CHAPTER III

RESEARCH METHODOLOGY

A. **The Research Design**

This research is an experimental research. Experiment is testing an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable.[1] In this research, the researcher used pre experimental design. According to Gay and Airasian, one group pre test, exposed to treatment and post test.[2] In conducting the research, the researcher used one class as sample called experimental class administered by using serial story and compare pre test and post test in order to determine the "The Effect Of Using Serial Story Strategy Toward Listening Comprehension Of The Second Year Students At Darul Hikmah Islamic Senior High School Pekanbaru".

B. **The Location and the Time of the Research**

This research was conducted from March-Mei 2014. The location of this research is at Darul Hikmah Islamic Senior High School Pekanbaru.

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[1] Jhon W. Cresswell,*Educational Research: Planning, Conducting, and Evaluating Quantitave and Qualitative Research* . (New Jersey: Pearson Education,2008), p.299

[2]L.R. Gay and Peter Airasian,*Educational Research Competencies for Analysis and Application.*(New Jersey: Prentice Hall, 2000), p.367.

C. The Subject and the Object of the Research

   The subjects of this research were the students at Darul Hikmah Islamic Senior High School Pekanbaru. The objects of this research was students' listening comprehension by using Serial Story Strategy At Darul Hikmah Islamic Senior High School Pekanbaru and the significant effect of using serial story strategy toward listening comprehension of the second year students at darul hikmah islamic senior high school pekanbaru

D. The Population and the Sample of the Research

   The population of this research was the students at the second year at Darul Hikmah Islamic Senior High School Pekanbaru. The number of students was 127 students. It can be seen in the following table Population below:[3]

Table III.1
Population of the Research

No	Classes	Population	Total
1.	XI IPA 1	22	22
2.	XI IPA 2	17	17
3.	XI IPS I	25	25
4.	XI IPS 2	20	20
5.	XI AGM 1	19	19
6.	XI AGM 2	24	24
Total		127	127

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[3] Interview data from English Teacher of MA Darul Hikmah, 25 March 2013

Because the design of the research was one group pre test –post test, so the technique sampling used in this research was cluster sampling. According to Gay, cluster sampling is randomly selected groups, not individual[4]. Then, based on the limitation of the research, the researcher took only one class after doing cluster sampling; that was class XI Science 1. In this class, there were 22 students as sample of the research.

E. The Technique of Collecting Data

In this research, the writer used listening test as the technique of collecting data. In this research, the test was designed to provide information about how well the students comprehend of what they listened to. The test had given twice. Before and after the treatment which was called   pre test and post test. The pre test was done in order to identify students' comprehension in listening before being taught by using serial story strategy and the post-test was given in order to know the significant effect of serial story strategy toward students' listening comprehension. To get data about students listening comprehension.

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[4]L.R. Gay and Peter Airasian, *Op.Cit*., p. 129

TABLE III. 2

BLUE PRINT TEST

INDICATORS	QUESTION
1 The students are able to identify the topic in fables and folk tales that they heard	**1, 6, 12**
2. The students are able to identify the generic structure of fables and folk tales that they heard	**3, 10, 14**
3. The students are able to identify specific details containing of characters included in monologue text listened accurately	**2, 7, 11, 16**
4. The students are able to identify where the story take place in fables and folk tales	**4, 8, 20**
5. The students are able to identify the certain information in the fables and folk tales	**13, 15, 17, 18**
6. The students are able to identify moral values implied in the story	**5, 9, 19**

Based on table III.2, identifying the topic in fables and folk tales can be found in items number 1,6 and 12. Identifying the generic structure of fables and folk tales can be seen in items number 3, 10 and 14. Identifying specific details containing of characters included in monologue text listened accurately can be seen in items number 4,8 and 20. Identifying the certain information in the fables and folk tales was items

numbers 13, 15, 17 and 18. identify moral values implied in the story was
in items number 5, 9 and 19.

