

CHAPTER 3

RESEARCH PROCEDURES

3.1 Research Design

The design of this study is quantitative method using pre-experimental design. Pre-experimental is a study that takes in real a life-setting rather than in a laboratory setting, they are often considered not truly experimental research, but rather correlation research, which involves identifying statistics between two variables rather than causal relationship.

The research design used was one-group pre-test post-test design. One group pre-test post-test design is a design used to reveal cause-and-effect relationships involving only one group of subjects by comparing pre-test and post-test scores. If post-test scores are above the pre-test scores, one assumes the triage training was successful. This design involves a group that is given a pre-test (O1), given treatment (X), and given post-test (O2). Treatment success was determined by comparing the pre-test and post-test scores. The purpose of this one-group pre-test post-test design is to find out whether the Digital Storytelling treatment has an effect on students' visual memory as seen from changes in pre-test and post-test scores and seen from the p-value greater than the 0.05 (5%) of significance level.

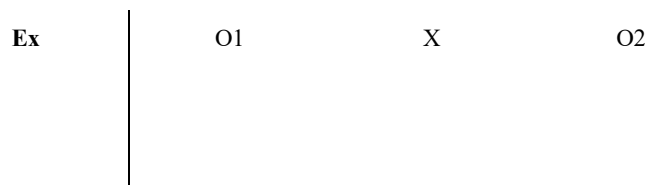


Figure 1. One Group Pre-test Post-test Design

Notes:

Ex = Experimental group

O1 = A pre-test is given before learning using digital storytelling

X = The treatment is carried out by learning using digital storytelling

O2 = A post-test is given after learning using digital storytelling

3.2 Variables of the Research

This research consists of 2 variables:

1. **Independent Variable:** The independent variable is a variable that affects or causes the change or the emergence of the dependent variable. The independent variable in this research is Digital Storytelling.
2. **Dependent Variable:** The dependent variable is the variable that is affected or that is the result, because of the independent variable. In this research, the dependent variable is students' Visual Memory.

3.3 Population and Sample

The population of this study was all students in 5th grade in SDN 1 Nagritengah Purwakarta in Academic Year 2023/2024. While, the sample was 30 students in VA class as the experimental group. The sample was taught animal stories by using Digital Storytelling media in 5 meetings (60 minutes per meeting) to see its effectiveness on student's visual memory.

3.4 Technique of Collecting the Data

Pre-test and post-test were implemented to collect data. The procedures of collecting the data were as follows:

1. Pre-test

The researcher gave a pre-test before giving treatment to the students. The test consisted of 10 questions. The aim of this pre-test was to know the student's visual memory skills before treatment

2. Post-test

The researcher gave post-test to the students after the treatment. The aim of the post-test is to find out and to know if the results of treatments have an effect or increasement or not to the student's visual memory skills ability by comparing the student's pre-test and post-test scores.

3.5 Research Instrument

The research instrument is a measuring tool in research. In a study, a research instrument is needed as a tool to obtain research data. The instruments needed in this study is tests that consist of 10 questions.

Test is a procedure to determine the existence, quality, or truth of something or someone's ability. The instrument used in this study was a test question with short answers. In this research, the researcher arranges the question herself based on the story of the Digital Storytelling story that is given to students. The advantage of the tests made by researchers is that they can be modified to specific content. For the assessment of student-test results, the scoring depends on students' correct answers on the test. The scoring of the answers from this instrument used a score of 10 for correct answers and a score of 0 for wrong answers.

3.6 Data Analysis Technique

The data processing stage was carried out by collecting data using pre-test and post-test. After the pre-test and post-test data were collected, data processing was then carried out using the Statistical Package for Social Sciences (SPSS) 27 for Windows software program. The following are the data processing steps used in the research;

1. Descriptive Statistics

Descriptive statistics were used to calculate the differences between the critical thinking scores for the group and each participant before and after completing the program.

2. Normality test

The normality test is a test carried out as a prerequisite for carrying out data analysis. The normality test is carried out to determine whether the data is good and appropriate to prove whether the data is normally distributed or not. The normality test is seen from the pre-test and post-test data. The result used was One-Sample Kolmogorov-Smirnov Test using the Statistical Package for Social Sciences (SPSS) 27 for Windows software. The decision criteria in the normality test on SPSS are:

- a. If the significance value is > 0.05 , the data is normally distributed.
- b. If the significance value is < 0.05 then the data is not normally distributed.

After a normality test was carried out using One-Sample Kolmogorov-Smirnov Test and it was stated that the data was normally distributed, it was then continued

with Paired Sample Test on the results of the pre-test and post-test data with the Statistical Package for Social Sciences (SPSS) 27 for Windows software.

3. Hypothesis Test using Paired Samples Test

This hypothesis test was carried out after testing normality and homogeneity with a normal and homogeneous distribution, then the analysis continued with hypothesis testing using the one-sample t-test. Paired samples test is an analytical technique for comparing the average of two variables in one group. This technique is used to test whether a certain value is significantly different or not from the average of a sample, or to test the difference between the average of a sample and a hypothetical value. The paired samples test uses Statistical Package for Social Sciences (SPSS) 27 for Windows software with a significance level of 0.05. With the decision criteria in the one sample t-test in SPSS, there are two approaches, namely the classical approach and the probabilistic approach. The following is an explanation of the decision criteria.

a) Classical approach

(1) If $t \text{ count} < t \text{ table}$, then H_0 is accepted and H_a is rejected.

