CHAPTER III
RESEARCH METHODS

3.1 Research Method

This study was included in the quantitative study. Researcher was basically design of experiments. According to Sugiyono, (2012, p. 77) this is a quasi-design of experiments design because it is difficulty of determine the control group in the study. A quasi-design of experiment design is a research design that attempts to approximate the rigor of a true experimental design, but does not have full control over the independent variables. In other words, the design involves manipulating an independent variable, but the researcher cannot randomly assign participants to experimental groups due to ethical or practical constraints. The type of study used in this study is a pre-experimental study in the form of a static group comparative design. Therefore, this method consisted of two classes that are specifically used. The first class as the experimental class and the second class as the control class. Then, researcher run post-test in both groups to compare the result scores. This study has not been pre-tested, so the previous between the two groups are unknown. Pre-experimental design for comparative study of static groups Emzir, (2012, p. 97).

3.2 Population, Sample, and Sampling Technique

3.2.1 Population of the Research

Population means the total number of people or residents in an area. From this explanation, the population can be interpreted as the name of a person or inhabitant living in a specific area.

According to Arikunto, (2010, p. 173) the population is a shared area. The population refers to the number of individuals in a specific area. The population of this study was the students of the Tenth Grade SMA Kemala Bhayangkari academic year 2022.

TABLE 3
POPULATION OF THE TENTH GRADE AT SMA KEMALA BHAYANGKARI ACADEMIC YEAR 2022

No	Class	The Number of Students
1	X IPA 1	27
2	X IPA 2	25
3	X IPA 3	25
4	X IPS	29
Total		106

3.2.2 Sample

Samples are several groups used by the population as survey material. According to Arikunto, (2010, p. 174) the sample shows the population under study, either partially or representatively. It is used to draw conclusions about the entire population based on the characteristics observed in the sample. The sample must be chosen carefully to ensure it is representative of the population and to

reduce the risk of bias or inaccuracies in the results. The size of the sample is also important, as larger samples generally provide more accurate results. Statistical tools are used to analyze the data collected from the sample and draw conclusions about the population as a whole. Based on the above population, researchers would include X IPA 2 and X IPA 3 students in their studies.

TABLE 4
THE TENTH GRADE STUDENTS CONSISTING OF CLASS X IPA 2 AS CONTROL CLASS AND X IPA 3 AS EXPERIMENT CLASS AT SMA KEMALA BHAYANGKARI ACADEMIC YEAR 2022/2023

No	Class	The Number of Students
1	X IPA 2	25
2	X IPA 3	25
Total		50

3.2.3 Sampling Technique

Sampling technique refers to the method used to select a subset of individuals or units from a larger population for research purposes. The goal of sampling is to select a group that is representative of the population being studied, so that findings can be generalized to the population as a whole. To collect samples to be studied, researcher must use the sampling method. This technique also has several parts in sampling, one of which is target sampling, which is used by researchers in sampling.

According to Arikunto, (2010, p. 183) sampling or targeted sampling is done through target selection, not based on random strata or regions, and not based on the existence of a specific target. This technique was done because of considerations such as time, cost, and performance constraints. Therefore, it was

not possible to collect a large number of samples. This opinion is also supported by Sugiyono, (2012, p. 84) which states that target sampling is a sampling technique with certain considerations.

The researcher chose X IPA 2 as the experimental class and X IPA 3 as the control class. These classes were chosen because both classes have the same characteristics and were taught by the same English teacher.

3.3 Research Instrument

A research instrument is a tool that is used to collect data from participants in a study. The instrument can be a questionnaire, survey, interview guide, or any other type of tool that researcher use to gather data from subject the purpose of the researchers collect valid and reliable information that can be used to answer research questions or test hypotheses. The instrument must be designed in a way that measures what it is intended to measure and should be tested to ensure what it is intended to measure.

In this study, researcher used tests as a tool to measure students' speaking performance. According to Arikunto, (2010, p. 193) a test is a series of questions or exercises and other tools used to measure skills, intellegence, knowledge, abilities or talents possessed by individuals or groups. The purpose of using this test is to measure students' speaking performance before and after using the SLANT strategy, sitting right (Sit up straight), foresight (Lean forward), activate the mind (Activate your thinking), make notes (Name key Information), and convey to the speaker (Track the talker) as taught.

