of individual who have special qualification of some sort or are deemed representative on the basis of prior evidence. To be more convincing, those classes were given a pretest to know which class become control and experimental group. After conducted the pretest, the score of class XI IPS 1 was higher than class XI IPS 2. Therefore,

class XI IPS 1 was selected as control group and class XI IPS 2 as experiment group. The total sample of this study was 64 students. It is presented in Table 2.

Table 2

Sample of the study

No	Class	Male	Female	Total
1	XI IPS 1	15	17	32
2	XI IPS 2	16	16	32
Total				64

3.5 Data Collection

3.5.1 Tests

Brown argues that a test is method of measuring a person's ability, knowledge, or performance in given domain (as cited in Holandyah & Utami, 2016, p. 19). In collecting the data, the research used reading comprehension test in the form of multiple choice. The numbers of question items were 40. The purpose of the test was to know the results in teaching by using *discussion web* strategy. There were two kinds of test to give the students, pretest and posttest. The test items in the pretest were the same as those of posttest, because the purpose of giving them was to know the progress of student reading comprehension scores before and after treatment.

3.5.1.1 Pretest

The pretest was the test that was given before giving some treatments. According to Creswell (2012), pretest provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment. The pretest was given to the both of sample, experimental group and

control group. It measured the students' reading comprehension before treatment. In collecting the data, I used reading comprehension test in the form of multiple choice questions. The numbers of question items were forty, in the form of multiple choice which cover five options, namely (a, b, c, d, and e). All of the questions were about hortatory exposition text. The purpose of giving pretest to the students was to know the students' hortatory exposition reading achievement before implementing discussion web strategy.

3.5.1.2 Posttest

Posttest was given after conducting treatment to the experimental and the control group. Creswell (2012) states that post-test is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment. This test was given to the both of sample, experimental group and control group. In collecting the data, I used reading comprehension test in the form of multiple choice questions. The numbers of question items are forty, in the form of multiple choice which cover five options, namely (a, b, c, d, and e). All of the questions were about hortatory exposition text. The purpose of giving posttest to the students was to know the students' hortatory exposition reading achievement after implementing discussion web strategy. The type of posttest was the same as the pretest. The same as pretest, I checked and scored to the students' work. The result of this test was compared with the result of pretest in order to measure the students' progress taught by using discussion web strategy.

3.6 Research Instrument Analysis

Before implementing research treatments in experimental and control groups, a tryout on research instrument should be administrated to estimate the validity and reliability of research instrument for students' pretest and posttest activities. The followings were steps to analyze the validity and reliability test of the obtained scores based on the result of a tryout analysis. They were as follow:

3.6.1 Validity Test

Fraenkel and Wallen state that validity was the most important idea to consider when preparing or selecting an instrument for use (as cited in Herlina and Holandyah, 2015, p. 115). Validity test was carried out to measure weather the instrument for pretest and posttest activities are valid or not. They are three kinds of validity to be used. They were:

3.6.1.1 Construct Validity

In order to estimate the construct validity, expert judgement was required, and the experts to estimated the instrument at least three experts. In doing this measurement, the researcher asked three lecturers as validators to validate whether the instruments were valid or not. The validators checked all instruments of this research whether this instrument is connected to this study or not. There were some characteristics of validators, such as 1) they have experience in teaching English, 2) they have finished their magister degree, and 3) minimum 550 TOEFL score.

The validators in this research were lecturers of English at UIN Raden Fatah Palembang. In this part, the construct validity of the research instruments

involved two types, such as the questions items for pretest and posttest for experimental and control groups and lesson plans for experimental group. Based on the assessment carried out by validator I, II and III, the instrument can be used without revision. It means that the research instrument could be applied in this research.

3.6.1.2 Validity of each question item

To find out the validity of the test question items, I analyzed the items of the tests by conducting a try - out in order to find out the validity of each question items. The instrument of the test was tested to 36 students (XI IPS) of SMA Nurul Iman Palembang. The result of the test was analyzed by using Pearson Correlation Coeffecient formula. Basrowi and Soenyono argue that if the result of the test shows that r-count is higher than r-table, it means that the item is valid (as cited in Yusthi, 2016, p. 141). The result of significant score of Pearson Correlation was compared with r_{table} (0.339). It means that the item was valid.

