

CHAPTER III

RESEARCH METHODE

A. Research Design

This research employed an experimental approach using quantitative methods, meaning that the data collected were processed and analyzed in the form of numbers and statistics in order to determine whether the Velcro Darts Game is effective in improving the English vocabulary mastery of seventh-grade students at SMPN 1 Barabai, Hulu Sungai Tengah Regency. More specifically, the design used is a Quasi-Experimental design with a Non-Equivalent Group Pretest-Posttest model, in which both the experimental group and the control group are given a pre-test at the beginning and a post-test at the end of the study period, but only the experimental group receives the treatment. This design was chosen because it allows for meaningful comparison between two intact classroom groups without requiring random assignment of individual students — a condition that is rarely feasible in real school settings.

In this study, Class VII-C served as the experimental group, which received the Velcro Darts Game as the instructional treatment across four sessions, while Class VII-B served as the control group, which continued with the conventional teaching method throughout the same period without any modification. Both groups took an identical pre-test before the treatment began and an identical post-test after the treatment was completed, with each test allocated 30 minutes. The collected

pre-test and post-test score data from both groups were then analyzed using an independent samples t-test (uji-t) at a significance level of 5% ($\alpha = 0.05$), which allowed the researcher to determine whether there is a statistically significant difference in vocabulary improvement between the two groups as a result of the treatment. The design can be illustrated as follows:

Group	Pre-test	Treatment	Post-test
Control	O1	-	O2
experimental	O1	X	O2

B. Research Setting

The research was conducted at SMPN 1 Barabai, which is located on Jalan Budi Utomo, Barabai, Hulu Sungai Tengah Regency, South Kalimantan Province. The school operates under the management of the local government and is one of the state junior high schools in the regency.

The research was conducted over the course of one month, beginning with the administration of the pre-test, handing out the Vocabulary for the students to learn, followed by three treatment sessions for the experimental group using Velcro Dart Game, and concluding with the post-test for both groups. Each treatment session was carried out within a time allocation of 2×40 minutes, in accordance with the standard lesson schedule at SMPN 1 Barabai. This research took place from January 14 to February 25 on Wednesday or Thursday and was carried out once a week.

C. Population and sample

1. Population

The population of this research is the entire seventh-grade students at SMPN 1 Barabai, Hulu Sungai Tengah Regency in the academic year 2025/2026. The seventh grade at SMPN 1 Barabai consists of seven classes, from Class VII-A through Class VII-G, with a total population of 207 students.

2. Sample

The sample in this research consists of two classes selected from the total population of eight seventh-grade classes. The sampling technique used is purposive sampling, in which classes are selected intentionally based on specific criteria relevant to the research objectives rather than through random selection. This technique is commonly employed in quasi-experimental educational research where intact classroom groups must be preserved (Sugiyono, 2015).

The two classes selected as the research sample are Class VII-B and Class VII-C. Class VII-B, consisting of 24 students, serves as the control group and receives no treatment — continuing with conventional English instruction as practiced at the school throughout the study period. Class VII-C, consisting of 27 students, serves as the experimental group and receives the treatment in the form of the Velcro Darts Game across four sessions. The total research sample therefore comprises 51 students.

The selection of these two classes was based on three considerations: (1) both classes are taught by the same English teacher, ensuring that differences in teaching style outside the treatment do not confound the results; (2) both classes showed comparable average vocabulary scores on the pre-test (Class VII-B: $M = 45.1$; Class VII-C: $M = 46.1$), confirming that the two groups were at a similar starting level before treatment; and (3) the class schedules of VII-B and VII-C allowed the treatment sessions to be conducted within the same time period, ensuring that external variables such as seasonal or curriculum-related factors affected both groups equally.

D. Data Source

In this research, the extracted includes the primary data and secondary data as the supporting data:

1. Primary Data (main data)

- a) Pretest initial test results
- b) Posttest final test results

2. Secondary Data (supporting data)

The supporting data will be used to supports the main data, in this case the general condition of the research location (SMPN 1 Barabai) and the subjects, such as the teacher's condion, the condition of students, and the condition of facilities and infrastructure in the classroom.

E. Data Collection Techniques

In collecting research data, Researchers carried out tests in collecting data. The test was carried out twice, pre-test and post-test. The pre-test is given to find out about students initial skills before going into the material (ice breaking). Data collection is provided chronologically as follows:

1. Pre-Test

The pretest is used to determine students' vocabulary skills. This is the procedures for pre-test:

- a) The researcher explains about activity the students are going to do in the following weeks.
- b) Researchers hand out the pre-test instrument to students.
- c) Researchers gave students a maximum of one hour to answer all question.
- d) After the students finished answering their test, the researcher collect their answer to check.