3.3.1 Conceptual Definition of Speaking Performance

Based on the explanation above, it can be concluded that speaking is active skill or productive skill. Speaking is important to communicate with other people and it is used as media to show ideas, share information, thoughts, and feeling to other. Speaking skill itself can be stated as the skill to use the language accurately to express meaning and to get knowledge in our daily activity.

3.3.2 Operational Definition of Speaking Performance

Speaking can be operationally defined as the act of conveying or sharing one's thoughts, ideas, information or opinions by producing verbal sounds or words in an organized or coherent manner using the vocal cords and mouth. This includes activities such as talking, conversing, communicating, presenting, narrating, reciting, and delivering speeches, among others. Speaking can occur in various forms such as face-to-face interactions, telephone conversations, public speaking, and mediated communication such as video conferencing, broadcasting, and podcasting.

Speaking was a coversation or an oral expression of thoughts, opinions, and emotions in the form of a conversation. Therefore, when a students expresses their ideas, feelings, and thought orally is also called oral communication.The students' speaking can be seen from the score students obtain from an oral test of a certain topic which is measured from the aspects of vocabulary, pronunciation, fluency, grammar and interactional strategies each of which ranges from 4-1 and to measure the scores of students' speaking in this research, it is speaking. The

topic that students delivered is about at least in 3 topics there is family, holiday and competition.

3.3.3 Instrument Spesification of Speaking Performance

Based on the conceptual definition and operational definition and operational definition, the research instrument specifications it is shown in the following table:

TABLE 5
INSTRUMENT SPECIFICATION OF SPEAKING

Speaking Task	Topic	Aspects	Indicators	Score
Discuss one simple topic	• Family • Holiday • Competition	Vocabulary	Able to use effective vocabulary for the task	1-4
		Pronunciation	Using correct pronunciation for each word	1-4
		Fluency	Not using many pauses and not using many filters	1-4
		Grammar	Able to use the grammatical Rules and understanding the grammatical rules in language	1-4
		Intractional Strategies	Able to interacts effectively and readily participate and follows the discussion	1-4
Total				20

Source:Modified from Weir (2005:195)

3.4 Data Collecting Technique

Data collection techniques was a type of technique that researcher used to collect data. Researcher used test techniques to collect data for this study. The test was used by researcher and it was oral test, researcher used to the materials for discuss one simple topic. Researcher then performed post-test to collect data in both classes. Post-tests were used to measure the student' speaking using SLANT strategy.

3.5 Data Analysis Technique

Data analysis techniques refer to the various methods and processes used to extract insights and meaning from data sets. Data analysis was performed to know the final result between the experimental class and the control class. Researcher used the t-test to analyze the data from this study. The study in this study used a specific independent class of t-tests because researchers had found and compared the sores of the experimental and control classes. According to Frankel, at al (2012, p. 234) "t-test used to compare the mean score of two different or independent class."

In addition, Setiyadi, (2006, p. 170) notices that one of the requirements before conducting independent class t-test is the sample should be normally distributed and come from homogeny test to know the condition of the sample. After the researcher know about the sample and then the researcher conduct independent class t-test.

After conducting the data, the researchers analyzed the data in the following procedures:

3.5.1 Normality Test

Normality test is a statistical procedure used to determine whether a given dataset follows a normal distribution or not. The normal distribution, also known as the Gaussian distribution, is a probability distribution that represents many natural phenomena, such as the distribution of heights, weights, and intelligence scores in a population. The purpose of a normality test is to assess whether a dataset can be analyzed using parametric statistical methods that assume normality, such as t-tests and anova. If the dataset is not normal, non-parametric methods may be more appropriate.

A normality test used to determine if the experimental and control classesmeet the requirement for a normal distribution. To calculate the normal distribution for the test class, Lilliefor ‘s needs to perform the following steps:

Ho : the group comes from a normal population distribution

Ha : the group comes from abnormal population distribution

a) Determine the raw number by using the formula:

$$Z_i = \frac{x_i - \bar{x}}{s}$$

Notes :

Z_i : Number of raw$_i$

x_i : The values obtained

$\ddot{x}$: Average

S : Standard deviation

b). Opportunity the proportion by using the formula:

$(Z_1) = P(Z \leq Z_i)$

c). Determine the proportion using the formula:

$$SZ_i = \frac{\text{numbers} Z^1, Z^2, \ldots\ldots Z_n \text{that} \leq Z_i}{n}$$

d). Calculating Absolute price using the formula: $(Z_i) - S(Z_i)$

e). Determining the largest absolute value which is called $L_{observed}$ and then compare $L_{observed}$ with L_{table}. Normal criteria, if $L_{observed} < L_{table}$ so the group has normal distribution.

