CHAPTER III
RESEARCH METHOD

Quantitative research can be defined as a methodology rooted in positivism, focusing on the analysis of specific populations and samples (Sugiyono, 2013). This method typically involves random sampling, the use of research instruments for data collection, and statistical analysis to test predetermined hypotheses. In this study, a quantitative approach with a descriptive design is applied to investigate the research objectives.

A. Research Design

this research employs a descriptive approach to gain a detailed and comprehensive understanding of a particular phenomenon. As explained by Subagyo, A. (2020), descriptive research is designed to describe and characterize the current state of the research subject within its context. The study surveys the challenges faced by eighth-grade students at SMPN 06 Kaur in mastering vocabulary using a descriptive quantitative research framework.

B. Place and Time

This research was conducted at SMPN 06 Kaur on class VIII students in the even semester of the 2024|2025 academic year on Jl. Raya Tanjung Kemuning, Kecamatan Tanjung Kemuning, Bengkulu city Province.

This research was carried out from September 11 to October 11, 2024.

C. Population And Sample Research

1. Population.

Sugiyono (2013) defines population as a general area containing objects or subjects with specific qualities or characteristics determined by researchers for study purposes. In this study, the population consists of approximately 120 eighth-grade students at SMPN 06 Kaur.

Class	Population
VIII A	26
VIII B	24
VIII C	30
VIII D	20
VIII E	20
Total	120

1.1 Describe To Population from eight graders of SMPN 06 KAUR

2. Sample

According to Arikunto, the sampling strategy used in this study was "It is better to take all subjects if there are fewer than 100." The study is a population study. Ten to fifteen percent or twenty to twenty-five percent can be taken if the subject is large or more (Arikunto, 2002:107). The following criteria were taken into consideration when sampling: schools selected as Standard School Pilots International, taking into account time, financial, and research staff constraints. Thus,

the research sample consisted of just one school. School SMPN 06 KAUR is this person.

So here the research sample takes 30 out of 25% of the population.

Class	Population
VIII	30
Total	30

D. Operational Definition of Variables.

According to Sugiyono (2018), the operational definition of descriptive quantitative research data regarding students' difficulties in understanding vocabulary is: Conceptual Definition Students' difficulties in understanding vocabulary are obstacles or difficulties experienced by students in comprehending words or terms.

Operational Definition Students' difficulties in understanding vocabulary are measured by:

1. Ability to define difficult words.
2. Ability to use difficult words in sentences.
3. Ability to understand the context of difficult words.

Indicator

1. The number of difficult words that cannot be defined.
2. Number of incorrect sentences due to errors in the use of difficult words.

3. Score of errors in understanding the context of difficult words.

Units of Measurement

1. Number of words (0-100).
2. Percentage of word usage errors (0-100%).
3. Context understanding score (1-5).

Measurement Instruments

1. Vocabulary test (multiple choice).
2. Test the use of difficult words in sentences.
3. Questionnaire for understanding the context of difficult words.

Measurement Procedure

1. Students take a vocabulary test.
2. Students are asked to make sentences using difficult words.
3. Students answer a questionnaire understanding the context of difficult words. **Measurement Criteria**

1. Score 0 - 30 : High difficulty.
2. Score 31- 60 : Medium difficulty.
3. Score 61 - 100 : low difficulties.

B. Research Instrument

Research instruments are the tools that researchers design to accomplish the objectives they specify when they do research. To put it another way, a research instrument, also known as a research tool, is a specially designed apparatus that makes gathering data easier for analysis. The instrument utilized in this investigation was a 20 item questionnaire.

Questionnaires.

Table 3.2

Blue print of Quesionare Students' Difficulties of Mastery Vocabulary.