Table 3

Result of Validity Test

No	Validity Test	Sig.(2-tailed) of Pearson Correlation	r-table score	Result
1	Item1	0	0.329	Invalid
2	Item2	0.640	0.329	**Valid**
3	Item3	0.842	0.329	**Valid**
4	Item4	0.508	0.329	**Valid**
5	Item5	0.707	0.329	**Valid**
6	Item6	0.152	0.329	Invalid
7	Item7	0.310	0.329	Invalid
8	Item8	0.152	0.329	Invalid
9	Item9	0.283	0.329	Invalid
10	Item10	0.283	0.329	Invalid
11	Item11	0.686	0.329	**Valid**
12	Item12	0.310	0.329	Invalid

13	Item13	0.605	0.329	**Valid**
14	Item14	0.797	0.329	**Valid**
15	Item15	0.310	0.329	Invalid
16	Item16	0.415	0.329	**Valid**
17	Item17	0.686	0.329	**Valid**
18	Item18	0.239	0.329	Invalid
19	Item19	0.415	0.329	**Valid**
20	Item20	0.686	0.329	**Valid**
21	Item21	0.134	0.329	Invalid
22	Item22	0.576	0.329	**Valid**
23	Item23	0.576	0.329	**Valid**
24	Item24	0.325	0.329	Invalid
25	Item25	0.239	0.329	Invalid
26	Item26	0.605	0.329	**Valid**
27	Item27	0.289	0.329	Invalid
28	Item28	0.356	0.329	**Valid**
29	Item29	0.215	0.329	Invalid
30	Item30	0.686	0.329	**Valid**
31	Item31	0.703	0.329	**Valid**
32	Item32	0.181	0.329	Invalid
33	Item33	0.883	0.329	**Valid**
34	Item34	0.604	0.329	**Valid**
35	Item35	0.356	0.329	**Valid**
36	Item36	0.415	0.329	**Valid**
37	Item37	0.797	0.329	**Valid**
38	Item38	0.356	0.329	**Valid**
39	Item39	0.707	0.329	**Valid**
40	Item40	0.576	0.329	**Valid**
41	Item41	0.605	0.329	**Valid**
42	Item42	0.554	0.329	**Valid**
43	Item43	0.605	0.329	**Valid**
44	Item44	0.508	0.329	**Valid**
45	Item45	0.686	0.329	**Valid**
46	Item46	0.605	0.329	**Valid**
47	Item47	0.768	0.329	**Valid**
48	Item48	0.797	0.329	**Valid**
49	Item49	0.686	0.329	**Valid**
50	Item50	0.797	0.329	**Valid**
51	Item51	0.239	0.329	Invalid
52	Item52	0.239	0.329	Invalid
53	Item53	0.686	0.329	**Valid**
54	Item54	0.239	0.329	Invalid
55	Item55	0.152	0.329	Invalid
56	Item56	0.506	0.329	**Valid**
57	Item57	0.515	0.329	**Valid**
58	Item58	0.508	0.329	**Valid**

59	Item59	0.797	0.329	**Valid**
60	Item60	0.433	0.329	**Valid**

From Pearson Correlation Formula, it was also found that there were 19 questions were considered invalid. They are questions number items 1, 6, 7, 9, 12, 18, 19, 20, 21, 24, 25, 26, 27, 29, 32, 51, 52, 54, and 55 since the score of significance are lower than 0.339. Then, 41 questions item were considered valid. They are questions item number 2, 3, 4, 5, 8, 10, 11, 13, 14, 15, 16, 17, 22, 23, 28, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 53, 56, 57, 58, 59, and 60, since the score of significance are higher than 0.339. Since there were 41 questions are considered valid, I just took 40 valid questions item.

3.6.1.3 Content validity

According to Fraenkel, et al. (2012), content validity refers to the content and format of the instrumental. In order to judge whether or not a test has content validity, a specification of the skills or structures should be made based on the curriculum and syllabus. The specification of the test is described in table 4.

