

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter contains the method of the study, data collecting procedure, population and sample, schedule of the research that is needed, instrument of the research, and procedure of the research and data analysis.

#### **3.1 The Method of the Study**

This study uses quasi experimental design. Trochim (2006) states that a quasi-experiment is one where the treatment variable is manipulated but the groups are not equated prior to manipulation of the independent variable. So, by using this design, a randomized pretest-posttest design is feasible especially when dealing with human subjects (who do not like to be told what treatments they are or are not going to get) in the field settings (Trochim, 2006).

In this study, two groups from SD PN Setiabudhi students at the 4th grade are selected, one group as the experimental group and other group as a control group. This classes (4A and 4B) are selected randomly. Besides, this classes also are choosed because both of them have the same knowledge and good ability in English.

Additionally, there are some treatments that will divide into two cycles: every cycles will contains 2 meetings (two meetings by using treatments like Little Shop of Treasures game, and another treatments with Hangman game). The treatments are given only to the experimental group, while the control group does not receive treatment and will learn English by using textbook from the school.

Hatch and Farhady (1982: 20) says, "The experimental group received treatment while the control group did not." After some treatments, there will be a posttest in the last meeting. Both of experimental and control group receive a posttest.

The formula can be represented as follows:

$G1 \times T2$   
 $G2 \times T2$  where:  
G1 = experimental group      G2 = control group  
T2 = posttest      X = treatment

### 3.2 Data Collecting Procedures

There are several steps to do the research:

- ✓ Conducting library study to find out the relevant literatures.
- ✓ Conducting preliminary study.
- ✓ Constructing instruments.
- ✓ Conducting interview.
- ✓ Conducting field observation.
- ✓ Analyzing the data from interview and observation.
- ✓ Interpreting the data from interview and observation.
- ✓ Concluding the research.
- ✓ Writing the research reports.

In the first meeting before treatment, there are try out and pretest. Try out aims to investigate validity and reliability of the test before collecting the data of the study (McMillan and Shumacher, 2001), while pretest is given to check how

far the students' understanding about knowledge and English skills (listening, speaking, reading, writing) that every student in both of classes (4A and 4B) have before treatment.

### **3.3 Population and Sample**

Sampling is that part of statistical practice concerned with the selection of a subset of individual observations within a population of individuals intended to yield some knowledge about the population of concern, especially for the purposes of making predictions based on statistical inference. Sampling is an important aspect of data collection.

Adèr Mellenbergh & Hand (2008) says that the three main advantages of sampling are that the cost is lower, data collection is faster, and since the data set is smaller it is possible to ensure homogeneity and to improve the accuracy and quality of the data.

This study is conducted to the young learners (9 to 10 years old) at the 4<sup>th</sup> grade in SD PN Setiabudhi Bandung especially 4A and 4B. The classes are selected randomly, because both of them have the same knowledge and good ability in English.

Population of the research are 50 students (25 students from 4A will be an experimental group and 25 students from 4B will be a control group).

### 3.4 Schedule of the Research

Schedule of the research for this study is:

Date and Time	Time Allocation	Activity
October 18th, 2010	1 hour	Try out, interview to the English teacher and 10 students at the 4th grade in SD PN Setiabudhi
Oktober 21st, 2010	1 x 35'	Pretest (Both of 4A and 4B class)
Oktober 25th, 2010	2 x 35'	Cycle 1 at the 1st meeting (Treatment by using Little Shop of Treasures game)
Oktober 28th, 2010	2 x 35'	Teaching manually by using textbook from the school in control group
Oktober 29th, 2010	2 x 35'	Cycle 1 at the 2nd meeting (Treatment by using Little Shop of Treasures game cont'd)
Nopember 2th, 2010	2 x 35'	Teaching manually by using textbook from the school in control group
Nopember 15th, 2010	2 x 35'	Cycle 2 at the 1st meeting (Treatment by using Hangman game)
Nopember 19th, 2010	2 x 35'	Teaching manually by using textbook from the school in control group
Nopember 22nd, 2010	2 x 35'	Cycle 2 at the 2nd meeting (Treatment by using Hangman game cont'd)
Nopember 26th, 2010	2 x 35'	Teaching manually by using textbook from the school in control group

December 6th, 2010	1 x 35'	Posttest (Both of 4A and 4B class)
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Table 3.1 Schedule of The Research

### 3.5 Instruments of the research

- ✓ Tryout and interview. These try out and interview were done at the first time the writer met the English teacher and his students at the 4th grade.

