

CHAPTER III

RESEARCH METHOD

This section consisted of research design, the population, sample and sampling of the research, research variable, research instrument, validity and reliability test, normality and homogeneity testing, data collecting method, and data analysis.

A. Research Design

To organize this study the analyzer used quantitative research design. Quantitative research was methodology to study phenomena by collecting numeric data in the field, and to analyze it by using statistic program. It supported by Ary et.al (2010:22) quantitative research uses objective measurement to gather data that are used to answer questions or test predetermined hypotheses. According to Perry (2005:75) quantitative mainly came from psychology field and emphasized by statistic to make generalization from samples of populations.

To explore the effectiveness of schoology media and scaffolding technique in teaching students writing in analytical exposition text the researcher used quasi-experimental design. Quasi-experimental design same with the randomized experimental design in that argue manipulation of an independent variable but be distinguished from the subjects are not randomly assigned to treatment group Ary (2010:315). In this research, the treatment

was organized by using Schoology media and Scaffolding technique in teaching writing specific in analytical exposition text. In this stage, the researcher used quasi-experimental design using single class as single group who got the treatment, and one class as controlled class. The class got pre-test and post test to know the result of treatment. In experiment group, treatment teaching through schoology media with scaffolding technique was applied. Meanwhile the controlled group only uses learning by teacher, assignment and presentation technique.

After gives the treatment to experimental group, the researcher shared post-test both classes to see the result of schoology media and Scaffolding technique on students writing analytical exposition text. In the end, the researcher explored the data from experimental (pre-test, post-test) and control group (pre-test, post-test). The design of the research could be summarized by Creswell (2011:310) as follows:

Table 3.1 Quasi- Experimental Design: Pre-test and Post Test Design Modified from Cresswell (2011:310)

Control Group	Pre-test	Treatment (Conventional method, assignments)	Post-test
Experimental Group	Pre-test	Experiment treatment (Using Schoology media with Scaffolding technique)	Post-test

B. Population, Sample, Sampling

1. Population and Sample

Population was complete subject where data was composed. Creswell (2011) defines population is a group of students (individuals) who have the same characteristics, while sample is subgroup of the goal population that the researcher plans to analysis for the goal of making conclude about the goal population. The population data of the study was 261 students. Those were divided into three department and eleventh classrooms. There are; MIPA 1, 2, 3, ,4,5,6,7 IPS 1, 2,3 and AGAMA 1, 2. The sample of this study was taken from two classes which are XI-IPS 2 as control class that was thought without schoology media and XI-MIA 4 as an experimental class that was directed by using schoology media and scaffolding technique.

Table 3.2 Population and Sample

NO	Class	Male	Female
1.	XI MIPA	43	146
2.	XI IPS	35	101
3.	XI AGAMA	21	49
Total Students		99	261

In addition, the researcher used purposive sampling which was based on the researcher belief and judgment in selecting the sample. According to Perry (2005:57) purposeful sampling grand design was used

to argue that the sample was chosen to reply the research questions as appropriate as possible. The researcher chooses MAN 1 Trenggalek because one of the missions of MAN 1 Trenggalek is to build competitive and sportive attitudes students through modern technology and computer based learning. Also the school has aimed to support the K13 curriculum development program. That is the reason why the researcher chooses this school. Not only the school mission is good criterion but, this research topic can be support the school mission. That is using modern media to support teaching and learning process.

Furthermore, English teacher who handled XI MIPA 4 and XI IPS 2 suggested taking that class too as subject of sample to be researched by some reasons:

- a) The class of XI-MIPA 4 and XI-IPS 2 was learned analytical exposition text.
- b) The XI-MIPA and XI-IPS 2 class was coactive acceptable.
- c) The typical of the students' had assumed as homogeneous in writing skill competence.

