CHAPTER III

RESEARCH METHOD

3.1 Research Design

This study tries to determine the connection between the habit of listening to songs and vocabulary mastery. According to Sugiyono (2016;13), research data in the form of numbers to be tested using statistics as a calculation test instrument, related to the problem researched to give a conclusion, makes this study a quantitative one. This study is part of the correlation research methodology. Correlation research is a study that incorporates data gathering activities to ascertain whether there is a relationship and the strength of that relationship between variables, according to Sukardi in Zakiyah (2016: 56). This research is also ex-post facto since it seeks to identify factors that contribute to changes in behavior, signs, or phenomena that are brought on by an event, a behavior, or other factors that affect the independent variable as a whole (Sukardi, 2004: 174).

3.2 Setting

3.2.1 Place

This research was conducted at Wijaya Kusuma Surabaya University, precisely in the language and science faculties.

3.2.2 Time

This research was conducted between May and June in the 2022-2023 academic year.

3.3 Subject of the Research

3.3.1 Population

Sugiyono (2016: 80) claims that the population is a generalization area that consists of: objects/subjects that have specific features and attributes

decided upon by researchers to be examined, followed by conclusions. So, 49 English education students from Wijaya Kusuma Surabaya University participated in the vocabulary class during the 2022–2023 academic year, making up the population of this study.

No.	Class	Number of Students
1.	A	35
2.	G	14
Total		49

Table 3. 1 Table of sample

3.3.2 Sample

The sample is a subset or representative of the population being examined, claims Arikunto in Handayani (2010: 30). Because the samples were chosen at random without respect to the population's existing strata, the study's sampling method was simple random sampling. Roscoe in Sugiyono (2016: 60) suggests a sample size for research that is between 30 and 500. The sampling technique in this study calculated by the Slovin formula as follows.

$$n = \frac{N}{1 + N(e)^2}$$

n = Number of samples searched

N = Number of population.

E = Tolerable margin of error.

Based on the formula used, the number of students who became the research sample was as follows;

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{49}{1+49(0,05)^2}$$

$$n = \frac{49}{1,1225}$$

$$n = 43,65$$

Researchers in this study determined a significant level of 5% of 49 students in the population, so the total sample was 43,65 students rounded to 44 students.

3.3.3 Variable

Kerlinger in Sugiyono (2016: 38) states that variables are constructs or properties to be studied. There are two variables in this study: the independent variable (X) and the dependent variable (Y).

1) Independent Variable

Sugiyono (2016: 39) states that the independent variable or independent variable is a variable that influences or causes the dependent variable to arise. The independent variable (X) in this study is the habit of listening to songs.

2) Dependent Variable

Sugiyono (2016: 39) states that the dependent variable or dependent variable is the variable that is affected or is the result of the independent variable. The dependent variable (Y) in this study is the grade point average for the Vocabulary course.

3.4 Research Procedures

According to Alsa in Neliwati (2018:116), Quantitative research procedures are as follows:

1) Identifying Research Problems

Quantitative research needs to describe trends or explain the correlation between variables and their development. In this stage, the researcher made direct observations in the vocabulary class in the 2022-2023 academic year to see the existing problems based on the phenomena that occurred in that place.

2) Reviewing the Literature

Carrying out a review of the literature apart from functioning to justify research problems, is also intended to direct research objectives and questions or hypotheses. Researchers conducted a literature study with books, journals, and final project reports with relevant titles.

3) Setting Research Objectives

In quantitative research the research questions are specific and narrow, limited to the specified research variables, to obtain measurable and observable data. The purpose of this research was conducted in order to find the facts of the problems that arise.

4) Collecting Data

In quantitative research, data collection were based on predetermined instruments, the data were in the form of numbers, and the instruments were given to a large number of individuals. In collecting data, the researcher used a questionnaire that had been tested and distributed it to the relevant respondents.

5) Analyzing and Interpreting Data

The data analysis used statistical analysis which includes descriptions of trends, comparisons of different groups, or correlations between variables, as well as interpreting comparisons between research results and those predicted before the study.

6) Reporting and Evaluating Research

Researcher described the results of research systematically and in writing report.

3.5 Data Collecting Tehniques

To obtain research data, it is necessary to collect data using various techniques. According to Poerwanti in Zakiyah (2016: 63), test and non-test approaches are the two types of data collection techniques. The following are a few of the non-test techniques employed in this study's data collection:

1) Questionnaire

According to Sugiyono (2016: 142), a questionnaire is giving a set of written questions respondents for to answer. Questionnaires are considered by researchers as a more efficient technique because questions can be shared simultaneously with many respondents, and can be answered by respondents according to their respective speed and free time. The Google Form is being used to distribute the questionnaire that will be used to gather information about the listening habits of students.

