CHAPTER III

METHOD OF THE RESEARCH

A. Research Design

The method in this research was a causal-comparative research. According to Gay, at all (2012, p. 228) causal-comparative research is sometimes treated as a type of descriptive research because it too describes conditions that already exist. Causal-comparative research, however, also attempts to determine reasons, or causes, for the existing condition. According to Gay, at all (2012, p. 230) learning styles is one of the independent variables investigated in causal-comparative studies. Researcher has compared students' reading comprehension in descriptive text as a dependent variable (Y) between visual students (X1), auditory students (X2), and kinaesthetic students (X3) as independent variables.

B. Time and Location of the Research

This research was conducted at State Senior High School 1 Kampar Timur. It is located at Pekanbaru-Bangkinang street km 40. This research was conducted on January, 15th-18th 2018

C. Subject and Object of the Research

The visual, auditory, and kinaesthetic students of the tenth grade at State Senior High School 1 Kampar Timur was the subject of this research, while the object was the students' reading comprehension in descriptive text.

D. Population and Sample of the Research

1. Population

The population of this research was the tenth-grade students of State Senior High School 1 Kampar Timur. The students are divided into 10 classes. The number of the tenth-grade students of State Senior High School 1 Kampar was 346 students.

Table III.1
The Population of the Tenth-Grade Students at State Senior High School 1 Kampar Timur

No	Class	Number of students
1	X.1 IPA	31
2	X.2 IPA	36
3	X.3 IPA	36
4	X.4 IPA	35
5	X.5 IPA	32
6	X.1 IPS	35
7	X.2 IPS	36
8	X.3 IPS	34
9	X.4 IPS	35
10	X.5 IPS	36
Total		346

English teachers had suggested the researcher conduct a research in IPA classes only. Moreover, the school had also provided IPA classes for the researcher. That is why the researcher only chose IPA classes to be given the learning styles questionnaire.

Table III.2
The Population of the Tenth-Grade Students of IPA Classes at State Senior High School 1 Kampar Timur

No	Class	Number of students
1	X.1 IPA	31
2	X.2 IPA	36
3	X.3 IPA	36
4	X.4 IPA	35
5	X.5 IPA	32
Total		170

2. Sample

To keep homogeneity in the sample, the researcher had only chosen IPA classes to be taken as the sample. In addition, considering the large population in that school, the researcher used purposive sampling because every class has an equal chance of being selected to be the sample. According to Arikunto (2006, p. 134), if the total population is less than 100, it is better to take all of them as the sample but if the total populations are more than 100 students, the sample can be taken between 10-15 % or 20-25% or more. Regarding that idea, the researcher took 35% of the population. 60 students were being the sample of the research.

To get 60 students, all of the students in IPA classes were given Learning Style Survey Questionnaires by Andrew D. Cohen, Rebecca L. Oxford, and Julie C.Chi (2001) in order to know what the students' learning styles were. After knowing students' learning styles, the students of IPA classes were classified into visual, auditory, and kinaesthetic students. 20 students of each

learning styles were taken. According to Gay, et al (2012, p. 228) the minimum sample size of causal-comparative research is 15 in each group.

Table III.3
The Sample of the Tenth Grade Students of State Senior High School 1 Kampar Timur

Types	Visual	Auditory	Kinaesthetic
Samples	20	20	20
Total Sample	60		

E. The technique of Collecting the Data

In order to collect data from the sample on this research, the researcher used two techniques. Firstly, to measure students' learning style (visual, auditory, and kinaesthetic), the researcher used a questionnaire. Cohen (2007, p.318) says that the questionnaire was a widely used and useful instrument for collecting survey information, providing structured, often numeric data, being able to be administered without the presence of the researcher, and often being comparatively straightforward to analyze.

The Learning Style Survey questionnaire by Andrew D. Cohen, Rebecca L. Oxford, and Julie C. Chi (2001) was used. According to Oxford the Learning Style Survey was designed to assess people's general approach to learning. It was a clear indication of people overall style preferences. In the instrument, the survey has five options; 'Never, 'rarely', 'sometimes', 'often' and 'always'.

The following table was the blueprint of the questionnaire:

Table III.4
Blueprint of the Questionnaire

Indicators	Question Number	Total
Visual Learning Style	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10
Auditory Learning Style	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	10
Kinaesthetic Learning Style	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	10
Total Items		30

Besides, to measure students' ability in reading comprehension, the researcher used reading test (Houghes: 1989:120). The researcher gave some questions related to a descriptive text because it relates to the syllabus and the students have learnt Descriptive text.