F. The Item Difficulties, Validity, and Reliability

1. Items Difficulties of the Test

Before the test was given to the sample of this research, the writer did
try out the test items. The test given to the students was considered not too
difficult or not too easy. According to Arikunto the test is accepted if the
degree of difficulty is between 0.30 – 0.70.[5] It was determined by finding
the difficulty level of each item. The formula for item difficulty is as
follows:[6]

$$P = \frac{B}{JS}$$

Where:

P : Index of difficulty

B : The number of correct answer

JS : the number of students

The difficulty level of an item shows how easy or difficult a
particular item is in a test. The items that did not reach the standard level
of difficulty were excluded from the test and they were changed to the new
items that were appropriate.

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[5] Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara. 2008. P.
210

[6] Ibid. p. 208

The standard level of difficulty used was < 0.30 and > 0.70. It means that an item was accepted if the level of difficulty was between 0.30-0.70 and it was rejected if the level of difficulty was less than 0.30 (the item was too difficult) and over than 0.70 (the item was too easy). The proportion of correct answer was represented by "p", whereas the proportion of incorrect answer was represented by "q".

The data obtained by using post-test were evaluated in 6 components:

a. The students are able to identify the topic in fables and folk tales that they heard

b. The students are able to identify the generic structure of fables and folk tales that they heard

c. The students are able to identify specific details containing of characters included in monologue text listened accurately

d. The students are able to identify where the story take place in fables and folk tales

e. The students are able to identify the certain information in fables and folk tales that they heard.

f. The students are able to identify moral values implied in the story

The calculation of item difficulty can be seen from the following table:

Table III.3
Indicator I:
Ability in identifying the topic in fables and folk tales that they heard

Indicator	The students are able to identify the topic in fables and folk tales that they heard			N
Item Numbers	1	6	12	
Correct	14	11	8	20
P	0.70	0.55	0.40	
Q	0.30	0.45	0.60	

Based on the table above, the proportion of correct answer for the indicator of identifying the topic in fables and folk tales that they heard 1 shows the proportion of correct 0.65. Item number 6 shows the proportion of correct 0.55. Item number 12 shows the proportion of correct 0.40. Based on the standard level of difficulties "P" > 0.30 and <0.70, it indicates that every item is in average. Therefore, all items for the indicator of identifying the topic in fables and folk tales that they heard are accepted.

Table III.4
Indicator II:
Ability in identifying the generic structure of fables and folk tales that they heard

Indicator	The students are able to identify the generic structure of fables and folk tales that they heard			N
Item Numbers	3	10	14	

Correct	13	12	9	20
P	0.65	0.60	0.45	
Q	0.35	0.40	0.55	

The table above describes the proportion of correct answer the indicator of identify the generic structure of fables and folk tales that they heard. It consists of item number 3, 10, 14, and 14. Item number 3 shows the proportion of correct 0.65. Item number 10 shows the proportion of correct 0.60. Item number 14 shows the proportion of correct 0.45. Based on the standard level of difficulties "P" > 0.30 and < 0.70, it indicates that every item is in average level. So, the table above shows that all items for the indicator of identifying the generic structure of fables and folk tales that they heardare accepted.

Table III.5
Indicator III:
Ability in identifying specific details containing of characters included in monologue text listened accurately

Indicator	The students are able to identify specific details containing of characters included in monologue text listened accurately				N
Item Numbers	2	7	11	16	
Correct	12	10	13	12	20
P	0.60	0.50	0.65	0.60	
Q	0.40	0.50	0.35	0.40	

Based on the table above, the proportion of correct answer for the indicator of identifying the specific details containing of characters included in monologue text listened accurately in item number 2 shows the proportion of correct 0.60. Item number 7 shows the proportion of correct 0.50. Item number 11 shows the proportion of correct 0.65. Item number 16 shows the proportion of correct 0.60. Based on the standard level of difficulties "P" > 0.30 and < 0.70, it indicates that every item is in average level. So that, all items for the indicator of identifying the specific details containing of characters included in monologue text listened accurately are accepted.

