CHAPTER III
RESEARCH METHOD

This chapter discusses Research Design, Research Variables, Population and Sample, Research Procedure, Research Instrument, Data Collection, and Data Analysis.

A. Research Design

This research used the quantitative method. It is a method that uses data in the form of quantitative facts or data on numbers and everything that can be calculated. The design of this research was experimental. Experimental research manipulates and controls the cause variable and proceeds to observe the change in the effect variable.[41] The specific design of this research was quasi-experimental. The researcher chose this design due to the limitations in several respects, such as expenses, manpower, and time.

The researcher could only assign different treatments to two different classes at random in quasi-experimental research. Several steps are involved in quasi-experimental research.[42] First and foremost, the research population must be defined. Second, choose two classes that are equivalent in level from among all the current classes. Third, assigning one class to the experimental group and the other to the control group at random. Fourth, the experimental group receives the experimental treatment, while the control group receives the control treatment. Fifth, evaluate the outcomes of both groups' treatments. The final step is to calculate the difference between the experimental and control groups' average scores.

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[41]Latif, Mohammad Adnan. *Research method on Language Learning An introduction*. Malang: Universitas Negeri Malang, 2019.
[42]*Ibid* p. 96-97

B. Research Variables

In this research, the researcher used three variables, namely the independent, dependent, and moderator variables. The independent variable was digital storytelling, the dependent variable was students' speaking ability in the narrative text, and the moderator variable was gender.

C. Population and Samples

1. Population

The population of this research was the ninth graders of MTsN 1 Kediri in the academic year of 2021/2022. The ninth graders of MTsN 1 Kediri were divided into 12 classes. The total of population was 341 students.

2. Sample

A sample is a small group of people chosen to represent a much larger population.[43] The sampling technique employed in this study was probability sampling, which is a sampling strategy that gives each element (member) of the population an equal chance of being selected as a sample member. As control and experimental group, two classes were chosen. They were class IX-G and IX-I. The two classes were chosen because they are equal. Then the researcher chose IX-G as the experimental group, and Class IX-I as the control group.

D. Research Procedure

In conducting the research, there was a series of treatments. In this research the treatments were conducted in three meetings. To know the schedule of the treatments, a table of research timeline is drawn below.

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[43] Charles, C.M. (1995). *Introduction to Educational Research* (2nd Ed.) New York: Addison Wesley Longman, Inc.

1. Schedule of Treatment

Meeting	Experimental Group	Control Group
1	Pre-Test	Pre-Test
2	Treatment 1 using Digital Storytelling The topic is "Goldilocks and The Three Bears"	Treatment 1 using printed text The topic is "Goldilocks and The Three Bears"
3	Treatment 2 using Digital Storytelling The topic is "The Ugly Duckling"	Treatment 2 using printed text The topic is "The Ugly Duckling"
4	Treatment 3 using Digital Storytelling The topic is "Malin Kundang"	Treatment 3 using printed text The topic is "Malin Kundang"
5	Post Test	Post Test

2. Treatment Activities

Steps	Experimental Group	Control Group
1	The researcher introduced the material about Narrative Text	The researcher introduced the material about Narrative Text
2	The researcher played the movie video "Goldilocks and The Three Bears"	The researcher gave the printed text of 'Goldilocks and The Three Bears"
3	The researcher gave the opportunity for students to identify as many questions as possible related to the story	The researcher gave the opportunity for students to identify as many questions as possible related to the story
4	The students worked in groups to discuss important points of	The students worked in groups to discuss important points of

	the story, including the plots.	the story, including the plots.
5	The researcher allowed students to work on questions about the personality of each character in the story and discussed it with their groups.	The researcher allowed students to work on questions about the personality of each character in the story and discussed it with their groups.
6	The students made a retelling story script entitled "Goldilocks and The Three Bears" individually, but students were allowed to discuss witha group of friends.	The students made a retelling story script entitled "Goldilocks and The Three Bears" individually, but students were allowed to discuss with a group of friends.
7	Students practiced retelling stories based on their own in their own groups.	Students practiced retelling stories based on their own in their own groups.

E. **Research Instrument**

This research utilized tests to assess students' progress after implementing digital storytelling into the teaching-learning process. Pre-test and post-test tests were conducted by the researcher. The purpose of the pre-test was to determine the students' actual condition before they received treatment. The purpose of the pre-test was to determine what an individual had learned and his or her current level of performance.In the pre-test of this research, students were ordered to speak up one by one. First, they were given some titles of narrative text and they chose one story they prefer. Then they were given some time to write the draft about the story, after that they should retell the story orally.

Following the implementation of the digital storytelling medium, a post-test was conducted to see if the use of digital storytelling could effectively help

students improve their speaking skills in narrative text.The task of the post-test was as follows: the teacher gave picture-series of certain narrative text. Then the students retold the story orally.

