CHAPTER 3
RESEARCH PROCEDURES

3.1 Method of the Research

In this research, the researcher used the experimental method as one of the quantitative research methods. In experimental research, the aim is to seek the effect or the influence of variable. There are the systematic manipulation called the independent variable and the dependent variable (Donald et al., 2010).

This research used Quasi-Experimental designs; with the nonrandomized control group; experimental group and pretest-posttest design. The pretest was given to both classes, provided treatment to the experimental group only, and then gave a vocabulary posttest to both groups.

Table 3.1 Research Design

Experiment Group	Pretest	Treatment	Posttest
Control Group	Pretest		Posttest

3.2 Variables of the Research

This research had two variables, they are independent and dependent variables, which are described as follow:

1) Independent Variable

    The independent variable of this research was the crossword puzzle games, symbolized by X.

2) Dependent Variable

    The dependent variable of this research was students' vocabulary, symbolized by Y.

3.3 Population and Sample

3.3.1 Population

The population of this research was the 7th grade Junior High School students in Tasikmalaya.

3.3.2 Sample

The sample of this research was VII-I as the experimental class consisting of 35 students and VII-H as the control class consisting of 35 students. The sample is determined by using cluster sampling.

3.4 Data collection Technique

In this study, to obtain data, the researcher used tests; pretest and posttest. In the pretest activities, the researcher provided questions about vocabulary test to both the experimental group and the control group. The goal of the test was to find out the students' prior cognitive knowledge. Then, gave treatment to the experimental group using a crossword puzzle game in teaching vocabulary. Meanwhile, the controlled group taught using conventional methods. Both groups received six treatments. At the end, both experimental and controlled groups obtained a post-test to see whether the treatment given influences the students' vocabulary.

3.5 Research Instrument

Vocabulary tests used as the instrument in this research. There are 3 types of tests namely; multiple choice, word translation and jumbled sentences. Before the test was executed to the sample, a validity and reliability test was conducted first and SPSS used to analyze the data.

Table 3.2 Blueprint of Vocabulary Test

No	Aspect	Definition	Type of Test	Test Item
1.	Meaning	Understanding the meaning of the words.	Multiple Choice	1, 2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16,17,18,19,20
2.	Written	Being able to write the words in the written form.	Word Translation	21,22,23,24,25,26,27,28,29,30, 31,32,33,34,35

3.	Use	The ability to accurately utilize the words in a sentence.	Jumbled Sentence	36,37,38,39,40,41,42,43,44,45, 46,47,48,49,50

3.5.1 Validity

Validity is carried out to know whether the instrument can measure what will be measured. The vocabulary test was given to a non-sample. It was VII-G class. To know if the test is valid or not, the researcher compared the r observed (Pearson correlation) and r table df (35) = (0.32). If r observed > r table, it means the instrument test is valid. Meanwhile, if r observed < r table, it means the instrument test is not valid.

After the validity was analyzed, there are 24 questions which are valid. There are numbers 1, 2, 5, 8, 9, 11, 14, 15, 17, 21, 22, 23, 24, 27, 28, 31, 34, 35, 38, 39, 41, 42, 43, 45. Moreover, the researcher only used 20 questions given to the control and experiment class for pretest and posttest since it represents all aspects.

3.5.2 Reliability

Reliability is carried out to see the consistency of the instrument. Here is the result of reliability test:

Table 3.3 Reliability

Cronbach's Alpha	N of Items
0,789	45

Table 3.4 Internal Consistency

Cronbach's Alpha	Internal Consistency/ Reliability Test
$\alpha \geq 0.9$	Excellent (High – stakes testing)
$0.7 \leq \alpha\ 0.9$	Good (low stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor

$\alpha < 0.5$	unacceptable

To indicate if the test is reliable or not, the researcher matched the cronbach alpha score with the internal consistency/reliability test provided by Streiner (2003) as cited in Jugessur (2022) from the table above, it can be seen that the cronbach's alpha is 0,789 which means that the test is considered as good. In conclusion, there are 24 questions which are valid and reliable thus can be used as the instrument.

3.6 Data Analysis Technique

In analyzing the data, the search carried out descriptive statistics, normality test, homogeneity test, and independent sample t-test by using IBM SPSS Statistics 25 version. Descriptive statistics conducted to explain and describe research data, including the minimum and maximum score, and mean in both control and experiment class. After that, a normality test was conducted to check whether the data distribution is normal or not. Next, a homogeneity test was carried out to discover the data whether it is homogenous or not and finally, analyzed an independent sample t-test to answer the research hypothesis whether there is an influence of using crossword puzzle games on Junior High School Students' vocabulary or not.

3.6.1 Normality

Normality test was conducted to check whether the data distribution is normal or not. Here is the result table of normality test:

Table 3.5 Normality

	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hasil Belajar Siswa	Pretest Control	.098	35	.200[*]	.956	35	.171
	Posttest Control	.120	35	.200[*]	.935	35	.038
	Pretest Experiment	.133	35	.123	.924	35	.018
	Posttest Experiment	.148	35	.051	.928	35	.024

From the table 4.2, it can be seen that all the sig values from Kolmogorov-Smirnov are higher than 0.05. As a result, the data distribution is normal and the statistic parametric can be used by the researcher. The researcher used an independent sample t-test because this research has two groups.

3.6.2 Homogeneity Test

Homogeneity test was conducted to discover the data whether it is homogen or not. This is the table as the result of homogeneity test:

Table 3.6 Homogeneity

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	2.341	1	68	.131
	Based on Median	2.130	1	68	.149
	Based on Median and with adjusted df	2.130	1	64.150	.149
	Based on trimmed mean	2.240	1	68	.139

As showed in the table, the sig based on mean $0.131 > 0.05$ which means that the variances data of posttest control and posttest experiment is homogeny.

3.7 Steps of the Research

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Steps	Description
Identifying the problem	The researcher found a phenomenon and/or an issue based on self-experience during School Based Internship at one of junior high schools in Tasikmalaya, held by Siliwangi University. Researchers found students who still had difficulty understanding vocabulary in English. Teaching vocabulary given is considered flat and monotone to students. Therefore, researchers want to investigate the influence of crossword puzzle games as teaching

	media to teach vocabulary.
Literature Review	The researcher reviewed several literatures that related to the study such as books, journal and articles in order to support this research
Identifying Hypothesis	Alternative Hypothesis: There is an influence of using Crossword Puzzle games on teaching Junior High School students' vocabulary
	Null Hypothesis: There is no influence of using Crossword Puzzle games on teaching Junior High School students' vocabulary
Collecting the Data	The researcher gave a pretest to the experimental group and control group to find out the student's prior knowledge. After that, the researcher gave a treatment to the experimental group by using a crossword puzzle game in teaching activity. No treatment was given to the control groups; they used textbooks only for teaching activities. After giving treatment, the researcher gave them a posttest to know the result.
Analyzing the Data	In analyze the data, the researcher did a normality test to find out whether the data distribution is normal or not.
Conclusion	After all the steps, the researcher interpreted and gave the conclusion of the research.

3.8 Time and Place

This research is conducted at one of the Junior High Schools in Tasikmalaya.

Table 3.8 Timeline of the Research

No	Description	Mar	Apr	Mei	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
1.	Research Proposal Writing	██	██	██	██	██								
2.	Research Proposal Examination						██							
3.	Data Collection							██						
4.	Data Analysis								██	██	██	██		
5.	Report												██	
6.	Thesis Examination													██