Table III.6
Indicator IV:
Ability in identifying where the story take place in fables and folk tales

Indicator	The students are able to identify where the story take place in fables and folk tales			N
Item Numbers	4	8	20	
Correct	13	11	9	
P	0.65	0.55	0.45	20
Q	0.35	0.45	0.55	

Based on the table above, the proportion of correct answer for the indicator of identifying where the story take place in fables and folk tales in item number 4 shows the proportion of correct 0.65. Item number 11 shows the proportion of correct 0.55. And item number 9 shows the

proportion of correct 0.45. Based on the standard level of difficulties "P" > 0.30 and < 0.70, it indicates that every item is in average level. So that, all items for the indicator of identifying where the story take place in fables and folk tales are accepted.

Table III.7
Indicator V:
Ability in identifying the certain information in the fables and folk tales

Indicator	The students are able to identify the certain information in the fables and folk tales				N
Item Numbers	13	15	17	18	
Correct	9	11	10	13	20
P	0.45	0.55	0.50	0.65	
Q	0.55	0.45	0.50	0.35	

The table above describes the proportion of correct answer for the indicator of identifying the certain information in the fables and folk tales. It is consist of item number 13, 15, 17, and 18. Item number 13 shows the proportion of correct 0.45. Item number 15 shows the proportion of correct 0.55. Item number 17 shows the proportion of correct 0.50. And item number 18 shows the proportion of correct 0.65. Based on the standard level of difficulties "P" > 0.30 and < 0.70, it indicates that every item is in average level. So, the table above shows that all items for the indicator of identifying the certain information in the fables and folk tales are accepted.

Table III.8
Indicator VI:
Ability in identifying moral values implied in the story

Indicator	The students are able to identify moral values implied in the story			N
Item Numbers	5	9	19	
Correct	10	12	9	20
P	0.50	0.60	0.45	
Q	0.50	0.40	0.55	

The table above describes the proportion of correct answer for the indicator of identifying the moral values implied in the story. It consists of item number 5, 9, and 19. Item number 5 shows the proportion of correct 0.50. Item number 9 shows the proportion of correct 0.60and item number 19 shows the proportion of correct 0.45. Based on the standard level of difficulties "P" > 0.30 and < 0.70, it indicates that every item is in average level. So, the table above shows that all items for the indicator of identifying the moral values implied in the story are accepted.

Based on the explanation above, all items for each indicator shows the standard level of difficulties, those are between 0.30 and 0.70. It means that all items of this test are valid.

2. Validity of the Test

According to Heaton the validity of a test is the extent to which it measures what it is supposed to measure and nothing else. The test must aim to provide a true measure of the particular skill which it is intended to measure: to the extent that it measures external knowledge and other skills at the same time, it will not be a valid test.[7]

In this research, the writer used multiple choices as the instrument of the test. In giving the test to respondents, the test should be valid. The research instrument should be qualified. The instrument can be valid if the instrument is measuring what the writer wants to find out. Scarvia B. Anderson *et.al* in Arikunto claims the statement "a test is valid if the measure what it purposes to measure.[8]

The writer did try out in March at other class but had the same level. The purpose of try out was to know the item difficulty, validity and reliability of the test. It was determined by finding the difficulty level of each item.