Brown's rating scale was used to assess students' performance.[44] The students' performances in pre-test and post-test were limited in terms of four aspects. Pronunciation, grammar, vocabulary, and fluency were the four aspects. In measuring the students' performances, the researcher filled the scoring rubric. Each score's criterion was also included in the rubric. It was useful in determining the students' grades for the researcher.

F. Data Collection

The procedures of data collecting were conducted as follows: First, the researcher chose the ninth-grade students of MTsN 1 Kediri as the population. Second, the researcher took IX-G and IX-I as the sample of the experiment. Third, the researcher administered a pre-test before applying the digital storytelling. The purpose was to measure the students' speaking ability in narrative text. In the pre-test, students were ordered to speak up one by one. They were given a certain topic of narrative text then they were given a short time to make the script of the story, after that they should tell the story orally. Fourth, the researcher conducted the treatment using Digital Storytelling for the experimental group and using printed material for the control group. Fifth, the researcher administered a post-test after applying digital storytelling. Post-test was used to measure students' achievement after the treatment was given. Finally, after conducting the points above, the researcher analyzed the result of the tests. An analysis was done to get the significant data result.

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[44]Brown, H. Douglas. 2004. *Language Assessment: Principles and Classroom Practices*.SanFransisco State University, 2004.

G. Data Analysis

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

In the scoring rubric, there were 4 aspects that are calculated, including pronunciation, grammar, vocabulary, and fluency. Each aspect had a scale of 1-5.

Aspect	Score	Explanation
Pronunciation	5	Have a look at some foreign language traces.
	4	Though there is a distinct accent, it is always understandable.
	3	Pronunciation problems need careful attention and can result in misunderstandings.
	2	Because of the pronunciation problems, it's difficult to comprehend. Is regularly requested to repeat themselves.
	1	Speech is virtually unintelligible due to severe pronunciation issues.
Grammar	5	Make few (if any) grammatical or word-order mistakes.
	4	Makes occasional grammatical and/or word order errors that do not affect meaning.
	3	Make numerous grammatical and word-order errors, which can sometimes confuse the message.
	2	Grammar and word order errors make comprehension difficult. Must frequently rephrase sentences and/or limit him to simple patterns.
	1	Grammar and word order errors are so severe that speech is nearly unintelligible.
Vocabulary	5	The language and idioms are almost identical to those of a native speaker.

	4	Because of lexical limitations, he sometimes uses incorrect terminology and/or must rephrase ideas.
	3	Frequently utilizes incorrect words; communication is limited due to a lack of vocabulary.
	2	Comprehension is difficult due to word misuse and a limited vocabulary.
	1	The lack of vocabulary is so severe that conversation is nearly impossible.
Fluency	5	Speech that is as natural and fluent as that of a native speaker.
	4	Language problems appear to have a minor impact on speech speed.
	3	Language problems have a significant impact on speed and fluency.
	2	Usually hesitant; language barriers frequently force silence.
	1	The conversation is nearly impossible due to the slow and fragmented nature of speech.

The students' speaking scores were evaluated by four aspects and each aspect had a score or level. The total of a maximum score of four aspects was twenty. The description of the scoring system is as follow:

$$Score = \frac{Total\ score}{Maximum\ score\ (20)} \times 100$$

The researcher continued to analyze the data after collecting it, namely the pre-test and post-test scores from the experimental and control groups. The researcher utilized SPSS 25.0to analyze the data. The researcher compared the two tests to see if digital storytelling has a significant effect on students' speaking abilities.

After obtaining the data from pre-test and post-test in the experimental and control group, the researcher analyzed the data.

1. Descriptive Analysis

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

2. Testing assumption for ANCOVA

a. The Normality Test

The multivariate analysis requires a normal distribution population.[45] 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.[46]

b. The Homogeneity ofRegression

To fulfil the pre-acquisition 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 > α). The covariance matrices are homogenous if the significance value is higher than .05.

c. 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.

d. Linier Relationship Between Covariate and Dependent Variable

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) < α (.05).

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[45]R. A. Jhonson and D. W. Wichern, *Applied Multivariate Statistical Analysis* (New Jersey: Prentice Hall, 2007), 285.
[46]Duwi Priyatno, *SPSS Panduan Mudah Olah Data Bagi Mahasiswa Dan Umum* (Yogyakarta: Andi, 2018).

3. 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 25.0. Here are the criteria for Hypothesis testing.

a.   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 and the students' speaking ability taught by printed text. It means that Ha1 (Alternative hypothesis) is supported or Ho1 (Null hypothesis) is rejected.

b.   If it is obtained that the significance value (2-tailed) > 0.05, it can be concluded that there isn't any difference between students' speaking ability taught by using Digital Storytelling and the students' speaking ability taught by printed text. It means that Ha1 (Alternative hypothesis) isn't supported or Ho1 (Null hypothesis) isn't rejected.

4. 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, Ha1 (Alternative hypothesis) is supported or Ho1 (Null hypothesis) is rejected.

b. If it is obtained that the significance value (2-tailed) > 0.05, Ha1 (Alternative hypothesis) isn't supported or Ho1 (Null hypothesis) isn't rejected.