Try out aims to investigate validity and reliability of the test before collecting the data of the study (McMillan and Shumacher, 2001). Try out contained of 30 multiple questions, it was done before pretest. Every questions in try out were taken from several theme such as fruits, vegetables, animals, job, etc.

Moreover, the interview was given to both of English teacher and 10 students. There were 14 questions in interview to the English teacher, and 15 questions in interview to the students. The material interview will focus on the application of teaching learning process based on educational games and its process in the class, and teacher and students' opinion about the implementation of games in teaching learning process. Besides, this interview was intended to answer the research questions.

Table 3.2 Interview to the English Teacher and Students at the Fourth Grade

#### Questions

*Apakah dalam proses belajar mengajar Bapak/Ibu menggunakan silabus?*

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A. Ya      B. Tidak

Apakah dalam proses KBM Bapak/Ibu selalu berinteraksi dengan siswa?

Jika iya, apakah mereka memberikan respon aktif terhadap Bapak/Ibu?

Jika tidak, mengapa?

Apakah Bapak/Ibu menggunakan teknik tertentu dalam mengajar?

Jika iya, teknik apakah yang digunakan?

Mengapa Bapak/Ibu menggunakan teknik tersebut?

Apakah Bapak/Ibu menggunakan media dalam mendukung kelancaran proses belajar-mengajar?

Jika iya, media apa saja yang Bapak/Ibu gunakan?

Bagaimana cara Bapak/Ibu menggunakan media tersebut?

Apakah Bapak/Ibu menggunakan media games dalam proses KBM?

Jika iya, jenis games apa yang Bapak/Ibu gunakan?

Mengapa Bapak/Ibu menggunakan game tersebut?

Apakah Bapak/Ibu merasa penggunaan game tersebut lebih efektif dan dapat meningkatkan kemampuan siswa dalam berbahasa?

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Siapa namamu?

