

### CHAPTER III

## RESEARCH METHODOLOGY

#### A. The Research Design

This research is an experimental research. According John W. Creswell, experiment is testing an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable.<sup>1</sup> In this research, the researcher will use pre-experimental design. According to Gay and Airasian, one group pretest, exposed to treatment and posttest.<sup>2</sup> In conducting the research, one class of the first year at MA Darul Hikmah participated and as sample that is called experiment class. The class got pretest at the beginning, treatment in the middle and post test at the end of the research. The pretest and posttest result were compared in order to determine the effect of the treatment. Gay said that, this research called the One-Group Pretest-Posttest Design, involves a single group that is pre-test, exposed to a treatment, and post-tested. The success of the treatment is determined by comparing pretest and posttest score.<sup>3</sup>

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<sup>1</sup> Jhon W. Cresswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. New Jersey: Pearson Education, 2008. p.299

<sup>2</sup>L.R. Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application*. New Jersey: Prentice Hall, 2000. p.367.

<sup>3</sup>*Ibid*, p. 388.

**Table III.1**  
**Research Design**

<i>CLASS</i>	<i>PRE-TEST</i>	<i>TREATMENT</i>	<i>POST-TEST</i>
<b>B</b>	<b>T<sub>1</sub></b>		<b>T<sub>2</sub></b>

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

This research was conducted on March, 31<sup>th</sup> to May, 14<sup>th</sup> 2014. The location of this research is at MA Darul Hikmah Pekanbaru.

**C. The Subject and the Object of the Research**

1. The subject of the research

The subject of this research was the tenth grade students at MA Darul Hikmah Pekanbaru, in the academic year of 2013/ 2014.

2. The object of the research

The object of this research was using gossips game and students' listening comprehension.

**D. Population and Sample**

The population of this research was the tenth grade students of MA Darul Hikmah Pekanbaru. The number of students was 166 students. It could be seen in the following table Population below:

**Table III.2****The population of the tenth grade students at MA Darul Hikmah Pekanbaru**

No	Class	Total
1	X.1	31
2	X.2	25
3	X.3	30
4	X.4	28
5	X.5	27
6	X.6	25
Total		166

Arikunto stated if the population is homogeneous enough, for the population which less than 100 persons, the sample is all, but if the population more than 100 persons, the sample is taken between 10-15% or 20-25% or more than it. <sup>4</sup>Sample of the research must be representative all of population. Gay say that "... a good sample is one that representative of the population...".<sup>5</sup>Futher, in determining sample size, he elaborated that for experiment and comparative studies, a minimum of 30 participants in each group is recommended...<sup>6</sup>Therefore, the researchertook one class of them as the samples of this research were chosen by using cluster random sampling technique.According to Gay, cluster random sampling technique is most useful when the population is very large or spread out over a wide geographic area<sup>7</sup>. It means that sampling in which intact group, not

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<sup>4</sup> Suharsimi Arikunto, *Prosedur Penilaian Suatu Pendekatan Praktik*, (Jakarta: PT. Mahasaya, 2006), p. 134.

<sup>5</sup> L.R Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application* (6<sup>th</sup>Ed). USA:Prentice-Hall, 2000, p.123 and 134

<sup>6</sup> L.R Gay and Peter, *Ibid*

<sup>7</sup>*Ibid*, p. 129

individuals, were randomly selected. Therefore, the researcher used listening test to measure the student's comprehension. So, researcher took one of classes, one of the classes was the experimental class (X. 2).

#### **E. Technique of Collecting Data**

In collecting data for this research, the researcher used listening test in performance form as the instrument. The kinds of test that had given to the students are as follows:

##### **1. Observation and Interview**

The researcher conducted observation at the school that researcher choose, that was MA Darul Hikmah Pekanbaru. The researcher brought some of listening indicators and gave attention how is teaching and learning process of language classroom, especially in listening material. Besides that, the researcher also conducted interview with the English teacher at the school about some of listening indicators that the researcher had been prepared. This activity was conducted to find out the problems of the students in learning language, especially listening comprehension.

2. Pre-test was given to the student before giving the treatment of the game to the experimental class. This test will be used to measure basic students' listening comprehension.

3. Post-test was given to the students after giving the treatment of the game to the experimental class. This test is used to know the effect of using game given to the students whether it makes difference or not in students' listening comprehension.

**Table III.3**  
**Blue Print of The Test**

NO	INDICATORS	ITEM NUMBERS
1	The students are able to identify the generic structure of descriptive text that they heard.	3, 8, 13, 19
2	The students are able to identify the topic of descriptive text that they heard.	1, 6, 11, 17
3	The students are able to identify specific details containing of characters in descriptive text accurately.	4, 7, 9, 12
4	The students are able to identify the certain information in the descriptive text.	5, 10, 15, 20
5	The students are able to identify the purpose of descriptive text that they heard.	2, 14, 16, 18

Based on the table III.3, identifying the generic structure of descriptive text that can be found in items number 3, 8, 13, and 19. Identifying the topic of descriptive text that can be seen in items number 1, 6, 11, and 17. Identifying specific details containing of character in descriptive text was in items number 4, 7, 9, and 12. Identifying the the certain information in the descriptive text was in items number 5, 10, 15, and 20. Identifying the purpose of descriptive text was in items number 2, 14, 16, and 18.

