CHAPTER III
RESEARCH METHODOLOGY

A. The Research Design

This research is categorized as quasi-experimental research. Quasi-experimental research is only to be used when it is not feasible to use a true experimental design.[1] It is a research design having some but not all of the characteristics of a true experimental design. In this research, the writer used two classess as sample, namely: experimental class and control class. For experimental class, the writer used pre-test, treatment, and post-test. For control class, the writer used pre-test and post-test only. According to Sukardi, the design of this research can be illustrated as follows:[2]

TABLE II

The Reseach Design

Group	Pre-test	Treatment	Post-test
E	T1	X	T2
C	T1	-	T2

Explanation: E = Experimental class

C = Control class

T1 = Pre-test to experiment class and control class

T2 = Post- test to experimental and control class

X = Receive to experiment using Literature Circles strategy

[1] L.R. Gay and Peter Airasian. *Educational Research*. (New Jersey: Prentice-Hall, 2000). p.394

[2] Sukardi. *Metodology Penelitian Pendidikan: Kompetensi dan Praktiknya*. (Jakarta: Bumi Aksara, 2010). P.186

1. Procedures of collecting data for experimental group

   a. Pre-test

      The pre-test was carried out to determine the students' comprehension with their score. The items used for pre-test consisted of 25 items. The test was about reading comprehension.

   b. Treatment

      The treatment was conducted for experimental group by using Literature Circles Strategy applied for eight meetings.

   c. Post-test

      After conducting the treatment, the post-test was administered and analyzed as final data of this research. The post-test given was the same test as the pre-test.

2. Procedures of collecting data for control group

   a. Pre-test

      The goals, items, and procedures of the test for control group were the same as those conducted for experimental group; the difference was only on the time.

   b. No treatment

   c. Post-test

      Post-test was also given to control group and the result was analyzed and used as final data for this research.

B. The Location and Time of the Research

The research was conducted at SMAN 1 Kampar Kiri. It is located in Kampar Regency. This research was conducted starting from March to April 2013.

C. The Subject and Object of the Research

The subject of this research was the students of the first year at SMAN 1 Kampar Kiri, and the object of this research is the effect of Literature Circles strategy toward reading comprehension.

D. The Population and Sample of the Research

1. Population

The population of this research was the first year students at SMAN 1 Kampar Kiri. They were about 124 students, divided into four classes. It can be seen as the table below:

Table III

Distribution of the Research Population

CLASS	NUMBER OF STUDENTS
X.1	32 Students
X.2	32 Students
X.3	30 Students
X.4	30 Students
TOTAL	124 Students

2. Sample

Because the population was large, the writer used cluster random sampling technique in taking the sample. Cluster random sampling is randomly

selected group, not individuals. Selected group have the similar characteristic, and the researcher use all the students in each classroom.[3] The sample of this research was devided into two groups. The first group was experimental class and another one was control class. Class X.3 as experiment class and class X.4 as control class.

The spesification of the research sample can be seen on the table below:

Table IV
Total Sample of the First Year Students at SMAN 1 Kampar Kiri

No	Classes	Number of Students
1	X.3	30
2	X.4	30
Total Sample		60

E. The Technique of Collecting Data

To collect the data, the technique was used by the writer in this research was test. The type of the test was multiple choice tests which consisted of 25 items. Every multiple choice item consisted of four answer options (a, b, c, and d). The test was used to collect the data on implementation of using literture circles strategy towards students' reading comprehension in narrative text. The test was devided into two, pre-test and post-test. The first was pre-test, used to measure students' reading comprehension before using literature circles strategy. The second was post-test, used to measure students' reading comprehension after using literature circles strategy. The data were collected through the following procedures:

[3] L.R. Gay. *Loc. Cit* p. 129

a. Both groups (experimental group and control group) were asked to express their idea of reading comprehension.
b. The writer evaluated the test based on reading comprehension aspect that consisted of identifying specific information, identifying main idea, identifying the new vocabulary, identifying factual information, and identifying the content of the text. It was done to make the writer easy to collect the data.

The test was used to obtain the data concerning the students' reading comprehension. The technique was carried out in items of collecting the data and information dealing with the data variable X (Literature Circles strategy) Y (reading comprehension). The materials of the test were adopted from the syllabus of the First Year Students at SMAN 1 Kampar Kiri.

