

CHAPTER III

RESEARCH METHOD

This chapter describes the research methodology. It includes research design, population and sample, research instrument data collection and data analysis.

A. Research Design

This research uses quantitative method. This method uses data in the form of quantitative, number and calculation. This design of this research is experimental. Experimental research assesses the effect of manipulated and controlled variable (as independent variable) to another variable (as dependent variable)⁴³. In experimental research, there are three types, true experimental, quasi-experimental and pre-experimental. The specific design of this research is quasi-experimental. It is because researchers cannot create groups artificially for experiments⁴⁴. Therefore, the researcher takes two groups as the experimental group and the control group.

The researcher who conducts quasi-experimental research only assign different treatment in two different classes. The procedure of quasi-experimental research involves several steps. They are: 1) defining an accessible population, 2) selecting two groups/classes from all existing classes in the population at the same level, 3) randomly assigning one of the classes to experimental and control groups, 4) administering experimental and control treatments to both groups, 5) evaluating the results of both groups' treatments, and 6) computing the difference between the experimental group's average score and the control group's average score.⁴⁵

B. Research Variables

A variable is an attribute of the object of the research. There are three

⁴³ Latif, Mohammad Adnan.. *Research method on Language Learning An introduction*. Universitas Negeri Malang. 2019. p. 94

⁴⁴ John W. Creswell, *Educational Research : Planning, conducting, and Evaluating Quantitative and Qualitative research*, (Boston: Pearson Education, 4th es., 2012), P.309

⁴⁵ *Ibid.* Latif. p. 96-97

variables that are involved in this research, namely:

1. Independent variable: Teaching listening
2. Dependent variable: Students' listening skill
3. Moderator variable: Learning style

C. Population and Sample

Population is all members of real object in which educational researchers wish to generalize the result of the research⁴⁶. The population of this research is the students in eleventh grade in MA Unggulan K.H. Abdul Wahab Hasbulloh Tambakberas Jombang. The population consist of 7 classes with 3 majors.

Table 3.1
Population and Sample

Class	Gender	Number of students	
XI MIPA 1	Male	20	
XI MIPA 2	Female	25	Control
XI MIPA 3	Female	24	Experimental
XI AGAMA 1	Male	25	
XI AGAMA 2	Female	38	
XI IPS 1	Male	27	
XI IPS 2	Female	20	

Sample is a small group of people selected to represent the much larger entire population from which it is drawn⁴⁷. In this research, the researcher uses *cluster random sampling* to determine the sample. There are two out of twenty classes as sample in this research. One of these classes is the experiment class, and the other is the control class. Both two classes are equal in major and gender. Moreover, the teacher recommends to choose XI MIPA 2 is control group and XI MIPA 3 is experimental group.

⁴⁶ Borg, W. R., Gall, M.D. 1989. *Educational Research an Introduction (5th ed.)*. New York, London:Longman. P. 216

⁴⁷ Charles, C.M. 1995. *Introduction to Educational Research (2nd Ed.)* White plains, Longman Ltd. P. 96

D. Research Procedure

The treatments in experimental class and control class are conducted for five meetings, including Learning style questionnaire, pre-test, class treatment, and post-test. The schedule and treatment activities are below:

Table 3.2

Schedule Treatment

Meeting	Experimental Group	Control Group
1	Learning Style Questionnaire and pre-test	Learning Style Questionnaire and pre-test
2	Treatment 1 using English Podcast: 'Travel' by To Fluency Channel	Treatment 1 using Animated video: Prophet Stories in English Prophet Muhammad
3	Treatment 2 using English Podcast: 'Phones and Social Media' by To Fluency	Treatment 2 using Animated video: The story of Adam
4	Treatment 3 using English Podcast: 'Would you rather?' by To Fluency	Treatment 3 using Animated video: Finding Nemo.
5	Post Test	Post Test