Table3.3 The Sample of Research

Class	Male	Female	Sum
XI MIA 4	12 students	22 students	34 students
XI IPS 2	10 students	26 students	36 students

2. Sampling

The technique in taking sample was called sampling (Sugiyono, 2006:90). In this study, the researcher used purposive sample as the process of sampling. Ary et al (2010:156) affirmed that purposive sampling also-referred to as judgment sampling-sample elements judged to be representative, are select from the population. In purposive sampling, the researcher used professional judgment by Mrs. Detti Sulaibah M.P.d. as vice head master of curriculum in MAN 1 Trenggalek, to have taken some representative or typical case from population.

The Purposive sampling was a kinds of non-probability sampling the researcher able to recognize selects the subject for addition in a study to makes sure that the aspects could had certain typical suitable to the research. The purposive sampling was sample which was in use since the researcher believed that XI-MIA 4 can gives appropriate information. The researcher used purposive sampling the class consisted of various background of schools and English proficiency. Some of them joining English course, any other stay at modern Islamic boarding school who everyday using English to communication. Thus, the researcher believed that XI-MIA 4 class of MAN 1 Trenggalek could be given sufficient information because it was heterogeneous class.

C. Research Variable

Variable was the characteristics of something that researched. Bellows are two variables in this study (next page):

- a) Independent variable (x_1) : Schoology media
- b) Independent variable (x_2) : Scaffolding technique
- c) Dependent variable (y) : Students' writing in analytical exposition

D. Research Instrument

Research instrument meant the tool to compose the data. Instrument which used by researcher was testing writing. The test used to compute the students writing in analytical exposition text before and after being taught by using schoology media and scaffolding technique. Students were given two types of test, there are pre-test and post-test. The first test was pre-test which distributed on March, 12th 2020. The total items of the test were only one in the form of essay writing. The pre-test has topic about factual issue such as importance of education and healthy. Then, post-test has topic are the power of media social in life, the dangers of using Smartphone for children and forest towards our life. In making this test, it must be considered to the core competences and also basic competences of curriculum. To know the outcome of the test, the researcher used the scoring rubric guide. The criteria of scoring rubric were based on the rating sheet from Jacobs et al cited in Weigle (2002:116) which concerned the five components of writing. The researcher used calculation as follows (next page):

1. The content scored as much as 30 % of the total of sentences support the main ideas.
2. The organization is estimate as much as 20 % of the total sentences as written in sequential classify.
3. The language use is scored as much as 25 %from sentences use accurate grammar.
4. The vocabulary scored is 20 %as much as from vocabularies are used correctly.
5. The mechanics calculated as much as 5 % from use punctuation, spelling, and capitalization accurately.

Table 3.4 Scoring Rubric for Writing Modified from Jacobs et al cited in Weigle (2002:116)

Aspect	Scores	Category	Indicators
Content	30-27	Excellent-very good	Knowledgeable, substantive, through development of thesis, relevant to assigned topic.
	26-22	Good-average	Some knowledge of subject, adequate range, limited development of thesis, mostly relevant to topic
	21-17	Fair-poor	Limited knowledge of subject, little substance, not pertinent or not enough evaluated.
	16-13	Very poor	Does not show knowledge of the subject, non substantive, not enough evaluated.
Organization	20-18	Excellent-very good	Fluent, expression, ideas clearly stated or supported succinct, well-organized, logical sequence, cohesive.
	17-14	Good-average	Somewhat choppy, loosely organized, but main ideas stand out limited support, logical but incomplete sequencing.
	13-10	Fair-poor	Non-fluent, ideas confused or disconnected, lack logical sequencing and development.