No	Aspect	Indicator	No item	Total of item
1	Pronounciation	Students answered some questions about word pronunciation with questionnaires provided by researchers.	1,2,3,4,5, 25.	6
2	Spelling	Students answered some questions about spelling words with questionnaires provided by researchers.	6,7,8,9,10	5
3	Grammar	Students answered some questions about grammar withquestionnaires provided by researchers.	11,12,13, 14,15,24.	6
4	Meaning	Students answered some questions about meaning with questionnaires provided by researchers.	16,17,18, 19,20,21, 22,23.	8

Table 3.3

Indicator of Questionnaires Validity

No	**Aspect**	**Number of item**	**Items**
1	pronounciation	1, 2, 3, 4 ,5	5
2	Spelling	6, 7, 8, 9, 10	5
3	Grammar	11, 12, 13, 14, 15, 16, 17	7
4	Meaning	18, 19, 20, 21, 22, 23, 24, 25	8
	Total items		25

The indicators for the questionnaire above are based on the 4 aspects of Thornbury Cameron, namely pronunciation, spelling, grammar, and meaning. This questionnaire was given to 30 samples at SMPN 06 Kaur with 25 questions. The questionnaire, which had been validated previously, was carried out a try-out at SMPN 06 Kaur However, before administering to the student, the researcher conducted a tryout to determine whether the instruments were reliable and whether students could better comprehend the instrument.

Here, the research exploits a Likert scale with a Likert scale of 1–5, with respondents and points with choices of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). Inside the distribution of the questionnaire on this observe.

Table 3.4

Criteria of score questionnaires

No	Statement	Symbol	Score
1	Sangat Tidak Setuju (*Strongly Disssagree)*	STS	1
2	Tidak Setuju (*Disaggre*)	TS	2
3	Netral *(Neutral)*	N	3
4	Setuju *(Agree)*	S	4
5	Sangat Setuju *(Strongly Agree)*	SS	5

Documentation

According to Sugiyono (2018), the documentation is to obtain data directly from the research place, including relevant books, regulations, activity reports, photographs, documentaries, and relevant data research. Documentation is done in research of school images studied and the activities of learners.

1. Researchers collected data using a questionnaire, Distributing questionnaires, during the try-out at SMPN 06 Kaur.
2. The researcher calculated the questionnaire scores using the normalittest and Homogeneity test.
3. The researcher recorded videos of 5 aspects of responses used bystudents in class.
4. Researchers also take photos as research documentation Thefollowing was included in the documentation:

a) The questionnaire score

b) The result of the questionnaire
c) The result of frequency percent data
d) Photos and vidio during the research. (see in appendix 6).

C. Technique of The Collecting Data

The tools and methods used for data collection are referred to as data collection techniques. These can include surveys, tests, interviews, observation sheets, or a combination thereof. In this study, data were gathered using questionnaires.

1. Questionnaire

Sugiyono (2018, p. 124) defines a questionnaire as a method of collecting data by distributing written questions for respondents to answer. It is an efficient way to measure predefined variables and obtain responses. A questionnaire containing 25 validated and reliable items was distributed to 30 students from the sample population.

G. Instrument Validaty And Reability

1.1 The Validity

To determine the validity of the test items, the researcher assessed their accuracy. Creswell (2012, p. 159) defines validity as the process of developing reliable evidence to show that the interpretation of test scores, based on the concept or construct being measured, aligns with its intended purpose. In essence, validity refers to the extent to which the conclusions drawn from assessment results are relevant, meaningful, and appropriate for the assessment's objectives.

To evaluate the validity of the vocabulary mastery test, a preliminary test involving 25 items was conducted on 30 students who were not part of the main research sample. The analysis was performed using the SPSS 20.0 software.

The validity test in this research uses product moment correlation, namely by comparing the rcount value and the rtable value. The value of rtable is obtained through the degree of freedom (df) with a significant value of 5%. Calculation of the degree of freedom (df) = N-2 (30-2=28), so the rtable value of 28 is 0.361. The basis for decision-making is as follows:

A. If the rcount value > rtable value, then the item is considered valid.

B. If the rcount value < rtable value, then the item is considered invalid.

No	R_{hitung}	R_{tabel}	Keterangan
1	0,428	0,361	valid
2	0,334	0,361	Tidak valid
3	0,508	0,361	valid
4	0,517	0,361	valid
5	0,186	0,361	Tidak valid
6	0,610	0,361	valid
7	0,613	0,361	valid
8	0,659	0,361	valid
9	0,317	0,361	Tidak valid
10	0,290	0,361	Tidak Valid
11	0,230	0,361	Tidak Valid
12	0,459	0,361	Valid
13	0,429	0,361	Valid
14	0,413	0,361	valid
15	0,612	0,361	Valid