2) Documentation

According to Arikunto in Zakiyah (2016: 65), Finding data on items or variables requires documentation, which might take the form of notes, transcripts, books, newspapers, magazines, inscriptions, agendas, meeting minutes, and so forth. This is a method for determining the student's vocabulary subject score.

3.6 Instrument of the Data

According to Sukardi in Zakiyah (2016: 66), a research instrument is a tool for obtaining the necessary data when the researcher has stepped on the information step in the field. The instruments used in this study were questionnaires about students'

listening habits and documentation of students' grade points for vocabulary subjects. The questionnaire in this study was closed because according to Sugiyono (2016: 143), closed questions made it easier for respondents to answer quickly. After all, the answer choices were already available. The scores for each item on the *Likert* scale are as follows:

Answer	Positive Statement Score	Negative Stratement Score
Strongly Agree	4	1
Agree	3	2
Disagree	2	3
Strongly Disagree	1	4

Table 3. 2 Table of Likert scale (Sugiyono, 2016)

The instrument grids used in this study as follows;

Variable	Sub Variable	No. Question Item		Amount
		Positive	Negative	
Students' habit of listening to English songs	Listening time	1, 3, 4, 5, 6, 7, 8, 9	2	9
	Interested in songs	10, 11, 12, 13, 14	15, 16, 17, 18	9
	Motivation to listening	19, 20, 21, 22, 23	24, 25	7
Total				**25**

Table 3. 3 Table of quessioner instrument

3.7 Data Analysis

3.7.1 Questionnaire Instrument Trial Analysis

There are two main things related to instrument testing, namely validity (validity) and constancy (reliability). In this study, instrument trials were conducted on 24 English education students who did not take the Vocabulary course for the 2022-2023 academic year, guided by Arikunto's opinion in Handayani (2010: 36) who states that "if possible, the test subjects should indeed be taken from populations that will not be subject to research".

1. Validity Test

   Construct validity was the type of validity employed in this study because the research instrument is a non-test. By seeking the opinions of specialists with the intention of determining whether the instruments developed are in accordance with the grid and objectives to be accomplished or not, it is possible to assess the validity of the construction. After testing the construct validity, the questionnaire can be tried out. This test uses the Product Moment Correlation formula, namely the formula in Sugiyono (2016: 183):

$$r_{xy} = \frac{n\sum X_i Y_i - (\sum X_i)(\sum Y_i)}{\sqrt{\{n\sum X_i^2 - (\sum X_i)^2\}\{n\sum Y_i^2 - (\sum Y_i)^2\}}}$$

   Notes:

   r_{xy} = The magnitude of the correlation coefficient

   n = Number of Test Subjects

   X = Item Score

   Y = Total Score

   Furthermore, the results of *r count* were compared with *r table* with a significance level of 5%. according to Priyatno in Zakiyah (2016:

73) The instrument items are said to be valid if the *r count* > *r table*, while the instrument is considered to be invalid if the *r count* < *r table*.

In calculating the validity of the questionnaire this study used the help of SPSS version 25 for Windows with these following steps; Click Analysis > Correlate > Bivariate.

No item	R Count	R Table	Note	No item	R Count	R Table	Note
1	0,680	0,361	Valid	14	0,826	0,361	Valid
2	0,582	0,361	Valid	15	0,225	0,361	Invalid
3	0,532	0,361	Valid	16	-0,167	0,361	Invalid
4	0,536	0,361	Valid	17	0,066	0,361	Invalid
5	0,678	0,361	Valid	18	0,530	0,361	Valid
6	0,583	0,361	Valid	19	0,763	0,361	Valid
7	0,011	0,361	Invalid	20	0,602	0,361	Valid
8	0,809	0,361	Valid	21	0,561	0,361	Valid
9	0,689	0,361	Valid	22	0,717	0,361	Valid
10	0,532	0,361	Valid	23	0,552	0,361	Valid
11	0,583	0,361	Valid	24	0,438	0,361	Valid
12	0,287	0,361	Invalid	25	0,650	0,361	Valid
13	0,755	0,361	Valid				

Table 3. 4 Table of Validity test results

From the calculation of validity test data using SPSS 25, it was known that the number of valid questionnaire items were 20 items (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 14, 18, 19, 20, 21, 22, 23, 24, 25). While the invalid questionnaire items were 5 items (7, 12, 15, 16, 17). Referring to Sugiyono (2016: 126) that invalid instrument items must be corrected or discarded. So the researcher used a valid questionnaire item of 20 items for data sampling.