2. Treatment

After the control groups and experimental have been given a pre-test, the next stage is to carry out treatment to experimental group. Treatment in the experimental class used instruments in the form of Velcro dart games, while no change on learning activity in the control group. In this study, the treatment was carried out 3 times in a month. Each treatment was carried out within 2 x 40 minutes. The schedule for the treatment was as follows:

- a. Second week, handing out the vocabulary to the students

No.	English	Indonesian
1	afternoon	sore

2	appreciate	menghargai
3	ball	bola
4	bitter	pahit
5	blink	berkedip
6	breakfast	sarapan
7	brother	saudara laki-laki
8	burglar	perampok (rumah)
9	buy	membeli
10	chips	keripik
11	citizen	warga negara
12	cloudy	berawan
13	coffee	kopi
14	cold	dingin
15	cool	sejuk
16	cop	polisi
17	day	hari
18	drink	minum
19	eat	makan
20	evening	malam
21	fast	cepat
22	fire	api
23	flat	datar
24	friend	teman
25	gift	hadiah
26	hate	benci
27	hot	panas
28	ice cream	es krim
29	job	pekerjaan
30	lazy	malas

31	like	suka
32	long	panjang
33	love	cinta
34	meat	daging
35	meatball	bakso
36	messy	berantakan
37	milk	susu
38	misty	berkabut
39	morning	pagi
40	need	butuh
41	noon	tengah hari
42	oven	oven
43	pizza	pizza
44	prepare	menyiapkan
45	principal	kepala sekolah
46	professor	profesor
47	protect	melindungi
48	quick	cepat
49	rainy	hujan
50	robber	perampok
51	room	kamar
52	round	bulat
53	sausage	sosis
54	sets (sun sets)	terbenam
55	sister	saudara perempuan
56	slow	lambat
57	smart	pintar
58	sour	asam
59	stupid	bodoh

60	student	murid/siswa
61	sun	matahari
62	sunny	cerah
63	sweet	manis
64	teacher	guru
65	thief	pencuri
66	train	kereta api

- b. Third – Fifth week, the treatment session with Velcro Dart Game.

In this treatment session the student was They were called to the front of the class one by one to play the game, then they were asked to take questions from the mystery box according to the target they hit in the game, then answer their questions in front of the class so other students could listen and get prizes if their answers were correct.

3. Post-Test

Researchers gave the final test (post-test) to measure students' Vocabulary skills on control group and experiment group after participating in the treatment. The test is the same as the pre-test.

F. Research Instruments

To achieve satisfactory research results, having an instrument that is used as a measuring tool in research is necessary. A research instrument is a tool used to measure observed natural and social phenomena (Sugiyono, 2015).

1. Development of research instruments

The development of research instruments using test instrument. The test instrument is a set of test measuring tools designed by researcher. The instruments used are in the form of games. Adjustments to this test instrument were carried out with due attention the following things.

- a. This research is in accordance with the curriculum
- b. Research looks at the aspects of children's religious and moral development with different portions in every aspect.
- c. Scoring of activity results

The results of activities are measured through tests carried out 2 times, the previous test treatment (pre-test) and test after treatment (post-test).

G. Data Analysis

Data Analysis techniques are intended to find answers to questions that have been previously formulated. The approach used in this research is a quantitative approach, so the data analysis uses statistical analysis techniques. The analytical statistics used are different tests, namely the t test or Paired Sample T-test .

Paired Sample T-test is a procedure which is used to compare the averages of two variables in one group. This means that this analysis is useful for testing against two related samples or two paired samples (Jaya, 2020). The criteria results are as follows:

If $t_{\text{count}} < t_{\text{table}}$, H_0 is accepted.

If $t_{\text{count}} > t_{\text{table}}$, H_0 is rejected

1. H_0 : Null Hypothesis

There was no significant difference in improving students' speaking skills before and after being taught with Velcro Dart games activities at SMPN 1 Barabai.

2. H_a : Alternative Hypothesis

There is a significant difference in improving students' vocabulary skill before and after being taught with Velcro Dart games activities at SMPN 1 Barabai.

The following are the steps for the Paired Sample T-test using the SPSS version 25 program:

- a) Open SPSS software , then click the View variable,
- b) Type the attribute on name, decimals and label columns ,
- c) Click View data then enter Pretest data and Posttest ,
- d) Click Analyze-Compare Means-Paired Sample T Test,
- e) Enter Pretest and Posttest into the Paired Variable column ,
- f) Click OK (Ahmad, 2020).