Table 3.3

Treatment Activities

Experimental Group	Control Group
The researcher introduced the material about listening	The researcher introduced the material about listening
The researcher gives the material of English listening "Travel"	The researcher gives the material of English listening "Eating Habits"
The researcher gives some unfamiliar words, useful expressions, and idioms that provides in the podcast video	The researcher gives some unfamiliar words, useful expressions, and idioms that provides in the video
The researcher gives the chance to watch English Podcast on LCD TV	The researcher gives the chance to watch animated video on LCD TV
The researcher gives the students chance to take notes about what they watch.	The researcher gives the students chance to take notes about what they watch.
The researcher makes groups of students consisting 2 students.	The researcher makes groups of students consisting 2 students.
The researcher brings together 2 groups to answer each other's questions from the opposing group	The researcher brings together 2 groups to answer each other's questions from the opposing group

E. Research Instrument

In this research, the researcher uses two instruments for collecting data. They are listening test and questionnaire.

1. Listening test

Listening test consists of pre-test and post-test. The students are provided listening task⁴⁸. The pre-test is used to measure of their prior skill, while the post test is used to measure the students' listening ability after giving the treatment. In assessing the students' listening skill, the researcher uses multiple choice test (Appendix 2 and 3). There are 28 Out of 32 valid items, there are number 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30 and 32. The further information of pretests and posttest blueprint is in Appendix 4.

2. Questionnaire

Questionnaire is used to identify the students who are categorized as visual, audio, or kinesthetic learner. There are 36 items of learning style questionnaires. The items of learning style questionnaires are adopted from Quantum Teaching written by DePorter et al⁴⁹. The participants are mainly asked to answer the questionnaires. The accumulation number of the highest point on the indicators is considered as a students' learning styles that suits them. The further information is presented in the following:

Table 3.4
Indicators of Students' Learning Style

Learning style	Indicator	No. of item
Visual	•Orderly and neat	1
	•Speak fast	2
	•Good long-term planner and organizer	3

⁴⁸ Kemdikbud. *Ujian Nasional*. 2017

⁴⁹ DePorter, B., Reardon, M., & Singer-Nourie, S. (1999). *Quantum Teaching (Translator Ary Nilandari. 2000)*. Bandung: Kaifa

	• Good speller and able to see words in mind	4
	• Remember what has been written down rather than what has been heard	5
	• Memorizing through visualization	6
	• Difficult to memorize oral order and asking someone to repeat it	7
	• Like to read rather than being read	8
	• Like to scratch when having a call/in a meeting	9
	• Like to demonstrate rather than deliver a speech	10
	• Like art such as picture rather than music	11
	• Know what to say but difficult to find the appropriate words to say it	12
Auditory	• Often talk to themselves	1
	• Easily distracted by noise	2
	• Move their lips and read out loud	3
	• Able to imitate the tone, and rhythm	4
	• Feel difficult to write but easy to tell a story	5
	• Speak in rhythm	6
	• Speak fluently	7
	• Like music rather than art	8
	• Learning by listening and remembering what have been discussed rather than what have been seen	9
	• Like to have a discussion and explained it in a long way	10
	• Like to spell it out rather than written it down	11
Kinesthetic	• Speak slowly	1
	• Touching to get someone's attention	2
	• Standing in a close distance when talking to someone	3
	• Physic orientation and like to move around	4
	• Learning through manipulation and practice	5
	• Memorizing by walking and seeing	6
	• Pointing to the text while reading	7
	• Use much gesture	8
	• Cannot sit still in a long time	9
	• Deciding something based on feeling	10
	• Make a knocking noise by pen, fingers, or foot	11

	when listening	
	• Spare the time for doing exercising and other physical activities	12

Adopted from DePorter, Reardon, and Singer-Nourie (1999)

F. Data Collection

The researcher collects the data as follows: First, the researcher chooses the eleventh-grade students of MA Unggulan K.H. Abdul Wahab Hasbulloh Jombang as the population. Second, the researcher takes XI MIPA 2 and XI MIPA 3 as the sample of the experiment. Third, the researcher gives the pre-test in order to measure the students' prior skill before doing the treatment. Fourth, the researcher conducts the treatment using English Podcast for experimental class and using animated video for control class. Fifth, the researcher gives the post-test in order to measure the students' listening skill in listening after doing the treatment. Finally, after conducting the points above, the researcher analyzes the result of the tests. An analysis is done to get the significant data result.