To find validity of the test, the writer used correlation product moment. The formula is as follows:

$$r_{xy} = \frac{\sum xy}{\sum x^2 \ \sum y^2}$$

Where:

r_{xy} = correlation product moment x dan y

[7] *Ibid,* p. 159

[8] Arikunto, Suharsimi, *op. cit,* p. 65

$$_{xy} = \text{total x dan y}$$

$$X^2 = \text{X quadrant}$$

$$Y^2 = \text{Y quadrant}$$

$$r_{xy} = \frac{738}{1107 \quad 690}$$

$$r_{xy} = \frac{738}{\sqrt{763830}}$$

$$r_{xy} = \frac{738}{873.97} = 0.84$$

According to Arikunto, the range of validity is as follows:[9]

Table III. 9
The Classification of Validity Range

No	Classification	Score
1	Excellent	0.800-1.00
2	Good	0.600-0.800
3	Fair	0.400-0.600
4	Poor	0.200-0.400
5	Very Poor	0.00-0.200

Based on the range of validity above, if the validity test is 0.84 it means that the validity of the test is excellent.

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[9]*Ibid*, p.75

3. Reliability of the Test

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of good test. According to Brown, a reliable test is consistent and dependable.[10] Reliability has to be done with accuracy of measurement. The test was reliable when the result was consistent on repeated measurement. To know the reliability of the test, the writer used the formula KR-20[11]:

$$rii = \frac{k}{k-1} \quad \frac{s^2 - \sum pq}{s^2}$$

Where:

rii : Instrument reliability

k : Number of items

S : Deviation standard

p : The proportion of the students making correct answers wasdivided by the total number of the students

q : The proportion of the students makingincorrect answers was divided by the total number of the students.

Based on the result of try out score, the reliability of the instrument of this research can be seen as follows:

$$rii = \frac{k}{k-1} \quad \frac{s^2 - \sum pq}{s^2}$$

[10]H. Douglas Brown. *Language Assessment: Principles and Classroom Practice* (San Fransisco: San Fransisco State University, 2004), p. 20

[11]Suharsimi Arikunto, *Prosedur Penelitian*: *Suatu Pendekatan Praktek*, (Jakarta: PT Rineka Cipta, 2006),p.187

$$rii = \frac{20}{20-1} \quad \frac{53.29 - 4.85}{53.29}$$

$$= \frac{20}{19} \quad \frac{48.44}{53.29}$$

$$= 1{,}05 \quad 0{,}91$$

$$rii = 0{,}955$$

Based on the calculation above, the reliability ($r_{obtained}$) of the test is 0.955. The score obtained 0.955 is compared to the r Product moment at the degree of freedom 20. r product moment at the level of 5% is 0.423 and at the level of 1% is 0.537. The score $r_{obtained}$ is higher than r-table. It can be seen that 0.423 <0.955 >0.537. It means that the test was reliable.

G. The Technique of Data Analysis

1. Normality Test

Before analyzing the data by using t-test formula, the researcher had to find out the normality test of the data. It was used in order to know the data was normal or not. If the data have normal distribution, a parametric test should be used and if the data distribution is not normal, a nonparametric test should be used.[12] The normality test of the data was analyzed by using Kolmogorov-Smirnove technique with SPSS 17 version.

Analysis:

H_o : population with normal distribution

H_a : population with not normal distribution

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[12] L. R. Gay and Peter Airasian, *Op.cit*. p. 482-483

If the probability > 0.05 H_o was accepted

If the probability < 0.05 H_o was rejected

Based on the output SPSS, the test of normality shows:
Sig or p was 0.344 > 0.05

It means H_o was accepted or the data was normal. Therefore, the researcher used T-test formula as a parametric test for analyzing the data.

2. The Technique of Data Analysis

There are two variables correlated; the independent variable (X) and dependent variable (Y) which are both interval scales. In order to find out whether there is significant effect of using Serial Story Strategy on students' listening comprehension at Darul Hikmah Islamic Sernior High School Pekanbaru. In analyzing the data, writer used paired sample T-Test technique. The formula can be seen as follows:[13]

$$t = \frac{d}{\dfrac{\sum d^2 - \dfrac{(\sum d)^2}{N}}{N(N-1)}}$$

Where:

    t   : t-observed

    D   : difference

    N   : numbers of sample

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[13]L.R. Gay and Peter Airasian.*Ibid.,* p.489