	9-7	Very poor	Does not communicate, no organization or not enough to evaluate.
Vocabulary	20- 18	Excellent-very good	Sophisticate range, effective word or idiom choice and usage, word from mastery, appropriate register.
	17-14	Good-average	Adequate range, occasional errors of word or idiom form, choice, usage but meaning not obscured.
	13-10	Fair-poor	Limited range, frequent error of word or idiom form, choice, usage, meaning confused.
	9-7	Very poor	Essentially translation, little knowledge of English vocabulary, idioms, word form or not enough to evaluate.
Language Use	25-18	Excellent-very good	Effective complex construction, few errors of agreement, tense, number, word order or function, articles, pronouns, prepositions.
	21- 18	Good-average	Effective but simple construction, minor problem in complex constructions, frequents errors of negation, agreement, tense, number, word order or function, articles, pronouns, prepositions but meaning seldom obscured.
	17-11	Fair-poor	Major problem in simple or complex constructions, frequent errors of negation, agreement, tense, number, word order or function articles, pronouns, prepositions, fragments run-ons, deletions, meaning confused.
	10-5	Very Poor	Virtually no mastery of sentence construction rules, dominated by errors, does not communicate or not enough to evaluate.
Mechanics	5	Excellent-very good	Demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.
	4	Good-average	Occasional errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, and meaning confused.
	3	Fair-poor	Frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, and meaning confused.
	2	Very Poor	No mastery of conventions, dominated by errors of spelling, punctuation, capitalization, paragraphing, handwriting illegible or not to evaluate.

TOTAL: Content (30%) + Vocabulary (20%) + Organization (20%) + Language Use (25%) + Mechanics (5%) = 100 %

E. Validity and Reliability

In experimental research, the researcher had to verify validity and reliability of the instrument. The instrument used in this research was a test which was given before and after taught by schoology media and scaffolding technique. According to David Wilkinson and Peter Birmingham (2003) the validity and reliability of the instrument could develop through the following steps:

1. Review of Literature

Review of literature from the books and syllabus is first step to get valid and reliability of the instrument. Review of literature must comprehensive to make draft instrument correctly (Nurhayati: 2016b).

2. Drafting Instrument

Finishing getting some information from reviewing books and syllabus, the researcher started to write the draft instrument that suitable with the materials of analytical exposition text.

3. Expert Validation

The third step is the instrument should be shows by expert validation. The goal of this stage is to know the valid of instrument was either connected with it was create validity, face validity or content validity. So, in this stage the researcher got feedback by considering with the validation guide.

4. Revising Draft

The researcher correcting draft of the instrument which used feedback collected from the expert validation.

5. Conducting Try-Out

After correcting the draft instrument, the researcher conducted tried the instrument out to the students in different class. The researcher organized the try-out in class XI-MIA 3.

6. Revising

After conducting try out, correcting the instrument, after getting input or feedback from the try-out and based on that term the researcher got final draft to test class XI-MIA 4 and XI-IPS 2 as a sample of population of this research. The researcher revised the instrument to make the ideal questions.

7. Final Draft Instrument

In this stage is the final draft that, it meant the instrument is ready to test, for organize the pre-test and post-test.

To get more information, the researcher described both validity and reliability as bellow:

a. Validity

Validity of instrument was measured what was supposed to be measure. Brown (2000:387) stated “validity is the degree to which the test actually

measures what it is intended to measure”. An instrument was called valid if the instrument was able to measure what were measured. There are three kinds of validation; content validity, face validity and construct validity Brown (2000:388). In this case, the researcher used content and construct validity.

1) Content Validity

The content validity of the test could be done by match up to the content of the test and the material that could be found out. The researcher makes test based on standard competency and basic competency in K13 syllabus of second grade of senior high students. It supported by O”Malley & Pierce (1996:25) content validity is the connection between curriculum objectives and the objectives being assessed.

Table 3.5 Basic Competence and Core Competence of Writing Analytical Exposition Text from Regulation Ministry of National Education

Core Competence	Basic Competence
3. Understanding, implementing and analyzing the function of analytical exposition text written and spoken with take and give the factual information according to its contexts	3.4 Analyzing social function, structure text and language features in analytical exposition text written and spoken with take and give the factual information according to its contexts.
4. Arranging analytical exposition text written, related about factual issue with analyzing social function, structure text and language features according to its contexts.	4.4 Arranging analytical exposition text written, related about factual issue with analyzing social function, structure text and language features according to its contexts.