The type of the test was multiple choice which consisted of 25 items. Every multiple choice item consists of four answer options (a, b, c, and d). Then, the score test and reading comprehension of Narrative test were classified in the following table:

Table V
The Classification of Students' Score[4]

The Score of Level	Category
80 – 100	Very Good
66 – 79	Good
56 – 65	Enough
40 – 55	Less
30 – 39	Fail

[4] Suharsimi Arikunto. *Dasar-dasar Evaluasi Pendidikan.* (Jakarta: PT.Renika Cipta, 2009). P. 245

F. The Validity and Reliability of the test

1. Validity

Validity in general refers to appropriateness of a given test or any of its component parts as measure of what it was purposed to measure. It means the test will be valid to the extent that was measured what it was supposed to measure. According to Gay[5], validity is the appropriateness of the interpretations made from tests score. Clear validity is the core future for the test. Furthermore, Gay says that there are three kinds of validity. They are content validity, criterion-related validity, and construct validity. All of them have different usage and function.

Based on the definition above, to measure whether or not the test was valid in this research, the writer used content validity. In other words, tests were given based on material that they had learned, concerning five components:

1. Identify factual information,
2. Identify specific information,
3. Identify content of the text,
4. Identify main idea and,
5. Identify new vocabulary.

To obtain the data of the result of the test between Literature Circles strategy and Conventional strategy toward students' reading comprehension, the writer acquired to show each score. It was used based on the most important characteristic of an item to be accurately determined by its difficulty. Then, the

[5]Gay, L.R and Peter Airasian. *Op. Cit.*, p. 161

test given to students was considered not too difficult or not too easy that showing the low reliabilty. Item difficulty is determined as the proportion of correct responses. This is held pertinent to the index difficulty, in which it is generally expressed as the percentage of the students who answer the questions correctly. The formula for item difficulty is as follows:

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$$\text{FV} = \frac{R}{N}$$

Where FV : Index of difficulty or Facility value

R : The number of correct answers

N : The number of examines or students taking the test

The formula above was used to find out the easy or difficulty of each item test that writer gave to the respondents. The items that did not reach the standard level of difficulty were excluded from the test and they were changed with the new items that were appropriate. Prepared in practice to accept items with facility value between 0.30 and 0.70.

The standard level difficulty is < 30 and > 70. Then, the proportion correct is represented by “p”, whereas the proportion incorrect is represented by “q”. it can be seen in the following tables:

Table VI
The students are able to identify the content of reading text

Variable	Identify the Content					N
Item no	1	6	11	16	21	30
Correct	18	19	18	18	18	
p	0.60	0.63	0.60	0.60	0.60	
q	0.40	0.37	0.40	0.40	0.40	

Based on the table VI, the proportion of correct answer for item number 1 shows the proportion of correct 0.60, item number 6 shows the proportion of correct 0.63, item number 11 shows the proportion of correct 0.60, item number 16 show the proportion of correct 0.60. Item number 21 show the proportion of correct 0.60. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that items of difficulty level of each item number for identifying the content of reading text are accepted.

Table VII
The students are able to find the factual information of reading text

Variable	Identify the Factual information					N
Item no	2	7	12	17	22	30
Correct	17	18	17	14	16	
P	0.56	0.60	0.56	0.46	0.53	
Q	0.44	0.40	0.44	0.54	0.47	

Based on the table VII, the proportion of correct answer for item number 2 shows the proportion of correct 0.56, item number 7 shows the proportion of correct 0.60, item number 12 shows the proportion of correct 0.56, item number 17 shows the proportion of correct 0.46. Number 22 shows the proportion of

correct 0.53 .Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that items of difficulty level of each item number for identifying factual information are accepted.

Table VIII
The students are able to identify the specific information of reading text

Variable	Identify the Specific Information					N
Item no	3	8	13	18	23	30
Correct	19	15	14	13	14	
p	0.63	0.50	0.46	0.43	0.46	
q	0.37	0.50	0.54	0.57	0.54	

Based on the table VIII, the proportion of correct answer for item number 3 shows the proportion of correct 0.63, item number 8 shows the proportion of correct 0.50, Item number 13 shows the proportion of correct 0.46, item number 18 shows the proportion of correct 0.43. Number 23 shows the proportion of correct 0.46. Based on the standard level of difficulty “p” <0.30 and >0.70, it is pointed out that items difficulty level of each item number for identifying the specific information of the reading text are accepted.

Table IX
The students are able to identify the main idea in reading text

Variable	Identify the Main Idea					N
Item no	4	9	14	19	24	30
Correct	14	17	14	14	18	
p	0.46	0.56	0.46	0.46	0.60	
q	0.54	0.44	0.54	0.54	0.40	

Based on the table IX, the proportion of correct answer for item number 4 shows the proportion of correct 0.46, item number 9 shows the proportion of correct 0.56, item number 14 shows the proportion of correct 0.46, item number 19 shows the proportion of correct 0.46, number 24 shows the proportion of correct 0.60. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out that items of difficulty level of each item number for identifying the main idea are accepted.