Table III.5
Blueprint of the Reading Comprehension Test

Genre	Indicators	Item Number	Total
Descriptive	Finding the main idea	1, 6, 11, 16, 21.	5
	The detail information	2, 7, 12, 17, 22.	5
	Generic structure	3, 8, 13, 18, 23.	5
	Reference	4, 9, 14, 19, 24.	5
	Language feature	5, 10, 15, 20, 25.	5
Total			25

1. Validity and Reliability

a) Validity

Every test, whether it is short, informal classroom test or a public examination should be as valid as the test constructor can make it. The test must aim at providing a true measure of the particular skill intended to measure. In the test, the researcher used content validity, in which it was used to measure the ability which should be measured (Hughes, 189, p. 26). In this case, the test should be only based on the material that students have learned. Regarding Creswell (2012, p.162) says that validity is the individual's scores from an instrument that makes 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.

The test given to the students should be balanced. It means that the test was not too easy and was not too difficult. Item difficulty was determined as the proportion of correct responses. This was held pertinent to the index difficulty, in which it was generally expressed as the percentage of the students who answer the questions correctly.

Finally, the writer determined the validity by referring to the material that was given to the students based on the students' textbook. In other words, the test given to the students was based on the material that they had learned. To find out the validity of the test, writer calculated it

by using SPSS 17 version. The researcher examined and noted the differences between r_{item} and r_{table}. Siregar (2014) stated that the item is valid if the value of r_{item} is higher than r_{table} at a significance level of 5%. The data was consulted with r_{table} at significance level of 5% (α = alpha = 0.05). The questionnaire and the test were tried out to 31 students, meaning that N= 31 with df= N – 2 = 29. The researcher took df 29, so r_{table} acquired was 0.381.

The result of try out indicated that all items were valid. It can be seen as follow:

Table III. 6
The Item Validity of
Students' Learning Styles Questionnaire Try Out

Item Number	r-item	r-table	Result
1	0.392	0.381	Valid
2	0.389	0.381	Valid
3	0.435	0.381	Valid
4	0.413	0.381	Valid
5	0.418	0.381	Valid
6	0.469	0.381	Valid
7	0.384	0.381	Valid
8	0.390	0.381	Valid
9	0.461	0.381	Valid
10	0.400	0.381	Valid
11	0.493	0.381	Valid
12	0.404	0.381	Valid
13	0.409	0.381	Valid
14	0.520	0.381	Valid
15	0.421	0.381	Valid
16	0.585	0.381	Valid
17	0.397	0.381	Valid
18	0.407	0.381	Valid
19	0.473	0.381	Valid
20	0.417	0.381	Valid
21	0.432	0.381	Valid
22	0.421	0.381	Valid
23	0.435	0.381	Valid
24	0.454	0.381	Valid
25	0.393	0.381	Valid
26	0.419	0.381	Valid
27	0.408	0.381	Valid
28	0.563	0.381	Valid
29	0.468	0.381	Valid
30	0.432	0.381	Valid

The table above shows the validity of students' learning style questionnaire tryout. Based on the table, all items are valid because r_{item}>

r_{table}. Because all items are valid, the researcher used all the items to be tested to the sample.

Table III. 7
The Item Validity of Students' Reading Comprehension Try Out

Item Number	r-item	r-table	Result
1	0.388	0.381	Valid
2	0.426	0.381	Valid
3	0.409	0.381	Valid
4	0.465	0.381	Valid
5	0.394	0.381	Valid
6	0.510	0.381	Valid
7	0.465	0.381	Valid
8	0.450	0.381	Valid
9	0.428	0.381	Valid
10	0.404	0.381	Valid
11	0.527	0.381	Valid
12	0.425	0.381	Valid
13	0.434	0.381	Valid
14	0.414	0.381	Valid
15	0.391	0.381	Valid
16	0.411	0.381	Valid
17	0.414	0.381	Valid
18	0.479	0.381	Valid
19	0.445	0.381	Valid
20	0.404	0.381	Valid
21	0.507	0.381	Valid
22	0.389	0.381	Valid
23	0.388	0.381	Valid
24	0.479	0.381	Valid
25	0.492	0.381	Valid

The table above shows the validity of students' reading comprehension tryout. Based on the table, all items are valid because $r_{item} > r_{table}$. Because all items are valid, the researcher used all the items to be tested to the sample.

b) Reliability

Reliability must run well with an accuracy of measurement. This kind of accuracy was reflected in obtaining the similar results when the measurement was repeated on different occasion or with different instruments or by a different person. The characteristic of reliability is sometimes termed consistency (Brown, 2003:20). And this research was internal consistency reliability. According to Creswell (2012, p.160), internal consistency reliability was the instrument administered once; using one version of the instrument and each participant in the study completes the instrument.