2) Construct validity

The construct validity of test was competent of measures sure specific types in agreement with a theory of language behavior and learning. According to Latief (2017:238), the construct defined could lead to what ask the instrument requires students to do. Here, the researcher used construct validity in administering writing test on the form of essay, with the supposed to measure the students' writing about analytical exposition text and therefore, it was valid in term of construct validity.

3) Face Validity

The researcher used face validity by consulting with the advisor and English teacher to make sure that test measured what must be measured. In this case, the test had measured writing in analytical exposition text.

b. Reliability

Reliability meant to the consistency of the scores resulted from the instrument. The reliability of the test or instrument can be seen from the result of conducting try out instrument in different class. It conducted in XI MIA 3 class that consisted of 29 students. To know the reliability of the instrument of writing, the researcher used inter-rater reliability.

According to Creswell (2008: 161), inter-rater reliability involves observations made by two or more individuals of an individual's or several individuals' behavior. It meant that two scorer did the scoring. After that, the scores were calculated to see if the scores were similar or different. The result

of the scores was calculated by using *Cronbach's Alpha* from SPSS Statistics 16.0 version for windows. It was represented in the following table 3.6.

Table 3.6 The Result of Reliability

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.732	.732	2

On the whole, from the output of inter-later test in table 3.6. that the test was reliable. It known from the value of *Cronbach's Alpha* was 0.732. The level of reliability was high. According to Suharto as cited in Risdiani (2018), the rate of value in the instrument is presented in the following table:

Table 3.7 The Value of Reliability Coefficient Modified from Suharto as cited in Risdiani (2018)

Reliability Coefficient	Reliability Category
0.800 up to 1.000	Very High
0.600 up to 0.799	High
0.400 up to 0.599	Fair
0.200 up to 0.399	Low
0.000 up to 0.199	Very Low

F. Normality and Homogeneity Testing

1. Normality Testing

Normality testing was organized to know whether the data which was taken had been normal distributed or not. The computation of normality testing in this research using *SPSS 16.0 for windows* version with the formula One-sample Kolmogrov-Smirnov Test by the value of significance (α) = 0.05. Data normality testing was organized by the rules:

- a. If $\alpha > 0.05$; the distribution of data was normal.
- b. If $\alpha < 0.05$; the distribution of data was not normal.

Table 3.8 The Result of Normality Testing

One-Sample Kolmogorov-Smirnov Test			
		Experiment Class	Controll Class
N		34	36
Normal Parameters ^a	Mean	83.00	70.50
	Std. Deviation	4.015	3.368
Most Extreme Differences	Absolute	.279	.253
	Positive	.169	.253
	Negative	-.279	-.094
Kolmogorov-Smirnov Z		1.627	1.521
Asymp. Sig. (2-tailed)		.010	.020

- a. The data distribution is not normal

Based on the result of normality testing in table 3.8, it found that the data distribution was not normal distributed. Because the samples were more than 50 students, so it used Kolmogrov-Smirnov. It could be seen in Kolmogorov-Smirnov column was found that the p -value (sig) in post-test of control class was 0.010 and p -value (sig) in experimental class was 0.020. It indicated that the result was less than significance level 0.05

($0.000 < 0.05$). It was caused there was very high score or very low score than the other scores.

2. Homogeneity testing

According to Arikunto (2010: 98), homogeneity is can be used by determine variation of data. It was used to analyze whether the sample variance was homogeneous or not. The computation of homogeneity testing using *SPSS 16.0 for windows* version with the formula One-sample Kolmogrov-Smirnov test by the value of significance (α) = 0.05.

Prasetyowati (2016:94) mentions that the considerations of testing homogeneity are:

- a. If the result is higher than significant level 0.05, the data is homogeneous.
- b. If the result is lower than 0.05, the data is not homogeneous.