G. Data Analysis

1. Data Analysis of Questionnaire

There are 36 items of the questionnaires. The participants are mainly asked to respond on the basis of a four-point Likert scale, ranging from strongly agree, agree, disagree, and strongly disagree. The score for each item was 4, 3, 2, and 1. The accumulation number of the highest point on the indicators is considered as a students' learning styles that suits them.

2. Data Analysis of Listening Test

The researcher uses quantitative forms to analyze the data. Quantitative data is analyzed to obtain a numerical picture, to describe a series of numbers, and to present numbers in the form of averages, frequencies, and percentages.

After obtaining the data from pre-test and post-test in the experimental and control group, data analysis used by the researcher are descriptive analysis, after

that the normality test, the next is homogeneity test, and the last is independent sample t-test is explained as follows:

a. Descriptive Analysis

This is conducted to obtain an overview and exposure of the research data which includes the amount of data, maximum value, minimum value, and average value.

b. Prerequisite Test

The multivariate (MANOVA) analysis is a popular statistical method to measure and understand data structure in a higher dimension. In doing MANOVA calculation, several assumptions should be determined, such as the normality of multivariate, the homogeneity of covariances matrices, and the homogeneity of variances.

1) The Normality Test

The multivariate analysis requires a normal distribution population.⁵⁰ To deal with the normality, *one-sample Kolmogorov-Smirnov* test was used. If the value of significance (p) $>$.05, the distribution of the data is normal.⁵¹

2) The Homogeneity of Regression

To fulfil the preacquisition test dealing with ANCOVA analysis, there must be no interaction between the covariate and independent variable proven by *P value* obtained is higher than 0.05 ($p > \alpha$). The covariance matrices are homogenous if the significance value is higher than .05.

3) The Homogeneity of Variances

Homogeneity test is a test done to know that two or more groups of sample data come from populations with the same variance (homogeneous). *Levene's test* is used to compute the homogeneity of variances between control and experimental groups. If the result of the homogeneity test of variance is more than 0.05, both pre-test and post-test have the same variance homogeneity or equal.

4) Linier Relationship Between Covariate and Dependent Variable

⁵⁰ R. A. Jhonson and D. W. Wichern, *Applied Multivariate Statistical Analysis* (New Jersey: Prentice Hall, 2007), 285.

⁵¹ Duwi Priyatno, *SPSS Panduan Mudah Olah Data Bagi Mahasiswa Dan Umum* (Yogyakarta: Andi, 2018).

The purpose of the test of covariate linearity is to evaluate the relationship between the covariate and dependent variable. It can be estimated by the significant value $(p) < \alpha (.05)$.

c. ANCOVA

ANCOVA is a statistic used to measure the effect of independent variables called categorical on several dependent variables that display quantitative data. This analysis is also known as Analysis of Covariate. In this research, to test the hypothesis, the ANCOVA analysis had done with SPSS 16.0. Here are the criteria for Hypothesis testing.

1) If it is obtained that the significance value (2-tailed) < 0.05 , it can be concluded that there is a significant difference between students' speaking ability taught by using Digital Storytelling better than the students' speaking ability taught by printed text. It means that H_{a1} (Alternative hypothesis) is supported or H_{o1} (Null hypothesis) is rejected.

2) If it is obtained that the significance value (2-tailed) > 0.05 , it can be concluded that there isn't any between students' speaking ability taught by using Digital Storytelling better than the students' speaking ability taught by printed text. It means that H_{a1} (Alternative hypothesis) is not supported or H_{o1} (Null hypothesis) is not rejected.

d. Independent Sample t-test

The independent sample t-test is used to investigate whether there is a significant difference between the mean of two unpaired samples. It is used to answer the research problem number two and three. The researcher conducts the independent sample t-test with SPSS 25 and the testing criteria are:

- a. If it is obtained that the significance value (2-tailed) < 0.05 , H_{a1} (Alternative hypothesis) is supported or H_{o1} (Null hypothesis) is rejected.
- b. If it is obtained that the significance value (2-tailed) > 0.05 , H_{a1} (Alternative hypothesis) isn't supported or H_{o1} (Null hypothesis) is not rejected.