Table 4

Test Specification of the Test Items

Objectives	**Test Materials**	**Indicators**	**Number of Items**	**Type of test**	**Answer Key**
11.2 Respond the meaning and the rhetorical steps in essays accurately, fluently and accept in the	Adoption	The students are able; 1. Finding a communicative purpose 2. Finding the detail and factual information	2 1, 3	Multiple Choice	e c, d

context of daily life in form of narrative, spoof and hortatory exposition texts.	Home Schooling	1. Identifying the topic of the text	4	d
		2. Identifying the reference word	6	c
		3. Identifying the word meaning	7,	e,
		4. Finding the detail and factual information	5,	a,
		5. Identifying the generic structure	8	e
	Why are Diazinon and Dursban should be Banned	1. Identifying the topic of the text	9	e
		2. Finding the detail and factual information	10	b
		3. Identifying the generic structure	11	c
	Students' First Days in School Need to Be Made Constructive	1. Identifying main idea	12, 13	a, c
	Lets Make City Clean and Fresh	1. Identifying the word meaning	16	c
		2. Finding the detail and factual information	14, 15, 17	a, e, c
	Westenization: To Threat Our Culture	1. Identifying the reference word	21	c
		2. Identifying the generic structure	18	c
		3. Finding the detail and factual information	19, 20, 22	b, a, b
	Higher Education for Women	1. Identifying the word meaning	26, 27	d, a
		2. Finding the detail and factual information	23, 25	c, e
		3. Finding a communicative purpose	24	c
	Muslim's Headscraft	1. Identifying the topic of the text	28	d
		2. Identifying word	31, 33	d, c

	meaning		
	3. Finding the detail information	29, 30	b, c
	4. Identifying the generic structure	32	d
Country Concern	1. Identifying the reference word	35	e
	2. Finding the detail information	34,	e
School Uniform, Another Good Lesson	1. Identifying the main idea	38	a
	2. Identifying the reference word	37	e
	3. Finding the detail information	36, 39	c, c
	4. Identifying the generic structure	40	b

3.6.2 Reliability Test

According to Fraenkel et al. (2012), reliability refers to the consistency of the scores obtained. To know the reliability of the test, internal consistency reliability in Split half reliability coefficient with Spearman-Brown formula was used. The calculation was done by using SPSS version 20. Freankel et al. (2012) state that a useful rule of thumb is that reliability should be at least 0.70 and preferably higher. It can be stated that the reliability of reading test items is reliable since the p-output is higher than r-table (0.339) with sample (N) was 36 students. The analysis result of reliability test was described in table 5.

Table 5

Result of Reliability Analysis Using Split Half

Reliability Statistics

Cronbach's Alpha	Part 1	Value	,821
		N of Items	20[a]
	Part 2	Value	,896
		N of Items	20[b]
	Total N of Items		40
Correlation Between Forms			,848
Spearman-Brown Coefficient	Equal Length		,918
	Unequal Length		,918
Guttman Split-Half Coefficient			,909

a. The items are: item1, item2, item3, item4, item5, item6, item7, item8, item9, item10, item11, item12, item13, item14, item15, item16, item17, item18, item19, item20.
b. The items are: item21, item22, item23, item24, item25, item26, item27, item28, item29, item30, item31, item32, item33, item34, item35, item36, item37, item38, item39, item40.

3.7 Readability Test

Richardson, Morgan, and Fleener (2009) state readability is the match between reader and text, it suggests that content is clear, well expressed, and suited to the reader. Readability test was done to know the appropriate level of reading texts for students' class level in comprehending the reading texts. It means that readability test was done to put the reading texts in an appropriate class meeting based on the difficulty level of each reading text during research treatments. Readability test was measured using online readability test which was accessed from http//www.readabilityformulas.com.

There were two readability tests in this study. They were readability test for research instrument and readability test for research treatment. The explanation as follows:

3.7.1 Readability for Research Instrument

For research instrument, I used 10 hortatory exposition texts as reading material. The reading material was taught based on teaching learning objectives that refer to the English syllabus of senior high school. It was taken from four books. First was "Interlanguage: English for Senior High School Student XI written by Joko Priyana, dkk and published by Pusat Perbukuan Departemen Pendidikan Nasional (2008)". Second was "Bpm (Buku Pedalaman Materi) UN 2017 SMA/MA Bahasa Inggris written by Tim Widya Gamma and published by Yrama Widya (2016)". Third was "Developing English Competencies for Senior High School written by Achmad Doddy, dkk and published by Pusat Perbukuan Departemen Pendidikan Nasional (2012)". And the last was "English Alive Senior High School written by Tri Indaryati and published by Yudhistira (2010)". There were some results after checking readability test for research instrument texts in Flesch-Kincaid reading ease score. The word statistics of the texts is described in table 6.