16	0,169	0,361	Tidak Valid
17	0,502	0,361	Valid
18	0,481	0,361	Valid
19	0,392	0,361	Valid
20	0,172	0,361	Tidak Valid
21	0,595	0,361	Valid
22	0,501	0,361	Valid
23	0,253	0,361	Tidak Valid
24	0,286	0,361	Tidak Valid
25	0,606	0,361	Valid
26	0,604	0,361	Valid
27	0,574	0,361	Valid
28	0,263	0,361	Tidak Valid
29	0,619	0,361	Valid
30	0,415	0,361	Valid

Based on the validity results, questionnaire items that correlate significantly with the total score indicate that the items are valid. Judging from the significance value: If the value of rcount > rtable, then the instrument is declared valid. If the calculated r value < r table, then the instrument is declared invalid. From the output above, it can be concluded that 20 questionnaire questions are valid and 10 questionnaire questions are invalid. So the 20-question questionnaire can be used in the reliability testing stage.

1.2 The Reliability.

In the reliability test, the calculated r value is seen in the Cronbach's Alpha value.

A variable is said to be reliable if the alpha value is > 0.60. The conditions used in reliability testing are as follows.

a. If the Cronbach's Alpha value is > 0.60, then the questionnaire items are declared reliable.

b. If the Cronbach's Alpha value is <0.60, then the questionnaire items are declared unreliable.

Reliability Statistics	
Cronbach's Alpha	N of Items
,891	20

Tabel reliability statistics menunjukkan hasil analisis dari uji reliabilitas dengan Cronbach's Alpha sebesar 0,870 yang berarti >0,60 sehingga item dinyatakan reliabel.

H. The Technique Of Data Analysis

The data analysis method employed in this study is engineering descriptive analysis, which entails presenting field findings objectively with the help of distribution tables and frequency, which are then translated into clear statements or queries. In order to create an engaging conclusion, the material that has been successfully gathered is presented in the form of a presentation on each table in addition to a breakdown. The intervals in the formula used to classify this data are:

$$I = \frac{NT-NR}{K}$$

Information :

I = Interval

NT = The highest score

NR = Lowest Value

K = Number of categories

(Sutrisno Hadi, 1981:12)

Frequency distribution is then used to determine how many numbers occur frequently, either by combining all of the scores collected or by intervals (Winarno Surakhmad, 1982:285). Utilising data analysis, the following formula was used to calculate the percentage of questionnaires:

Tabel 3.6

The Category Of Students' Score In Mastering Vocabulary

Classification At SMPN 06, eighth-grade students' vocabulary comprehension difficulty is divided into five categories: "excellent," "very good," "good," "low," and "fail." In the meanwhile, the five norm limits which are shown in the accompanying table are used as a guide for classification.

fail	$X \leq M - 1{,}5SD$
low	$M - 1{,}5SD < X \leq M - 0{,}5SD$
good	$M - 0{,}5SD < X \leq M + 0{,}5SD$
Very good	$M + 0{,}5SD < X \leq M + 1{,}5SD$
excellent	$M + 1{,}5SD < X$

In this study, the researcher used quantitative descriptive analysis with Percent of the statistical frequency and divided by the number of students or samples. It could be seen inside the following system:

$$P = \frac{F}{N} \times 100\%$$

Wherein :

P = Percent

F = frequency of respondent

N = quantity of pattern

100% = constants fee The formulation above is used to calculate the share of students' motivation to research English vocabulary and students' self-assurance in getting to know English vocabulary, family environment, and college surroundings by thematic analysis of the questionnaires.

(Sutrisno Hadi, 1981:421).

The analysis included calculating percentages from the frequency of responses and categorizing the data into different performance levels. Data were processed using SPSS 20.0 and Microsoft Excel for detailed statistical evaluation.