3.5.2 Homogeneity Test

A homogeneity test is a statistical method used to determine if two or more populations or groups are homogeneous or similar in terms of their distribution of a specific variable. In other words, the test is used to determine if the samples being compared belong to the same population or not. There are several homogeneity tests, such as the chi-square test and the F-test, each having its own

advantages and limitations. Generally, the test compares the observed and expected frequencies of the variable being studied to decide whether the samples are homogeneous or not.

Homogeneity test is a statistical method used to test whether different groups or samples come from the same population or have similar characteristics. The test determines if there is enough evidence to reject the null hypothesis that there are no significant differences between the groups. This type of test is commonly used in research fields such as psychology, sociology, and marketing to compare the differences or similarities in characteristics of different groups. Before proceding to the prerequisite steps, the researcher need to know the homogeneity of the test to ensure that the population sample is homogeneous. The researcher needs to calculate homogeneity. According to Sugiyono, (2010, p. 199) the formula to calculate homogeneity is:

$$F_{observed} = \frac{the\ highest\ variance}{the\ lowest\ variance}$$

The steps are:

a). Looking the value of highest and lowest variance

b). Compare the value of $F_{observed}$ with F_{table} use of the formula:

df numerator = n-1 (for the biggest variance)

df denominator = n-1 (for the lowest variance)

Significance level (α) = 0.05 then look at F_{table} with criteria:

If $F_{observed} > F_{table}$, it means the variance is not homogeny.

If $F_{observed} \leq F_{table}$, it means the variance is homogeny.

The hypothesis that will be proved is:

H_0 : there is no difference variant of experiment class and control class homogeneous)

Ha : there is difference variant of experiment class with control class (not homogeneous)

The statistical hypothesis is:

H_0 : σ^2 experiment =σ^2control

Ha : σ^2 experiment $\neq$ σ^2control

3.5.3 Hypothesis Test

Hypothesis test is a statistical method that is used to test a hypothesis or a claim about a population parameter based on sample data. In hypothesis testing, a null hypothesis is formulated and tested again an alternative hypothesis, using a significance level and a test statistic. The null hypothesis represents the belief that there in no significant difference between the observed data and what is expected by chance, while the alternative hypothesis represents the belief that there is a significant difference. The result of the test provides evidence for or against the null hypothesis, allowing researchers to make conclusions about the population parameter being tested.

The analysis data for this research data used the T-test. This helps determine if the difference between the two compared values is significant. The data is

analyzed by using independent group T-test. This test is used to compare the means situation too Setiyadi, (2006, p. 196).

According to Sugiyono, (2012, p. 197) the formula of independent group to t-test is:

$$t=\frac{x_1-x_2}{\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}}$$

Notes :

t = t-test

$\square_1$ = average of experiment class

$\square_2$ = average of control class

$\square_1$ = total number of students in experiment class

$\square_2$ = total number of students in control class

$\square_1^2$ = variant of the experiment class

$\square_2^2$ = variant of control class

Hypothesis will be proved is :

H_0 : There is no significant influence of using SLANT Strategy Toward Students Speaking Performance in Tenth Grade at SMA Kemala Bhayangkari Academic Year 2022

Ha : There is significant influence of using SLANT Stratrgy Toward Students Speaking Performance in Tenth Grade at SMA Kemala Bhayangkari Academic Year 2022

Ho : $\mu_2 = \mu_1$

Ha : $\mu_2 \neq \mu_1$

The statistical hypothesis are:

If $t_{observed} \leq t_{table}$, so H_0 is accepted. Because there is significant.

If $t_{observed} > t_{table}$, so H_0 is rejected. Because there is no significant.

The testing of experiment and control class is at significance (α) = 0.05 and 0.01.