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*Kelas berapa?*

*Apakah kamu senang belajar bahasa Inggris?*

*Jikaya, kenapa?*

*Siapa nama Bapak/Ibu guru bahasa Inggrismu?*

*Kamu sukagame tidak?*

*Jikaya, game apa yang kamu sukai?*

*Bapak/Ibu guru pernah menggunakan game tidak saat belajar bahasa Inggris?*

*Jikaya, game apa saja?*

*Hebohtidak saat bermain game-nya?*

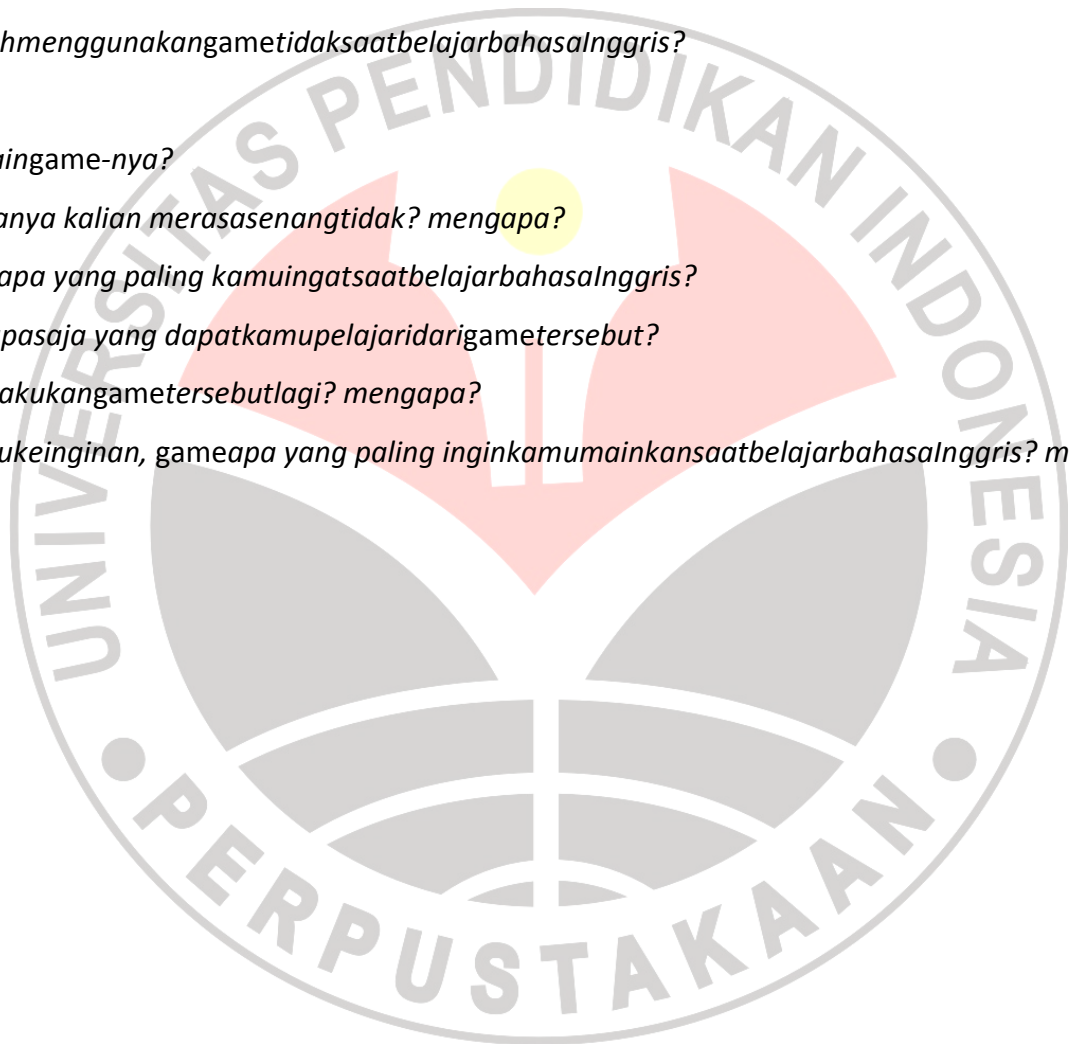
*Saat main game, biasanya kalian merasa senang tidak? mengapa?*

*Tolong ceritakan game apa yang paling kamu ingatkan saat belajar bahasa Inggris?*

*Setelah game selesai, apa saja yang dapat kamu pelajari dari game tersebut?*

*Apakah kamu ingin melakukan game tersebut lagi? mengapa?*

*Jika kamu diberikan satu keinginan, game apa yang paling ingin kamu mainkan saat belajar bahasa Inggris? mengapa?*



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✓ Class Observation.

In this activity, the researcher will observe all activities in teaching learning process by using games as media. Moreover, the researcher also



will write every aspects that are related with teaching learning process in the class such as teaching material, class activity, teaching model based on games, assesment, and evaluation. The results of observation were hoped to give information and clear potrait of teacher and students performance in the class by using game as media. Some activities in class observation include:

- ✚ Pretest. Pretest was conducted to identify whether the experimental and control group have relatively the same ability to comprehend every English skills for every students (young learners). Besides, pretest was given to the two groups before treatment in order to find out the basic knowledge from the students.
- ✚ Treatment. Treatment means the activity that is given in teaching English by using Little Shop of Treasures and Hangman games as media. This treatment was divided into two cycles, and every cycles contains of 2 meetings. In the first cycle, the researcher will use 2 meetings (both of two meeting will use Little Shop of Treasures as treatments), and in the second cycle, the researcher will use 2 meetings, too (by using Hangman game as treatments).
- ✚ Posttest. Posttest was conducted after several treatments which aimed to know whether games can improve the student's ability (young learners) in mastering English skills especially vocabulary. Additionally, posttest was given to the control groups in the last program.



### 3.6 Procedure of the Research

This study uses quasi experimental design, so that the data will saturate and portray clearly. This study has several stages, they are:

- The data from interview with English teacher at students at the 4th grade such as teacher and students' response about teaching learning model by using games as media and its utility to improve learning output will be described clearly by using table and chart.
- Pretest on October 21st, 2010. This pretest was given to find out the validity, reliability and practicality.

a. Try Out Test

This study does not apply any standardized test, but designed a new test. Dealing with the new established test, as proposed by McMillan & Schumacher (2001), try out test is needed to investigate validity and reliability of the test before collecting the data of the study.