2. Reliability Test

According to Sugiyono (2016: 121), reliable instrument can produce the same results when used repeatedly to measure the same

item. In testing the reliability of the instrument in this study the Alpha formula was used, this formula was used because the questionnaire used in this study did not have answers that were wrong or zero. The Alpha formula according to Arikunto in Zakiyah (2016: 68) is as follows:

$$r_{11} = \left(\frac{k}{(k-1)}\right)\left(1 - \frac{\Sigma\sigma_t^2}{\sigma_t^2}\right)$$

Notes:

r_{11} = reliability of the instrument

k = the number of questions

$\Sigma\sigma\frac{2}{t}$ = number of grain variances

$\sigma\frac{2}{t}$ = Total variance

The reliability test in this study also used SPSS version 25 for windows with the Cronbach Alpha technique reliability test with these following steps; Click Analysis > Scale > Reliability Analysis. In the Reability Analysis dialog box, enter variable data in the Variables box. Then select the Statistics menu and put a check mark (√) on Scale if item deleted, Select continue. According to Priyanto in Zakiyah (2016: 68), an instrument is said to be reliable if the value exceeds 0.6.

Reliability Statistics

Cronbach's Alpha	N of Items
.859	25

Table 3. 5 Table of reliability test

The Cronbach's Alpha column score, which was calculated from the reliability test results above, is 0.859. It might conclude that the instruments

used in this research are reliable if 0.859 > 0.6. For more details can be seen in the attachment.

3.7.2 Preliminary Analysis

The first step in determining the next analysis connected to how much the habit of listening to songs in the vocabulary class of English education students would be examined is preliminary analysis. In this preliminary analysis, the researcher used descriptive statistical analysis used in this study arranged in a frequency distribution table used to present the data. The steps for compiling a frequency distribution table according to Sugiyono in Zakiyah (2016: 70) are as follows:

1) Determining the Number of Classes

   K = 1 + 3,3 log n

2) Set a score range

   R = the biggest score – the smallest score

3) Specify the interval (length) of a class

   P = range : number of classes

4) Build an interval class

   To find out the percentage score of listening to songs on each item can be calculated using the formula based on Riduwan's explanation in Zakiyah (2016: 70) as follows;

$$Pk = \frac{whole\ skor}{maximum\ total\ score} \text{ x } 100\%$$

   The researcher used the classification of scoring criteria to determine the percentage score for the practice of listening to songs according to Poerwanti in Zakiyah (2016: 71) as follows:

Interval Score	Categori
Skor > 86 %	Very high
76% – 85%	High
66 % – 75%	Medium
56 % – 65%	Low
Skor < 55%	Very low

Table 3. 6 Table of percentage classification habit of listening

(Poerwanti in Zakiyah, 2016)

To determine the classification of variable categories in this study, researchers used guidelines from Azwar in Zakiyah (2016: 71), as follows:

Score	Categori
X < (M – 1,0SD)	Low
(M – 1,0SD) ≤ X < (M + 1,0SD)	Medium
(M + 1,0SD) ≤ X	High

Table 3. 7 Table of classification tendency of variable

(Azwar in Zakiyah, 2016)

Then to determine the vocabulary score criteria, the researcher used the guidelines from Wijaya Kusuma Surabaya University academic manual as follows:

Score	Value	Category
8	A	Excellent
7	AB	Very Good

6	B	Good
5	BC	Fairly Good
4	C	Fairly
2	D	Less
0	E	Very Less

Table 3. 8 Table of classification vocabulary score criteria

(Wijaya Kusuma Surabaya University academic manual)

3.7.3 Data Analysis

1. Normality Test

Before the hypothesis is tested for truth, it must first do a data normality test. In this study, the normality test used the Kolmogorov-Smirnov One Sample using the help of the SPSS version 25 for Windows with these following steps; Click Analyze – Non parametric Tests – Legacy Dialogs – 1 Sample KS. After that, the One-Sample Kolmogorov-Smirnov Test dialog box would open. Enter habits of listening to English songs and grade point of Vocabulary Subject into the Test Variable List box, then click OK. according to Priyatno in Zakiyah (2016:73) If significance < 0.05 then the data is not normally distributed. But if the significance value is > 0.05, then the data is normally distributed.

2. Homogeneity Test

According to Usmadi in Zahara (2022:536), Homogeneity testing is a test to determine whether or not some population variants are the same.