Table 6

Readability Test for Research Instrument

Text Statistic

No	Text Title	Character per Word	Syllable per Word	Word per Sentence	Flesh Reading Ease Score	Text Category	Grade Level
1	Adoption	4.8	2	14	58.8	Fairly Difficult	10-11
2	Home schooling	4.8	1	24	55.2	Fairly Difficult	10-11
3	Why are Diazinon and Dursban	5	2	17	54.9	Fairly Difficult	10-11

	should be Banned						
4	Students' First Day in School Need to Be Made Constructive	4.8	1	29	55.9	Fairly Difficult	10-11
5	Let's Make City Clean and Fresh	4.9	2	23	52.6	Fairly Difficult	10-11
6	Westernizatio n: To Threat Our Culture	5.1	2	17	52.3	Fairly Difficult	10-11
7	Higher Education for Women	5	2	15	52.4	Fairly Difficult	10-11
8	Muslim's Headscraft	5	2	20	51.5	Fairly Difficult	10-11
9	Country Concern	4.2	1	38	50.3	Fairly Difficult	10-11
10	School Uniform, Another Good Lesson	5.1	2	17	50.2	Fairly Difficult	10-11

3.7.2 Readability Test for Research Treatment

For research treatments, I used 10 hortatory exposition texts as reading material. It was taken from seven books. First from "bpm (Buku Pedalaman Materi) UN 2017 SMA/MA Bahasa Inggris written by Tim Widya Gamma (2016)". Second from "English Alive Senior High School written by Tri Indaryati and published by Yudhistira (2010)". Third from "Look Ahead an English Course for Senior High School Year XI written by Th. M. Sudarwati and Eudia Grace and published by Erlangga (2007)". Forth from "Sukses UN SMA/MA PASTI Bahasa Inggris written by Tim Ganesha Operation and published by Penerbit Duta

(2013)". Fifth from "Interlanguage: English for Senior High School Student XI written by Joko Priyana, dkk and published by Pusat Perbukuan Departemen Pendidikan Nasional (2008)". Sixth from "Developing English Competencies for Senior High School written by Achmad Doddy, dkk and published by Pusat Perbukuan Departemen Pendidikan Nasional (2012)." There were some results after checking readability test for research treatment texts in Flesch-Kincaid reading ease score, the word statistics of the texts is described in table 7.

Table 7

Readability Test for Research Treatment

Text Statistic							
No	Text Title	Character per Word	Syllable per Word	Word per Sentence	Flesh Reading Ease Score	Text Category	Grade Level
1	Cellphone for Student	4.9	2	17	59.3	Fairly Difficult	10-11
2	Private School	5.2	2	17	58.6	Fairly Difficult	10-11
3	Corruption	4.8	2	14	58.2	Fairly Difficult	10-11
4	On School Discipline	4.8	2	18	56.8	Fairly Difficult	10-11
5	Watching TV	5	2	13	56.7	Fairly Difficult	10-11
6	Integrated Pest Management	5.2	2	11	53.9	Fairly Difficult	10-11
7	Parents Should Be Wary of Expensive Schooling	4.9	2	22	51.7	Fairly Difficult	10-11
8	Job Vacancy	5	2	14	51.1	Fairly Difficult	10-11
9	Agriculture	4.8	2	19	50.9	Fairly Difficult	10-11

10	Helping Children Discover Their Own Identity	4.9	2	22	50.1	Fairly Difficult	10-11

3.8 Research Teaching Schedule

I did the treatments to the experimental group students suitable with the teacher of English schedule for the eleventh grade students in academic year 2017/2018. The study was conducted in 10 meetings. There were two meetings for a pretest and posttest. So the total meetings were 12 meetings. Each meetings takes 90 minutes (2 x 45). The research teaching schedule is described in table 8.