The result of homogeneity testing could be seen in table 3.9.

Table 3.9 The Result of Homogeneity Testing

Levene Statistic	df1	df2	Sig.
2.201	6	25	.077

The result of homogeneity testing by using SPSS 16.0 for windows in table 3.9 showed that the level of significance was 0.077. It indicated that the result was high than significance level 0.05 ($0.000 < 0.05$). Thus, it could conclude that the data was homogenous. It meant that two classes that used have the variance which same relative or it was homogenous.

G. Data Collection Method

The data collection method was the way how the researcher got the data which was required. The researcher collected the data from the students' pretest and posttest score. The technique of collecting data was clarified as follows:

1. Pre-test

The students were pre-test given before prepare treatment. The test was shared to the students of control and the experimental class. XI MIA 4 class became an experimental class, while XI IPS 2 became control class. The researcher shares the pre-test in the different day, because both of class had different schedule for English lesson. The first pre-test is given for XI-MIA 4 and XI-IPS 2 class. The researcher share same topics for them.

So, both of group (control and experimental) had the same topics and time allocation. The aimed of this pre-test was to explore their skill and knowledge in writing analytical exposition text before they were given the treatment. After that, their work was assessed by using scoring guide that adapted from Jacobs et al as cited in Weigle (2002).

2. Post-test

Post test was shared to the students to investigate and measure the progress their getting in analytical exposition text. The questions of post test were shared for experimental and control group. Experimental class organized post-test after the student s got treatment by using schoology

media and scaffolding technique. While, control class organized post-test after the students' got treatment using conventional learning. A post test is compute on some attribute or characteristics that is assessed for participants in an experiment after treatment (Creswell, 2008:301). Control class had done post-test on Thursday, 9th June 2020. While, experimental class had done post-test on Wednesday, 12th June 2020. After, finishing the test, the researcher used scoring guide to compute the score of post-test. The type of the test would be the same as the pre-test but different topics. Then, the score of the post-test would be compared with the pre-test before. So, those two score would be used as numeric data to determine the effect of schoology media with scaffolding technique in students' writing analytical exposition.

The aimed of post-test was to measure students improvement, ability and knowledge of analytical exposition text after the students learnt writing analytical by using schoology media and scaffolding technique in experimental class and without using schoology media and scaffolding technique in control class. The output of post-test score in experimental class was compared with post-test score of control class to know the significance difference of students' writing analytical exposition text taught and not being taught schoology media and scaffolding technique. The schedules of collecting the data and treatment were presented in the following table.

Table 3.10 The Schedule of Collecting Data and Treatment

Time	Material	Activities	Goal
Wednesday, March 12 th 2020	Analytical Exposition Text	Pre-test of Experimental Class Topic: The Importance of Healthy and Education	To measure students' writing ability before the treatment
Wednesday, March 12 th 2020	Introduce of Schoology Media and Scaffolding Technique	First Treatment Topic: Introduce of Schoology Media and Scaffolding Technique and how to use and register.	To introduce, register and use the media for students.
Wednesday, June 3 rd 2020	Analytical Exposition Text	Second Treatment by using Schoology Media Topic: Definition, generic structure and language feature.	To makes students understood about social function of analytical exposition text.
Thursday, June 4 th 2020	Analytical Exposition Text	Third Treatment by using Schoology Media Topic: Example of analytical exposition text. And try to make analytical exposition text.	To makes students understood about social function of analytical exposition text, and make good text.
Friday, June 5 th 2020	Analytical Exposition Text	Fourth treatment by using Schoology Media Topic: Do assignment by jumble paragraph.	To makes students understood about social function of analytical exposition text
Friday, June 12 th 2020	Analytical Exposition Text	Post-test of Experimental Class Topic: The Power of Social Media for life. The Dangers of Using Smart phone for students Forest towards our life.	To measure students' writing ability after the treatment.