In this study, Utilizing SPSS version 25 for Windows and the Levine test, the homogeneity test was conducted; Click Analyze – Compare Means – One-Way ANOVA. Enter the variable tested in the Dependent List column, Enter the variable that distinguishes groups into the Factor column, then Click Options. then check Homogeneity of variance test, Click OK. According to Usmadi (2020:51), test criteria that indicate a group of data are from a population that has the same variance (homogeneous) if the significance value (p) ≥ 0.05.

3. Linearity Test

According to Priyatno in Zakiyah (2016: 74), the linearity test is used to determine the linearity of the data, namely whether two variables have a linear correlation or not. This test is used as a prerequisite in Pearson correlation analysis (Product Moment). The steps for calculating regression linearity according to Riduwan in Zakiyah (2016: 74) are as follows:

1) Finding the statistical numbers:

$$\sum X \; ; \sum Y \; ; \sum X^2 ; \sum Y^2 ; \sum XY \; ; \; s \; ; \; \bar{x} \; ; \; a \; ; \; b.$$

2) Finding the sum of the squares of the regression with the formula:

$$JK_{Reg(a)} = \frac{(\sum Y)^2}{n}$$

3) Finding the sum of the squares of the regression with the formula:

$$JK_{Reg(b|a)} = b.\left\{\sum XY - \frac{(\sum X).(\sum Y)}{n}\right\}$$

4) Finding the sum of the squares of the residues with the formula:

$$JK_{Res} = \sum Y^2 \; - \; JK_{Reg[b|a]} - JK_{Reg[a]}$$

5) Finding the average sum of the squares of the regression with the formula: $RJK_{Reg[a]} = JK_{Reg[a]}$

6) Finding the average sum of the squares of the regression with the formula: $RJK_{Reg[b|a]} = JK_{Reg[b|a]}$

7) Finding the average of the sum of the squares of the residues with the formula: $RJK_{Res} = \frac{JK_{Res}}{n-2}$

8) Finding the sum of squared errors with a formula:

$$JK_E = \sum_k \left\{ \sum Y^2 - \frac{(\sum Y)^2}{n} \right\}$$

9) Finds the sum of the squares of tuna that match the formula:

$$JK_{TC} = JK_{Res} - JK_E$$

10) Finding the average number of squares of tuna that match the formula: $RJK_{TC} = \frac{JK_{TC}}{k-2}$

11) Finding the average sum of squared errors with a formula:

$$RJK_E = \frac{JK_E}{n-k}$$

12) Finding the value of Fcount with the formula:

$$F_{hitung} = \frac{RJK_{TC}}{RJK_E}$$

In this study, to calculate the linearity regression test, the researcher used SPSS version 25 for Windows with the following steps; Click Analyze –Compare Means – Means. Enter the Vocabulary course grade variable (Y) into the Dependent List box, while the song listening habit variable (X) is entered into the Independent List box. Select the Options dialog box and activate the Test for Linearity section. Select Continue then OK. Two variables were said to have a linear correlation if their significance value was less than 0.05. From the results of the linearity test, results were obtained in the ANOVA table in the Sig

column. According to Priyatno in Zakiyah (2016: 77), the linearity line was 0.00, where 0.00 <0.05, it can be said that the variables X and Y had a linear correlation.

3.7.4 Final Data Analysis (Hypothesis Test)

a) Correlation Analysis

The data were presented as intervals and ratios, and correlation analysis was performed to determine the correlation between the independent variable (X) and the dependent variable (Y). This study used Product Moment Correlation. The formula in Sugiyono is as follows:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Notes:

r_{xy} = correlation index number

N = Number of Cases

∑ xy = The number of multiplication results between the X score and the Y score

∑ x = total score

∑ y = sum of all Y scores

In calculating the correlation analysis in this study used the help of SPSS version 25 for Windows with the steps according to Priyatno In Zakiyah (2016:76) click Analysis > Correlate > Bivariate > Enter the X and Y variables > OK.

According to Sugiyono in Zakiyah (2016: 77), the guidelines for providing an interpretation of the correlation coefficient are as follows:

Coefficient Intervals	Correlation Level
0,00 – 0,199	Very Low
0,20 – 0,399	Low
0,40 – 0,599	Medium
0,60 – 0,799	Strong
0,80 – 1,000	Very Strong

Table 3. 9 Table of classification correlation coefficient

(Sugiyono in Zakiyah, 2016)

b) Coefficient of Determination

The coefficient of determination was used to express the size of the contribution of variable X to variable Y and to find out how much the variable X had contributed and determines the variable Y. To calculate the coefficient of determination, it can use the formula according to Riduwan in Zakiyah (2016: 77) as follows:

$$KD = r^2 \times 100\%$$

Keterangan:

KD = the value of the coefficient of determination

r = correlation coefficient value