Table X
The students are able to identify the new vocabulary in reading text

Variable	Identify the New Vocabulary					N
Item no	5	10	15	20	25	30
Correct	15	16	13	13	18	
P	0.50	0.53	0.43	0.43	0.60	
Q	0.50	0.47	0.57	0.57	0.40	

Based on the table X, the proportion of correct answer for item number 5 shows the proportion of correct 0.50, item number 10 shows the proportion of correct 0.53, item number 15 shows the proportion of correct 0.43, item number 20 shows the proportion of correct 0.43. Number 25 shows the proportion of correct 0.60. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out that items of difficulty level of each items number for identifying the new vocabulary in narrative text are accepted.

2. Reliability

According to H. Doghlas Brown[6], reliability has to do with accuracy of measurement. This kind of accuracy was reflected in the obtaining of similar results when measurement was repeated on different occasions or with different instruments by different persons. The characteristic of reliability was sometimes termed consistent. Meaning that, we can say the test was reliable when an examinee's results were consistent on repeated measurement.

To obtain the reliability of the test, it must be known the Mean and Standard Deviation of test. Validity in general refers to appropriateness of a given test or any of its component parts as the measure of what it was purposed to measure. It means the test will be valid to the extent that was measured what it was supposed to measure.

The reliability coefficients for good identified kinds of text structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00. Heaton states that, the reliability of the test was considered as follows:

1. **0.0 – 0.20** = Reliability is low
2. **0.21 – 0.40** = Reliability is sufficient
3. **0.41 – 0.70** = Reliability is high
4. **0.71 – 1.0** = Reliability is very high[7]

[6]H. Douglas Brown, *Language Assessment: Principles and Classroom Practices*. New York: Pearson Education Inc. 2003. p. 19-27

[7] J.B. Heaton, *Writing English Language Test.* Cambridge: Cambridge University Press, 1988. p. 164

To obtain the reliability of the test given, the researcher used the formula as follows[8]:

$$KR\ 20: ri = \frac{n}{(n-1)} \quad \frac{s^2 - \sum pq}{s^2}$$

Where:

n : number of items on the instrument

Pi : proportion of subjects who answered the item correctly

Q : proportion of subject who answered the item wrong (1-Pi)

$\sum pq$: the multiplication result between p and q

S^2 : total variance

Furthermore, to obtain the reliability of the test given, the data should be looked for first and then analyzed manually by the formula of statistic above (see the appendix to know the process of finding data). The data needed had been found after being calculated, they are as follows:

N = 25

M = 53,23

S = 6.03

In calculating by reliability test. The researcher used the formula as follows[9]:

[8] Sugiyono. *Statistik untuk Penelitian.*Bandung: Alfabeta. 2007. p. 359
[9] *Ibid*

KR 20:

$$ri = \frac{n}{(n-1)} \quad \frac{s^2 - \sum pq}{s^2}$$

$$= \frac{25}{25-1} \quad \frac{6.03^2 - 6.00}{6.03^2}$$

$$= 1.04 \quad \frac{36.3609-6.00}{36.3609}$$

$$= 1.04 \quad \frac{30.3609}{36.3609}$$

$$= 1.04\ (0.83)$$

$$= 0.863$$

Then, the score obtained (0.863) comparing to the r product moment at the 5% significant is 0.444 and the 1% significant is 0.561. Whereas the N is 25. Thus, it can be read 0.444<0.863>0.561. This mean the test of reading comprehension is reliable.

Based on the result above, it also can be stated that the reliability was **very high.**

G. The Technique of Analyzing Data

To analyze the collected data, the writer established some categories to classify the result of the test as main instrument of this research, adopted from Hartono,[10] as follows:

$$to = \frac{M_x - M_y}{\sqrt{\frac{SD_x}{\sqrt{N-1}}^2 + \frac{SD_y}{\sqrt{N-1}}^2}}$$

where t_o : the value of t-obtain

[10] Hartono. *Statistik untuk Pendidikan.* (Pekanbaru: Pustaka Pelajar, 2004) p.191

M_x : Mean score of experimental sample

M_y : Mean score of control sample

SD_x : Standard deviation of experimental sample

SD_y : Standard deviation of control sample

N : Number of the students

This section presents the statistical result followed by the discussion about teaching by using literature circles strategy to increase students' ability in reading comprehension of the first year at SMAN 1 Kampar Kiri. The data were devided into two groups, they were experiment and control group score. The following statically formula was used to get the main score (M) and the standard deviation (SD). The result both of M and SD used the formula:

$M_x = \frac{\Sigma x}{N}$, the formula for experimental group

$M_y = \frac{\Sigma y}{N}$, the formula for the control group

$SD_x = \frac{\Sigma x^2}{N}$, the formula for experimental group

$SD_y = \frac{\Sigma y^2}{N}$, the formula for the control group