According to Cohen et.al, (2007, p. 506), the guidelines for reliability are as follows:

Table III.8
Category of Reliability

No	Reliability	Category
1	>0.90	Very highly reliable
2	0.80-0.90	Highly reliable
3	0.70-0.79	Reliable
4	0.60-0.69	Minimally reliable
5	<0.60	Unacceptably low reliability

In this research, the writer used software SPSS 17 version to calculate the reliability of the test. The following table is the reliability test of students' learning styles questionnaire.

Table III.9
Reliability Statistics

Cronbach's Alpha	N of Items
.850	30

Based on the analysis above, the value of Cronbach's Alpha was 0.850. It could be said that the questionnaire is reliable. Due to 0.80-0.90, the level of reliability was highly reliable.

The following table is the reliability test of reading comprehension test try out:

Table III.10
Reliability Statistics

Cronbach's Alpha	N of Items
.812	25

The reliability of test was 0.812. It was categorized into the highly reliable level.

c) Normality Test

The test used to know whether the data in this study normally distributed or not. To analyze the normality test Kolmogorov-Smirnov was used, with α = 0.05. Kolmogorov-Smirnov test was used due to the sample of the study is > 50. And the data was analyzed by using SPSS 17. The result of normality test shown below:

Table III.11
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Visual Students	.146	20	.200*	.941	20	.254
Auditory Students	.125	20	.200*	.950	20	.368
Kinesthetic Students	.124	20	.200*	.963	20	.599

a. Lilliefors Significance Correction
*. This is a lower bound of the true significance.

From the result above, it can be seen that the data are categorized normally distributed because the value of significant is higher than 0.05. The significant value of visual students' reading score was 0.200, Sig. = 0. 200> 0.05. The significant value of auditory students' reading score was 0. 200, Sig. = 0. 200> 0.05. The significant value of kinaesthetic students' reading score was 0.200, Sig. = 0. 200> 0.05, hence it can be concluded that all the data normal distributed.

d) Homogeneity Test

After tested the normality, the homogeneity test was also analyzed. The test was conducted for recognizing that the variances of data are homogenous or not. Homogenous means the data have the same characteristics. To analyze the homogeneity test, this study used Levene statistics technique. It also calculated by using SPSS 17. The result of homogeneity test can be seen as follow:

Table III.12
Test of Homogeneity of Variances

Score

Levene Statistic	df1	df2	Sig.
.076	2	57	.927

Consequently, from the result of homogeneity presented above, we can reveal that the variance of the data is homogenous. According to Budi Susetyo said that data are homogeneous if the significance value is greater than the alpha value (0.05). Therefore, it can be stated that the variance of data is homogenous with the sig. 0.927 which clearly seen that it higher than 0.05.

F. The Technique of Analysing Data

To find out whether there was a significant difference in reading comprehension in descriptive text among visual, auditory, and kinaesthetic students, the researcher uses analysis of variance. An analysis of variance is a method that allows us to compare the mean score of a continuous (or ordinal with many scale points) variable between a number of groups. (Muijs: 2004)

The researcher used ANOVA to see the results. Emzir (2012, p. 138) pointed that the statistical inferential was used to know the significant differences among the groups, by using ANOVA (Analysis of Variance) formula to make comparison scores among variables. So, the researcher will use one way ANOVA to compare students' reading comprehension from X_1, X_2, and X_3; Visual, Auditory, and Kinaesthetic students.

SPSS 17.0 version of Windows program was used to analyze the data. Moreover, the hypothesis was formulated as below:

1. H_0 (Null Hypothesis)

   H_0 = There is no significant difference in learning styles (visual, auditory, and kinaesthetic) in reading comprehension of descriptive text at the tenth grade of State Senior High School 1 Kampar Timur

2. H_a (Alternative Hypothesis)

H_a = There is a significant difference of learning styles (visual, auditory, and kinaesthetic) in reading comprehension of descriptive text at the tenth grade of State Senior High School 1 Kampar Timur

The criteria of the hypothesis are:

H_0 is accepted if F-value (F_0) < F-table (F_t) and probability significant (sig.) value > 0.05

H_a is accepted if F-value (F_0) > F-table (F_t) and probability significant (sig.) value < 0.05