

**CHAPTER III**  
**RESEARCH METHODOLOGY**

**A. Research Design**

The research is designed systematically in order to analyze the data of the respondents of the research on their students' speaking ability. The design of this research is an experimental research that focuses on quantitative approach. Experimental method is a method of research that can truly test hypothesis concerning with cause and effect relationship in the experimental research.<sup>1</sup> This research consists of two variables; the independent variable symbolized by "X" that is the use of discourse chains and the dependent one as "Y" which refers to students' speaking ability. In brief, the research can be designed by following table:

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

<b>Class</b>	<b>Pre-test</b>	<b>Treatment</b>	<b>Post-test</b>
<b>Control</b>	<b>O<sub>1</sub></b>	<b>-</b>	<b>O<sub>2</sub></b>
<b>Experiment</b>	<b>O<sub>3</sub></b>	<b>T</b>	<b>O<sub>4</sub></b>

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<sup>1</sup>Gay, L.R and Peter Airasian, *Educational Research Competencies for Analysis and Application*, (New Jersey: Prentice-Hall. Inc, 2000), p. 392.

## B. Location and Time of the Research

The research was conducted at the second year students of Madrasah Aliyah Dar El Hikmah Pekanbaru. This research was conducted from February to April 2012.

## C. Subject and Object of the Research

The subject of this research was the second year students of Madrasah Aliyah Dar El Hikmah Pekanbaru, while the object of this research was the students' speaking ability through discourse chains.

## D. Population and Sample

**Table III.2**  
**The Population and Sample of the Research<sup>2</sup>**

No	Class	Population	Sample
1	XI 1	30	<b>Experimental Class</b>
2	XI 2	30	<b>Control Class</b>
3	XI 3	30	
4	XI 4	30	
5	XI 5	30	
6	XI 6	30	
<b>Total</b>		<b>180</b>	<b>60</b>

From the table above, it can be seen that the sample of the research was 60 students. The sample of the research was divided into two groups. The

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<sup>2</sup>Source: (Document of Madrasah Aliyah Dar El Hikmah Pekanbaru Academic Year 20011/2012)

first group is experimental class, it consisted of 30 students and the other one was control class that consists of 30 students. The technique in taking sample used cluster sampling techniques. According to Sugiyono, the cluster technique was used to take sample if the object that will be researched is very wide. To decide which one the population that will be taken as sample, the sample is taken bases on the population that specified.<sup>3</sup>

#### **E. Technique of the Data Collection**

The writer used two kinds of instrument in this research, they were observation and test.

1. The observation sheet was used to know the writer activity in teaching speaking using discourse chains. To get data the writer was helped by English teacher of Madrasah Aliyah Dar El Hikmah Pekanbaru.
2. Test was used to find out whether there is or no significant effect of using discourse chains to increase students speaking ability. The kind of test was oral test. The test consisted of pre test and post test. The test was done by giving students some topics and then the students were ordered to make a dialogue in pair. The writer used the following rating sheet from to analyze students speaking ability. To measure the students' speaking ability can be used by the following aspects:<sup>4</sup>

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<sup>3</sup>Sugiyono, Prof. Dr, *Metode Penelitian Pendidika*, (Bandung: Alfabeta, 2008), p. 121.

<sup>4</sup>Haris. D.P, *Testing English as a Second Language*, (New York: Mc Graw Book Company), p. 1974.

**Table III.3**  
**The Component of Assessing Speaking Skills**

<b>Aspects</b>	<b>Score</b>	<b>Requirement</b>
<b>Pronunciation</b>	5	Have a view traces of foreign accent
	4	Always Intelligible, though one conscious of a define
	3	Accent problems necessitate concentrate listening and occasionally lead to miss understanding
	2	Very hard to understanding because of pronunciation problem. Muss frequently be asked to repeat
	1	Pronunciation problems so several as to make speech virtually unintelligible
<b>Grammar</b>	5	Makes few (if any) noticeable error of grammar or word order
	4	Occasionally makes grammatical and/or word-order error, which do not. However, obscure meaning
	3	Make frequently errors of grammar and word order which occasionally obscure meaning
	2	Grammar and word order errors make comprehension difficult, must often rephrase sentence and or restrict him to basic pattern
	1	Errors and grammar and word order so server as to make speech virtually unintelligibly
<b>Fluency</b>	5	Speech as fluency and effortless as that a native