(2) If $t \text{ count} > t \text{ table}$, then H_0 is rejected and H_a is accepted.

b) Probabilistic approach, comparing probability or significance values with α (alpha)

(1) If the significance value or probability value is $> \alpha$, then H_0 is accepted so H_a is rejected.

(2) If the significance or probability value $< \alpha$, then H_0 is rejected so H_a is accepted.

The statistical hypothesis created to determine the effectiveness of learning is as follows.

(a) H_0 = The use of Digital Storytelling as learning media cannot increase students' visual memory in language learning.

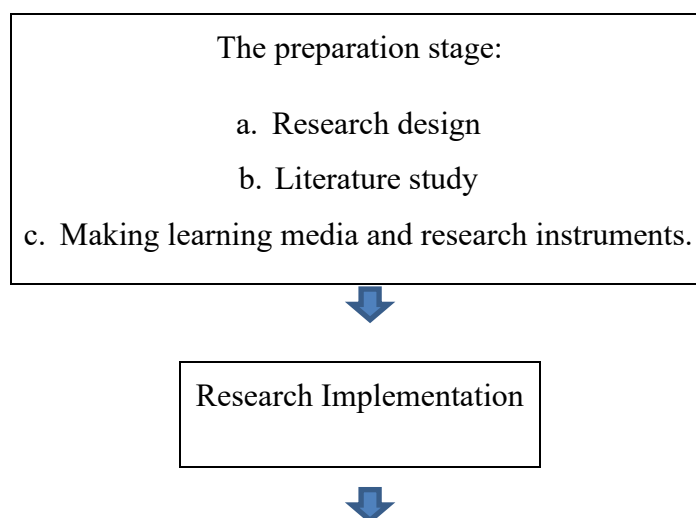
(b) H_a = The use of Digital Storytelling as learning media can increase students' visual memory language learning.

3.7 Steps of the Research

The experimental procedure is carried out in the following steps:

1. The preparation stage, includes:
 - a. Research design
 - b. Literature study
 - c. Making learning media and research instruments.
2. The research implementation stage, including:
 - a. Prepared the experimental class.
 - b. Carry out a pre-test to determine the condition of students' abilities.
 - c. Use of Digital Storytelling media. The process of using the media is as follows: (1) conditioning the O1 X O2 appliance and research classrooms; (2) the opening of the lesson; (3) a brief explanation of the short story by the researcher; (4) The use of DST by playing short story videos. (5) Providing a post-test for knowing the condition of students' abilities after being given treatment with DST media.
3. Processing and data analysis
4. Conclude the research results

The research procedure above is arranged in a systematic flow. The explanation of the above procedure can be seen briefly on the next page.



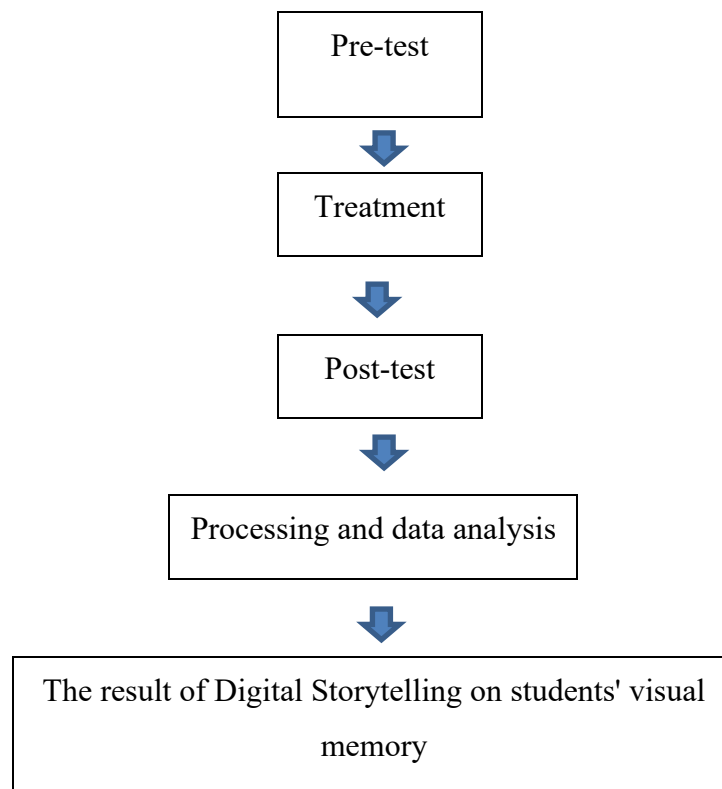


Figure 2. Experimental Procedure Flowchart

3.8 Time and Place of the Research

This research was conducted from research proposal writing in October 2021 until thesis examination in May 2024. Afterward, this research took place in one of the Elementary Schools in Purwakarta, SDN 1 Nagritengah.

No	Description	Feb - Jun 2021	Aug 2021	May 2024	Jun 2024	Jul 2024
1.	Research Proposal Writing	■				
2.	Research proposal examination		■			
3.	Data collection			■		
4.	Data analysis			■		
5.	Report			■		
6.	Comprehensive examination				■	
7.	Thesis examination					■

Table 2. Research Schedule