#### **F. The Difficulties Items, Validity, and the Reliability of the Instrument**

##### **1. The difficulties items**

Before obtaining the validity of the test, the researcher should know the difficulty items of the instrument. The researcher gave try out for the students. To

obtain the difficult items of the instrument of the test, the researcher used the following formula:<sup>8</sup>

$$P = \frac{\sum B}{N}$$

P : proportion of correct answer = index difficulties

B : the number of correct answer

N : the number of students taking the test

If the proportion of correct is lower than 0.30, it means that the item is so difficult. If the proportion of correct is higher than 0.70, it means that the item is so easy. The items categorized in the level of so easy or so difficult ( $p < 0.30$  or  $p > 0.70$ ) should be changed. Therefore, the standard value of the proportion of correct is between 0.30 and 0.70. it is related to Sudijono's statement that can be seen in the table below:<sup>9</sup>

**Table III.4**  
**Index Difficulty Level of Instruments**

Proportion correct (p)	Item category
$P > 0.70$	Easy
$0.30 < P < 0.70$	Average
$P < 0.30$	Difficult

Based on the result of tryout of the instruments in this research, the researcher found out the proportion of correct of item as follows:

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<sup>8</sup> Hartono, *Analisis Item Instrumen*, (Bandung: Zanafa Publishing, 2010). P. 38.

<sup>9</sup> *Ibid.*

**Table III.5****Indicator I:**

**The students are able to identify the generic structure of descriptive text that they heard**

Indicator	The students are able to identify the generic structure of descriptive text that they heard				N
Item Numbers	1	6	11	17	20
Correct	11	11	13	10	
p	0.55	0.55	0.65	0.50	
q	0.45	0.45	0.35	0.50	

Based on the table above, the proportion of correct answer for the indicator of identifying the topic of descriptive text that they heard number 1 shows the proportion of correct 0.55. Item number 6 shows the proportion of correct 0.55. Item number 11 shows the proportion of correct 0.65. Item number 17 shows the proportion of correct 0.50. 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 of descriptive text that they heard are accepted.

**Table III.6****Indicator II:**

**The students are able to identify the topic of descriptive text that they heard**

Indicator	The students are able to identify the topic of descriptive text that they heard				N
Item Numbers	3	8	13	19	20
Correct	14	11	9	9	
p	0.70	0.55	0.45	0.45	
q	0.30	0.45	0.55	0.55	

The table above describes the proportion of correct answer the indicator of identify the generic structure of descriptive text that they heard. It consists of item number 3, 8, 13, and 19. Item number 3 shows the proportion of correct 0.70. Item number 8 shows the proportion of correct 0.55. Item number 13 shows the proportion of correct 0.45. 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 generic structure of descriptive text that they heard are accepted.

**Table III.7**

**Indicator III:  
The students are able to identify specific details containing of characters in descriptive text accurately**

Indicator	The students are able to identify specific details containing of characters in descriptive text accurately				N
Item Numbers	4	7	9	12	
Correct	11	10	12	8	20
P	0.55	0.50	0.60	0.40	
Q	0.45	0.50	0.40	0.60	

Based on the table above, the proportion of correct answer for the indicator of identifying the specific details containing of characters included in descriptive text listened accurately in item number 4 shows the proportion of correct 0.55. Item number 7 shows the proportion of correct 0.50. Item number 9 shows the proportion of correct 0.60. 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 level. So that, all items for the indicator of

identifying the specific details containing of characters included in descriptive text listened accurately are accepted.

**Table III.8**  
**Indicator IV:**  
**The students are able to identify the certain information in the descriptive text**

Indicator	The students are able to identify the certain information in the descriptive text				N
Item Numbers	5	10	15	20	20
Correct	10	12	11	9	
p	0.50	0.60	0.55	0.45	
q	0.50	0.40	0.45	0.55	

Based on the table above, the proportion of correct answer for the indicator of identifying certain information in the descriptive text in item number 5 shows the proportion of correct 0.50. Item number 10 shows the proportion of correct 0.60. Item number 15 shows the proportion of correct 0.55. And item number 20 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 certain information in the descriptive text are accepted.

**Table III.9**  
**Indicator V:**  
**The students are able to identify the purpose of descriptive text that they heard**

Indicator	The students are able to identify the purpose of descriptive text that they heard				N
Item Numbers	2	14	16	18	20
Correct	12	14	12	13	
p	0.60	0.70	0.60	0.65	
q	0.40	0.30	0.40	0.35	

The table above describes the proportion of correct answer for the indicator of identifying the purpose of descriptive text that they heard. It is consist of item number 2, 14, 16, and 18. Item number 2 shows the proportion of correct 0.60. Item number 14 shows the proportion of correct 0.70. Item number 16 shows the proportion of correct 0.60. 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 purpose of descriptive text that they heard 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 accepted.