		speaker.
	4	Speed of speech seems to be slightly affected by language problem.
	3	Speed and fluently rather strongly affected by language problem.
	2	Usually hesitant, often only silence by language limitation.
	1	Speech is also halting and fragmentary as to make conversation virtually
<b>Vocabulary</b>	5	Use of vocabulary idiom is virtually that of a native speaker.
	4	Sometimes uses inappropriate them and/or must rephrase ideas because of lexical inadequacies.
	3	Frequently uses wrong words, compensation somewhat limited because inadequate vocabulary
	2	Misuse use of word and very limited vocabulary make comprehension quit difficult
	1	Vocabulary limitation as extreme as to make comprehension vitally impossible
<b>Comprehension</b>	5	Appears to understand very without difficult.
	4	Understand nearly everything at normal speech although occasionally repetition may be necessary.

	3	Understanding most of what is said at slower than normal speech with repetition.
	2	Has great difficulty following what is said. Can comprehend only social conversation, spoken slowly and with frequent repetition.
	1	Cannot be said to understand even simple conversation English

**Table III.4**  
**Category and Students' Speaking Score**

Range Score	Score	Category
80-100	A	Very Good
70-79	B	Good
60-69	C	Enough
50-59	D	Less
0-49	E	Fail

#### **F. Techniques of the Data Analysis**

The technique used in this study is a comparative statistical analysis techniques, which compare the test results with the experimental class after application of the test results of the control class. Data analysis techniques will be performed in this study is a test "t". Test "t" is one of the statistical tests used to compare (distinguish) if two variables are the same or different. Before performing data analysis to test "t" there are two conditions that must be carried out, namely: homogeneity test and normality test.

## 1. Homogeneity Test

Homogeneity test is a test that should be performed to see both classes studied homogeneous or not, in this study a class that will be examined been tested homogeneity, by examining the data prior test scores by dividing the largest variance to the smallest variance, then the results were compared with F table. If the calculation is obtained  $F_h < F_t$ , then the sample is said to have the same variance or homogeneous. The formula as follows:

$$f_{\text{calculated}} = \frac{\text{the greater variance}}{\text{the lesser variance}}$$

## 2. Normality Test

Before analyzing the data with the test "t" then the data from the test should be tested normality using Liliefors, with the provision that if  $L_{\text{hitung}} < L_{\text{tabel}}$  the normal data.  $L_{\text{tabel}}$  value obtained from the test table Liliefors. Because the amount of data over the 30 respondents  $L_{\text{tabel}}$  value for 5% significance level is<sup>5</sup>:

$$L_{\text{tabel}} = \frac{0,886}{\sqrt{n}}$$

While  $L_{\text{hitung}}$  is the biggest price of  $| F(Z_i) - S(Z_i) |$ , where  $Z_i$  is calculated by the formula standard normal numbers:

$$Z_i = \frac{X_i - \bar{x}}{s}$$

$\bar{x}$  = average;

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<sup>5</sup> Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002), p. 466 - 467

s = standard deviation.

Value of F (Zi) is the area under the normal to the Z smaller than Zi. While the value of S (Zi) is the number of digits Z smaller or equal to Zi divided by the number of data (n).

### 3. Test t

Having tested the normality of data posttest, further to determine whether there is any difference then performed with different test test test t through the following formula<sup>6</sup>:

$$t_0 = \frac{Mx - My}{\sqrt{\left[\frac{SDx}{\sqrt{N-1}}\right]^2 + \left[\frac{SDy}{\sqrt{N-1}}\right]^2}}$$

Information:

$Mx$  = Mean Variabel X

$My$  = Mean Variabel Y

$SDx$  = Standar Deviasi X

$SDy$  = Standar Deviasi Y

$N$  = Jumlah Sampel

How to give the interpretation of the statistical test is performed by taking a decision with the following provisions:

- a. If t is equal to or greater than t then the hypothetical zero (Ho) is rejected, meaning that there are significant differences between the application of the method of inquiry and konevensional expository approach to math learning outcomes.

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<sup>6</sup> Hartono, *Statistik Untuk Penelitian* (Yogyakarta: LSFK2P, 2006), hlm. 193.

- b. If  $t$  is less than  $t$  then the hypothesis is accepted, it means there is no significant difference between the application that uses the methods of inquiry and conventional expository approach to math learning outcomes.