CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This research is a correlational research. Anderson (2005:118) stated that the research is one way of describing in quantitative terms of degree to which the variables are related. In this research, the researcher used an explanatory research design. According to Creswell (2008: 340) stated that an explanatory research design is a correlation design in which the researcher is interested in the extend to which two variables or more co-vary, that is where changes in one variable are reflected in changes in the others.

There are two variables in this research; they are the independent variable and dependent variable. The independent variable is a stimulus variable or input, it is that factor which is measured, manipulated, or selected by the experimenter to determine its relationship to an observed phenomena. Meanwhile, the dependent variable is response variable or output, it is that factor which is observed and measured to determine the effect of the independent variables. In this research, Classroom climate is the independent variable and symbolized by X, and the students' achievement in learning English is the dependent variable and symbolized by Y.

The illustration of this research as below:

Classroom Climate (X)	→ ←	Students' English Achievement (Y)

Figure 3.1 Research Design

3.2 Location and Time of the Reseach

This research was conducted at SMAN 5 Pekanbaru, located on Bawal

Street Pekanbaru. This research was conducted on March, 9th 2018.

3.3 Population and Sample of the Research

Population of this research was all the eleventh grade students at

SMAN 5 Pekanbaru. In addition, in the eleventh grade students SMAN 5

Pekanbaru consisted of eleven classes which seven classes were science, and

four classes were social major. The total of population were 433 students.

Table 3.1 Population of the Research

No.	Class	Male	Female	Total
1.	XI SC 1	15	25	40
2.	XI SC 2	11	29	40
3.	XI SC 3	19	21	40
4.	XI SC 4	21	19	40
5.	XI SC 5	19	20	39
6.	XI SC 6	19	21	40
7.	XI SC 7	17	22	39
8.	XI SOC 1	19	21	40
9.	XI SOC 2	22	18	40
10.	XI SOC 3	17	18	35
11.	XI SOC 4	20	20	40
Total				433

Based on explanation stated, it could be seen that the population was

large enough to be a sample of the research. Accroding to Gay (2012:205) the

sample for correlation study is selected by using an acceptable sampling method, and a minimally acceptable sample size is generally 30 participants. In this research, the researcher used Simple Cluster Sampling to choose one of classes as the sample. In accordance with Cramer (2004:131), Simple Cluster Sampling occurs when each case has the same probability of being sampled. So, the researcher used 40 students of XI SC 6 class as the sample.

3.4 Instrument of the Research
3.4.1   Variable X

In this variable X, the researcher gave the questionnaiers about classroom climate. The researcher distributed the questionnaires to one class that chosen randomly by the researcher. In accordance with Lodico (2006:159) questionnaire is the main tool or instrument used to collect data in a descriptive-survey research study. In addition, Colton (2007:5) said a questionnaire is typically used to obtain factual information, support observation, or assess attitudes and opinions. It means that, the participants or the sample should answer the questionnaire given by the researcher.

According to Brown in Dornyei (2013:6), Questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers. It was used to find out the correlation between Classroom Climate and Students' Achievement in learning English.

In addition, the researcher also chose Likert Scale to give options in the questionnaires. According to Himmile et al (2009:157) said that Likert Scale is a

simple scale often used in surveys to determine people's level of agreement or disagreement with a particular statement. The questionnaire consisted of 27 items which was constructed by Fraser (1985). It also dealt with the respondent's opinions in responding to the following options based on the Likert'-scale. They are : Strongly Agree, Agree, Undecided , Disagree and Strongly Disagree.

Table 3.2 Indicator of Classroom Climate

VARIABLE	INDICATORS	ITEMS
CLASSROOM CLIMATE	1. Organizing a Productive Classroom Climate	2, 12, 15, 18,
	2. Establishing Classroom rules and procedures	3, 8, 16, 25
	3. Managing transition	7, 27
	4. Managing small group instruction and independent seat work	1, 14, 17, 26
	5. Communicating competently with students	6, 10, 19, 23, 24
	6. Teaching Prosocial behavior	5, 11, 13, 21
	7. Building positive relationship in the classroom	4, 9, 20, 22

Besides that, the data of questionnaires were calculated through percentage by using qualitative sentence in order to know the interpretation of classroom climate. According to Riduwan (2010:15) classificated the criteria of interpretation score as follow below:

Table 3.3 Criteria of Interpretation Score

Score	Criteria
0% - 20%	Poor
21% - 40%	Fair

41% - 60%	Average
61% - 80%	Good
81% - 100%	Excellent

3.4.2 Variable Y

In this Variable Y the researcher used E-raport marks or the score to access the students English Achievement. The score consists of all skills in English that related to their material at the school. E-raport score was taken from the total cognitive score, affective score, and psychometric score of the english subject. The score not only taken from the semester test but also from the task and periodic examination. According to Arikunto (2005:245) classified the category of Students' Achievement as mention below:

Table 3. 4 Category of Students' Achievement

Scores	Category
80 – 100	Excellent
66 – 79	Good
56 – 65	Average
40 – 55	Fair
30 – 39	Poor

Adopted from Arikunto (2005:245)

3.4.3 Validity of the Instrument

Creswell (2008:169) stated that validity is the individual's scores from an instrument make sense, meaningful, enable you, as the researcher, to draw good

conclusions from the sample you are studying to the population. It means that validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment. An instrument is valid if it is able to measure what must be measured.

