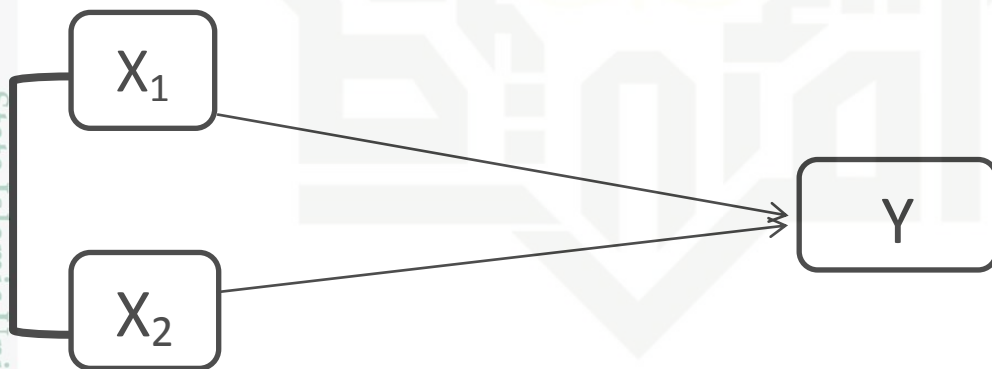


CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

The kind of this research was causal-comparative, marguerite stated that causal-comparative research involves comparing groups to see if some independent variables have caused a change in a dependent variable (Marguerite, 2006). the researcher want to compare the differences of students learning achievement by medium of teaching that used are PowerPoint and whiteboard. The researcher use three variables that were student's learning achievement as dependent variable (Y), students who taught by using PowerPoint as independent variable 1 (X_1) and students who taught by using whiteboard as independent variable 2 (X_2).



X_1 : students who are taught by using PowerPoint

X_2 : students who are taught by using whiteboard

Y : students' learning achievement

Gay and Petter stated that in causal-comparative research, the researcher attempts to determine the cause, or action for preexisting difference in groups or individuals. In other words, the observed groups are different from some variables that researcher attempts to identify the factors that has led to this difference (L R Gay and Petter Airasian, 2000).

B. The Location and Time of the Research

The location of this study was at Plus Senior High School of Riau province. in Pekanbaru city. The school of plus Riau Province is located at Kubang Raya street in Pekanbaru city and the time of this research conducted during three months.

C. Object and the Subject of the Research

The subjects of this research were the tenth grade students of Plus Senior High School of Riau province of the 2017/2018 academic year. While the object of this research was the comparison of students' learning achievement taught by PowerPoint and Whiteboard at Plus Senior High School of Riau province.

D. The Population and Sample of the Research

1. Population

The target population of this research was the tenth grade students of Plus Senior High School of Riau province. It has 4 classes they are: X1, X2, X3 and X4. The number of population can be seen in the following table :

Table III.1
The Number of Population

Class	Sum
X1	25
X2	25
X3	25
X4	25
Total	100

2. Sample

Sample is a subset of the units of a population (James T. McClave, 2017) based on the design of this research, the researcher used the purposive sampling technique to get the data based on the indicators of the variables. Purposive sampling is technique of sampling the source data with certain considerations (Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, 2006). Researcher used purposive sampling because sample and source data sourced from classes were taught by using PowerPoint and Whiteboard . It can be seen in the table below:

Table III.2
Sample

No.	Class	Media	Students
1.	X MS 1	Powerpoint	25
2.	X MS 2	Whiteboard	25
Total population			50
Total sample			50

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E. Technique of Collecting Data

In this research, the researcher used documentation technique to collect the data, the term of document refers to a wide range of written, physical, and visual materials, including what other authors may term artifacts, documents may be personal such as, autobiographies, diaries, and letters official such as, files, reports, memoranda, or documents of popular culture such as books, films, and videos. Document analysis could be written or non-written records (Donald Ary, 2010).

Then, the documents related to the subject of the study to get the completeness of the data. Documentation technique purposed to find out the document that related to the study.

In this research, the researcher used written data of students' achievement scores that took by the teacher to get the data of students' English achievement from students' report card files that included cognitive, affective, and psychomotor scores.

F. The Technique of Data Analysis

In order to find out whether there is a significant comparison students learning achievement between student who taught by using PowerPoint and whiteboard, the data analyzed by using statistic formula. The researcher used variable students who taught by using PowerPoint and whiteboard as variable (X), a students learning achievement as variable (Y).

In analyzing the data, the researcher used statistical method, through SPSS 22 version. Independent sample T-test is used when the researcher want

to compare the mean scores of two different groups of people or conditions. An independent sample T-test will tell whether there is a statistically significant difference in the mean scores for the two groups. In statistical terms, the researcher testing the probability that the two sets of scores came from the same population (Pallant, 2010) .

T-test technique chose to analyze difference in two samples that are interconnected or two groups independently of each other.

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