Table 8

Research Teaching Schedule

No	Text's Title	Kind of Text	Meeting	Time Allocation
1	Pretest	Hortatory Exposition Text	February 13, 2018	2x45'
2	Cellphone For Student	Hortatory Exposition Text	February 15, 2018	2x45'
3	Private School	Hortatory Exposition Text	February 20, 2018	2x45'
4	Corruption	Hortatory Exposition Text	February 22, 2018	2x45'
5	On School Discipline	Hortatory Exposition Text	February 27, 2018	2x45'
6	Watching TV	Hortatory Exposition Text	March 1, 2018	2x45'
7	Integrated Pest Management	Hortatory Exposition Text	March 6, 2018	2x45'
8	Parents Should Be Wary of Expensive Schooling	Hortatory Exposition Text	March 8, 2018	2x45'
9	Job Vacancy	Hortatory Exposition Text	March 13, 2018	2x45'
10	Agriculture	Hortatory Exposition Text	March 15, 2018	2x45'
11	Helping Children Discover Their Own Identity	Hortatory Exposition Text	March 20, 2018	2x45'
12	Postest	Hortatory Exposition Text	March 22, 2018	2x45'

3.9 Data Analysis

In analyzing the data, it presented data description, prerequisite analysis, and hypothesis testing.

3.9.1 Data description

Before analyzing the data, distribution of the data was used to see distribution of frequency data and descriptive statistics.

3.9.1.1 Distribution of frequency data

In distributions of frequency data, the students' score frequency, percentage was achieved. The distributions of data frequency were obtained from: (1) students' pretest and posttest scores in control group, (2) the students' pretest and posttest scores in experimental group, (3) students' pretest and posttest scores of poor, average and good categories in control group, (4) students' pretest and posttest score of poor, average and good categories in experimental group. Then, the distribution of data frequency was displayed in a table analysis.

3.9.1.2 Descriptive Statistic

In descriptive statistics, number of sample, the lowest score, the highest score, mean, standard deviation, and standard error of mean were obtained. Descriptive statistics were obtained from (1) students' pretest and posttest scores in control group, (2) students' pretest and posttest scores score in experimental group, 3) students' pretest and posttest scores of poor, average and good categories in control group, (4) students' pretest and posttest score of poor, average and good categories in experimental group.

3.9.2 Pre-requisite analysis

Before analyzing the data, pre-requisite analysis was done to see whether the data obtained was normal and homogenous. The following was the procedures in pre-requisite analysis.

3.9.2.1 Normality test

Normality test was used to measure whether the obtained data normal or not. In measuring normality test, One sample Kolmogorov-Smirnov was used. The analyzed was done by using SPSS 20. Moreover, Flynn (2003) states that a value less than 0.05 indicate that the data are non-normal. Whereas Basrowi states that, the data can be classified into normal when the p-output is higher than 0.05 (as cited in Ariesca and Marzulina, 2016, p. 35). The normality test was used to measure students' pretest scores in experimental and control groups, students' posttest scores in experimental and control groups, students' pretest and posttest scores of poor, average and good categories in control group and experimental group.

3.9.2.2 Homogeneity Test

Homogeneity test was used to measured the scores obtained whether it is homogen or not. According to Flynn (2003), the data could be categorized homogen whenever it was higher than 0.05. In measuring homogeneity test, the researcher used Levene Statistics in SPSS 20 software application. The homogeneity test was used to measure students' pretest scores in experimental and control groups, students' posttest scores in experimental and control groups,

students' pretest and posttest scores of poor, average and good categories in control group and experimental group.

3.9.3 Hypothesis testing

In measuring significant difference on students' hortatory exposition reading achievement taught by using discussion web strategy and measuring the significant difference between students' hortatory exposition reading achievement and those who are not, independent sample t-test and two-way anova was used to compared two groups.

1. In measuring significant difference between students' posttest scores who are taught by using discussion web strategy in experimental group and teachers' method in control group, Independent Sample t-test was used. The significant difference was accepted whenever the p-output (Sig.2-tailed) was lower than 0,05 and t-obtained was higher than t_{table} (1,9990).
2. In measuring significant difference between students' reading score in good, average, and poor categories two-ways ANOVA will be used. The significant difference was accepted whenever the p-output (Sig.2-tailed) was lower than 0,05 and t-obtained was higher than t_{table} (1,9990).