In this research, the researcher used construct validity. Siregar (2013:77) described that construct validity means the validity that relates to the ability of instrument to measure the concept of being measured. Non-test instrument which is used to measure the attitude include in construct validity. To analyze the validity of the data, the researcher used SPSS 22.0 program for Windows. The researcher used the item analysis in which the item scores were correlated with the total scores. According to Jakaria in Mengolah Data Penelitian Kuantitatif Dengan SPSS (2015:107) stated that the item was valid if the corrected item-total correlation was $\geq$ 0.30.

Table 3.5 Analysis of Classroom Climate Questionnaire Validity

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	123,0000	79,167	,630	,881
Item 2	122,6400	81,573	,438	,885
Item 3	122,8800	81,360	,350	,887
Item 4	122,8000	86,083	-,007	,896
Item 5	123,0400	78,790	,695	,880
Item 6	122,8800	78,777	,680	,880
Item 7	123,0400	81,290	,454	,885
Item 8	122,6400	81,573	,438	,885
Item 9	123,0800	81,243	,484	,884
Item 10	122,6800	81,810	,415	,886
Item 11	123,0400	81,957	,390	,886

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Item 12	122,7600	81,773	,374	,887
Item 13	123,1200	81,193	,453	,885
Item 14	122,8800	80,027	,560	,883
Item 15	122,9200	81,077	,476	,885
Item 16	122,7600	89,857	-,256	,903
Item 17	123,0800	80,993	,509	,884
Item 18	122,6000	81,250	,472	,885
Item 19	122,8800	80,943	,382	,887
Item 20	122,9600	81,040	,499	,884
Item 21	122,9600	80,707	,468	,885
Item 22	123,0000	79,500	,599	,882
Item 23	122,6400	80,157	,511	,884
Item 24	122,9200	81,243	,367	,887
Item 25	123,1200	81,527	,588	,883
Item 26	123,0400	78,040	,686	,880
Item 27	122,6400	81,573	,438	,885
Item 28	123,1200	79,360	,560	,883
Item 29	123,2000	83,167	,271	,889
Item 30	123,3200	78,727	,549	,883

Based on the pilot test result of the instrument validity to the 30 items, it showed that 3 items were not valid because the value of corrected item-total correlation were ≤ 0.30. They were: item 4, item 16 and item 29. Then, 27 items were valid because the value of corrected item-total correlation were ≥ 0.30. It means that there were 27 items used in this research.

3.4.4 Reliability of the Instrument

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Brown (2003:19) said that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining of similar results when measurement was repeated on different occasion or with different instruments or by different person. The characteristic of reliability was sometimes termed consistency. According to Cohen (2007:506) classified the level of internal consistency of Cronbach Alpha as the following table below:

Table 3.6 A Commonly Accepted Rule of Thumb for Describing Internal Consistency by Using Cronbach Alpha

Cronbach Alpha	Internal Consistency
>0.90	Very highly reliable
0.80 - 0.90	Highly reliable
0.70 – 0.79	Reliable
0.60 – 0.69	Minimally reliable
<0.60	Unacceptably low reliability

To obtain the reliability of the questionnaire given, the researcher used SPSS 22.0 program to find out whether or not the questionnaire is reliable.

Tabel 3.7 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,889	,897	30

From the table above, it can be seen that the value of cronbach's alpha is 0.889. Then, the researcher compared r_o to r_t. The $r_o = 0.889$ was higher than r_t at significance level of 5%, is 0.388 and at 1% level of significance was 0.496 where r_t (dk= N-1 = 24). It means that the items were reliable, where the value of internal consistency was $0.800 > 889 < 0.900$, so the reliability of questionnaire was highly reliable.

3.5 Data Collection Technique

In completing the data, the next step of this research was collecting the data. The function of data collecting is to determine the result of the research. In collecting the data, the reseacher gave the questionnaire to the students and used students' raport score as the documentation.

The procedure for getting the data from the students are as follows:

1. The researcher collected the result of E-raport score as English achievement of the second year students at SMAN 5 Pekanbaru.
2. After got the data, the researcher gathered the students of second semester in certain classroom.
3. After that, the researcher came to the class and asked a permission to the teacher to give questionaire.
4. Then, the researcher gave the questionnaire to the students about classroom climate and gave them time approximately 30 minutes to finish the questionnaire.
5. The researcher asked the students to submit the questionnaire.

3.6 Data Analysis Technique

In order to find out whether there is a significant correlation between Classroom Climate and Students' achievement, the data was analyzed by using statistical formula. The researcher used the score of questionnaire of variable X and documentation score of variable Y. To analyze the data of the classroom climate, the researcher used the formula:

$$P = \frac{f}{N} \text{ x } 100\%$$

Where:
P   = Number of percentage
F   = Frequency
N   = Number of sample

To analyze the correlation between classroom climate and students' achievement in learning English, The researcher used SPSS 22.0 program for Windows. The product moment correlation coefficient was obtained by considering the degree of freedom (df) = N-nr; (N= number of sample, nr = number of variable)

Statistically the Hypotheses are:

$H_a : r_o > r_{table}$

$H_o : r_o \leq r_{table}$

H_a is accepted if $r_o > r_{table}$ or there is a significant correlation between the Classroom Climate and Students' achievement in learning English.

H_o is accepted if $r_o \leq r_{table}$ or there is no significant correlation between the Classroom Climate and Students' achievement in learning English.

Besides, the researcher classificated the result of coefficient correlation. The following table was the degree of coefficient correlation:

Table 3.8 Coefficient Correlation

No	Coefficient Correlation	Interpretation
1	0,00 – 0,199	Very Low
2	0,20 - 0,399	Low
3	0,40 - 0,599	Average
4	0,60 - 0,799	High
5	0,80 - 0,100	Very High

This table classificated the degree of coefficient correlation. It was to know the interpretation of the data.