Time	Material	Activities	Goal
Wednesday, March 12 th 2020	Analytical Exposition Text	Pre-test of Control Class Topic: The Importance of Healthy and Education	To measure students' writing ability before the treatment
Friday, (9.30 am) March 13 th 2020	Analytical Exposition Text	First Treatment Topic: Analytical exposition text, language feature and structure the text by given the example of the text.	To makes the students understood about social function of analytical exposition text.
Friday, (2. am) March 12 th 2020	Analytical Exposition Text	Second Treatment Topic: Do Assignment 1 and presentation.	To makes students understood about social function of analytical exposition text.
Saturday, May 31 st , 2020	Analytical Exposition Text	Third Treatment Topic: Write analytical exposition text in a piece of paper. (Why choose MAN Trenggalek)	Students can wrote analytical exposition text.
Tuesday, 9 th June 2020	Analytical Exposition Text	Post-test of Control Class Topic: The Power of social media in your live. The dangers of using smart phone for children. "Forest Towards Our Life"	To measure students' writing ability after the treatment.

H. Procedures of Using Schoology Media and Scaffolding Technique

In using schoology media and scaffolding technique in experimental class needs some procedures to organized by the researcher to the students.

- 1) The first, the researcher explained about what schoology media and scaffolding technique also explained what they should do in this treatment. The researcher introduces the features, account and how to operation of schoology media by using LCD projector in the class.
- 2) The second, the researcher guides the students to register the account of schoology (as students). Then, guides to join the group of class by using access code from the instructor (researcher).
- 3) Next, the students can join into class group, and the researcher asks the students to post attendance list in wall of group (Experimental Class XI MIA 4).
- 4) The researcher, guide the students to try uses the features of schoology (home, resources, groups, courses, grades, calendar and setting).
- 5) After all of students' has been join in the class group and can apply the features the researcher post greeting in the wall of discussion. Then, the students can leave comment in the wall.
- 6) Then, the researcher and the students make schedule to make sure all off students can online together.
- 7) After done constructed the schedule the researcher start learning by using schoology,
- 8) Before start explanation, the class divided into eight groups that consist of 4 until 5 students. And make group that have been share by researcher.
- 9) The researcher started explanation from share the material (definition, structure, language features and example) in resources.

- 10) The researcher share conversation in the wall discussion “Hello Class...today we will learn about analytical exposition text. Did you remember about it?”. Then, the students can leave comment and make conversation. From this wall the students and teacher can conduct conversation effectively.
- 11) Next meeting the researcher conducted learning to continue the material by ask the students to open the example of the text in the resources wall to discussion together about the generic structure. The example of text, complete with picture and structure of text. So, the students easy to understand the text.
- 12) Next, the researcher guides the students until the students feel understand and can make the product of writing.
- 13) After finish explanation the researcher share assignment 1, 2, 3 in the wall of assignment. The students must do it, by their group and upload by using schoology.
- 14) The researcher still to guides the students to finish the assignment and can make writing product (analytical exposition text).
- 15) The last, the students share their product writing in the wall of discussion than have feedback from the researcher and other friends. So, the students can revise the writing and construct text again.

I. Technique of Data Analysis

Data analysis was used by the researcher to analyze the collected data which was taken from the students’ pre-test and post-test gain. Richmond

(2006: 13) defines that data analysis can pass on to a variety of specific procedures and methods. It involves goals; relationships; making decision; and ideas, in addition to working with the actual data itself. The data obtained from the result of students test post-test means both of classes were analyzed quantitative. Quantitative analysis was done by using statistics which was called statistical analysis or inferential statistics. The quantitative data of this study was analyzed using statistical computation. To analyze those data, the researcher used SPSS 16.0 version for windows. In this study, the researcher used Mann-Whitney U Test because the data was interval and the result of normality testing showed that the data was not normally distributed.