## 2. Validity

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.<sup>10</sup>

In this research, the researcher 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

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<sup>10</sup>*Ibid*, p. 159

Arikunto claims the statement “a test is valid if the measure what it purposes to measure.”<sup>11</sup>

The researcher 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 researcher used correlation product moment. The formula is as follows:

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

where:

$r_{xy}$  = correlation product moment

$\sum xy$  = total x and y

$\sum X^2$  = X Quadrant

$\sum Y^2$  = Y quadrant

$$r_{xy} = \frac{1293}{\sqrt{(1235)(2125)}}$$

$$r_{xy} = \frac{1293}{\sqrt{2624375}}$$

$$r_{xy} = \frac{1293}{1619.99}$$

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<sup>11</sup> Arikunto, Suharsimi, *op. cit*, p. 65

= 0.80

According to Arikunto, the range of validity is as follows:<sup>12</sup>

**Table III. 10**  
**The Classification of Validity Range**

No	Classification	Score
1	Excellent	0.800-1.000
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 0.80. It means that the validity of the test is good.

### 3. The Reliability of the Instrument

Beside being valid, the instrument of a test is also required to be reliable. Reliability is the degree to which a test consistently measures whatever it is measuring.<sup>13</sup> A test is said to be reliable when the scores of the examiner is consistent on repeated measurement. Reliability has to do with the accuracy and precision of a measurement procedure.<sup>14</sup> Reliability is one of the most important things in measuring the instruments. To measure the reliability of this test the researcher used the Kuder Richardson (KR 20) formula. The formula is as follows:<sup>15</sup>

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<sup>12</sup>*Ibid*, p.75

<sup>13</sup>L.R. Gay and Peter Airasian. *Op. cit.*p.169.

<sup>14</sup>C.R. Kothari. *Loc. cit.*

<sup>15</sup>Sugiyono. *Statistika untuk Penelitian*, (Bandung: Alfabeta, 2012), p.359.

$$r_{ii} = \frac{k}{k-1} \frac{s^2 - \sum pq}{s^2}$$

Where :

$r_{ii}$  : Instrument reliability

k : the total numbers of items

$s^2$  : the total variance

p : the proportion of correct answer

q : the proportion of incorrect answer

The reliability of the test is categorized into five categories. It will be described as follows:<sup>16</sup>

Between 0.80 to 1.00 = Very High

Between 0.60 to 0.80 = High

Between 0.40 to 0.60 = Enough

Between 0.20 to 0.40 = Low

Between 0.0 to 0.20 = Very Low

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

$$r_{ii} = \frac{k}{k-1} \frac{s^2 - \sum pq}{s^2}$$

$$r_{ii} = \frac{20}{20-1} \frac{56.95 - 4.83}{61.78}$$

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<sup>16</sup>Suharsimi Arikunto. *Dasar-Dasar Evaluasi Pendidikan*. (Jakarta: Bumi Aksara, 2001),p.75.

$$r_{ii} = \frac{20}{19} \frac{56.95}{61.78}$$

$$r_{ii} = 1.05 \quad 0.92$$

$$r_{ii} = \mathbf{0.968}$$

Based on the result above, the reliability value is **0,968** categorized as very high category. It depicts that to know whether the test is reliable or not, the value of  $r_{ii}$  must be compared with r product moment. The value of  $r_{ii}$  must be higher than r table. From the calculation above the value of  $r_{ii}$  was 0.956. Then the significance of r table at 5% is 0.423. While the significance of r table at 1% is 0.537. So, it can be conclude that  $0.423 < 0.968 > 0.537$ . On the other word, the instrument was reliable because the value of  $r_{ii}$  was higher than r table.

### G. Technique of Analyzing Data

In analyzing the data, the researcher used t-test formula. According to Gay and Peter Airasian, t-test is one of the statistics tests used to determine whether two means are significantly different at a selected probability level.<sup>17</sup> The data were analyzed by using SPSS 16,0 version.

The t-table is employed to see whether there is a significant difference between the mean score of gain pre-post test in experimental class. The t-obtained value is consulted with the value of t-table at the degree of freedom (df) = (N1+N2) – 2 statistically hypothesis:

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<sup>17</sup> L. R. Gay and Peter Airasian. Loc. Cit, p, 512

Ha :  $t_o > t\text{-table}$

Ho :  $t_o < t\text{-table}$

Ha is accepted if  $t_o > t\text{-table}$  or there is significant difference of using the gossips game on students' listening comprehension of the tenth grade at MA Darul Hikmah Pekanbaru.

Ho is accepted if  $t_o < t\text{-table}$  or there is no significant difference of using the gossips game on students' listening comprehension of the tenth grade at MA Darul Hikmah Pekanbaru.

