CHEPTER III

RESEARCH METHODOLOGY

In this chapter, the writer presented the procedures used in conducting the research. The writer intended to discuss the research design, subject of the study, data collection, and data analysis.

3.1.Research Design

According to Hilway, Hadi (1987) said that research design is an effort to discover, develop, and examine the truth of science using scientific method. In other word, research design is methodology to conduct the research in order to obtain information of the phenomena.

In this study, the writer chose an experimental research design because there will be control or experiment group as found in an experimental study. The experimental design used is randomised control group pre-test post-test design. In this design, there were two groups subject design that form as random. This randomised would support the assumption about the equivalent condition of two groups itself before the experiment is done. After that will find what group that get treatment (experiment group) and what group that doesn't get treatment (control group).

The planning of randomised experimental

Table I. Control group pre-test and post-test design.

Group	Pre-test	Treatment	Post-test
Experiment group	T1	X	T2
Control group	T1	-	T2

3.2. Population and Sample

The population of this research was the students of playgroup at AL-WALIDA Bungah Gresik and the sample of the research is the student in 3 – 4 years old of AL-WALIDA Playgroup, which the total of the students is 28 students.

3.3. Instrument

The instrument of the research is the equipment that is used by the researcher to collect the data.

In this research, the writer used test as the instrument to collect the data in which it will be explained below.

The test in AL-WALIDA playgroup Bungah Gresik would be done in two months, on April and May. The class that will be observed is class A and class B.

3.3.1. Test

Test is a set of questions or stimulation that is given to the subject or respondent to get the answer or response in which it can be used as the basic to measure the ability, skill, knowledge, intelligence, and talent which is owned by individual or group.

In this study, the writer used questions to measure children's ability in English. Now there are some items that is formulated based on indicator as in the table follow:

Table 2. Indicator and research instrument

No	Indicator	Items
1.	Kinds of differentiation	The teacher provides some paper color (red, yellow, blue), fruits toys made from plastic (banana, apple, grape), animals toys (cat, duck, rabbit), dolls (mother, father, grand mother/father), and some picture part of face (eye, nose, ear). Each item consists of three things. All the toys or things based on the group of thing.
2.	Vocabulary Give a name to something that look like thing	The teacher provides color paper (red, yellow, blue), fruits toys made from plastic (banana, apple, grape), animals toys (cat, duck, rabbit), dolls (mother, father, grand mother/father), and some picture part of face (eye, nose, ear) then subjects are asked to mention the name of each picture/toy.
3.	Giving name by remembering	The teacher provides color paper (red, yellow, blue), fruits toys made from plastic (banana, apple, grape), animals toys (cat, duck, rabbit), dolls (mother, father, grand mother/father), and some picture part of face (eye, nose, ear). Each

		item consist of three things. Three toys are located in front of the subject and each of thing should be memorized by subject. After that the subject is asked to close his/her eyes while one thing are hidden. Then the subject is asked to mention the missing thing of the whole things.

3.4. Data Collection

Data collection is part of one that is important in research process. How far the data that collected can reflect respondent or object situation that real, it will depend on the method that used in the research. The technique that is used in data collection of this research is in the form of given test that consist of two parts.

Those are pre-test and post-test.

3.4.1. The procedure to collect the data

In scoring of this research, every item given score (x) suitable with correct/true answer, then score (x) that reached by each individual times with weight every items suitable with level of difficulty. Weight 5 for difficult score, 4 for middle item and 3 for easy item. (Arifin, 1988:88)

Table 3. The value details

No item	Level of difficulty	Respond	X	B	XB	Explanation
1.	Easy	Correct	10	3	30	Every item has 5 answer, with every answer get 2

2.	Middle	Correct	10	4	40	scores if Correct and get
3.	Difficult	Correct	10	5	50	0 if wrong.
$\sum$				12	120	

Score formula : $\dfrac{\sum XB}{\sum B}$

Explanation:

X   : score of every item

B   : weight that suitable with level of difficulty of each item

So, the maximum score that get is : $\dfrac{120}{12} = 10$

Table 4. The process of research implementation

No	Program	Activity	Group
1.	Group determination	Divide two group randomly	All student
2.	Pre-test	Measure by English ability test	Experiment group Control group
3.	Treatment	• Playing educative games • Observe	Experiment group
4.	Post-test	Measuring by the same test in pre-test	Experiment group Control group

3.5. Data Analysis

For hypothesis to examine all of the data subject research in
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measuring English ability children by using educative game, so using t-test
is for analysis inter-group using SPSS program. Independent sample t-test
and for in-group using paired sample t-test. (Winarsunu: 2002)

Using t test (inter group)

$$t_h = \frac{\overline{X}_A - \overline{X}_B}{S_{gab}\sqrt{\dfrac{1}{n_A} + \dfrac{1}{n_B}}}$$

$t_t = t_1 - \frac{1}{2}\alpha$, with $df = (n_A + n_B - 2)$

$$S^2 gab = \frac{(n_A - 1)\,S_A{}^2 + (n_B - 1)\,S_B{}^2}{n_A + n_B - 2}$$

Explanation :

$\overline{X}_A$ = Arithmetic on the average of A sample

$\overline{X}_B$ = Arithmetic on the average of B sample

n_A = total of A sample

n_B = total of B sample

S_{gab} = standard deviation combination

$S_A{}^2$ = variant A sample

$S_B{}^2$ = variant B sample

S^2 = combination variant

Or with computer assistance SPSS program: procedure independent sample T-test used for examine do two samples that no connection come from the population that have same on the average or didn't as significance.

Using t test (in group)

$$t = \frac{\overline{D}}{S_D / \sqrt{n}} \quad , D_1 = A_1 - B_1, A_2 - B_2, .., D_n = A_n - B_n$$

$$S_D{}^2 = \frac{n \in D_i{}^2 - (\in D_i)^2}{n(n-1)} \quad , \quad D = \frac{\in \overline{D}_i}{n}$$

$$t_t = t_1 - \tfrac{1}{2}\,\alpha, \text{ with } df = n - 1$$

Or with SPSS program assistance: paired sample t-test, used to examine do two samples that connect or from a pair come from the population that have same mean.