The try out test consists of 30 items. This test is administered on October 18th, 2010 in SD PN Setiabudhi. According to McMillan & Schumacher (2001), the quality of an instrument used in a study will affect the confidence of findings. Therefore, some considerations to find out the quality of the used instruments need to be observed.

b. The validity of the test

Fraenkel&Wallen (1990:379) suggests that validity refers to the appropriateness, meaningfulness, and usefulness of the conclusion based on the data collected. The procedures are as follows:

- Arranging the pretest scores from the highest to the lowest score.
- Determining the difficulty level of each items with the following formula:

$$P = \frac{B}{JS} \quad P = \text{the difficulty index}$$

B= the item that could be answered by the testee

JS= the testee

Difficulty index	Interpretation
0.00 – 0.30	Difficult
0.30 – 0.70	Good
0.70 – 1.00	Easy

Table 3.3 Criteria of the difficulty index

- Determining discrimination index with the following formula:

$$D = \frac{BA - BB}{1/2 JS}$$

D = Discrimination Index

BA = Number of Right Answer From Upper Group

BB = Number of Right Answer From Lower Group

JS = Number of All Subjects

Discrimination Index	Interpretation
0.00 – 0.20	Poor
0.20 – 0.40	Satisfactory
0.40 – 0.70	Good
0.70 – 1.00	Excellent

Table 3.4 Criteria of Discrimination Index

- Then, comparing the data from  $T_{obs}$  with  $T_{table}$  on the significant level 95% with the degrees of freedom. The data becomes valid if  $T_{obs}$  more than  $T_{table}$ , and not valid if  $T_{obs}$  less than  $T_{table}$ .

c. Test reliability

Reliability refers to the consistency of the conclusion. To check this reliability, the Pearson Product Moment Correlation is used.

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{(\sum X^2 - \frac{(\sum X)^2}{N})(\sum Y^2 - \frac{(\sum Y)^2}{N})}}$$

Where  $r$  is Pearson Product Moment correlation coefficient values,  $N$  is number of students who are analyzed,  $x$  is students vocabulary score (first variable),  $y$  is students summative score (second variable). Afterwards, every item in the instrument was also calculated by using Pearson Product formula to seek correlation index for every items through correlating every single item in instrument ( $x$ ) with total score of instrument ( $y$ ).

d. Testing the hypothesis

Null hypothesis that would be tested in this study states the following statement.

“There is no effective result of using Hangman and Little Shop of Treasures games in mastering English vocabulary to young learners.”

The formulation of this null hypothesis is as follows.

$$H_0 : \mu_{\text{pretest}} = \mu_{\text{posttest}}$$

It proposes that there would be no effective result of using Hangman and Little Shop of Treasures games in mastering students' vocabulary.

If the score scatter charts of those test overlap and  $t$  value calculated by  $t$ -test equation is less than critical  $t$  in  $t$  distribution, it means the null hypothesis is accepted, and the treatment does not work.

In contrast, if the  $t$  obtain value is greater than critical  $t$ , which is decided by observing degree of freedom and the level of significance desired, it implies that the observed difference in means is greater than the use of games works as well. For that reason, the null hypothesis could be rejected.

- Every treatment consists of a game and activity that are packed in a creative and various formulated instructional process. Each instructional process lasted for about 70 minutes.

Besides, there are the differences between teaching learning activity in experimental and control group.

a) Teaching learning activity in experimental group are:

- Pre-activity

- The teacher comes to the class. As opening, teacher greets the students.
- Reviewing the previous materials and check the students' understanding about the topic.

- Whilst activity

- The teacher is mentioning the topic and asks several questions related to the topic.
- Reviewing the topic.
- Dividing the students into several groups.
- Teacher is giving the instruction about the lesson by using Little Shop of Treasures and Hangman games as media in teaching English.
- While the activity is being hold, the students must stay with their group. They will work together and compete with the other group. The teacher hereis only as facilitator and controller.
- In the end of the activity, there will be evaluation.

- Post activity

- The teacher is reviewing the materials about what they have learned before.

- Teacher is allowing the students to ask several questions related to the topic.
  - Teacher gives simple homework that is related with the topic.
- b) Actually, there is the difference between teaching learning activity in experimental group and in control group, they are:
- Pre-activity
    - The teacher comes to the class. As opening, teacher greets the students.
    - Reviewing the previous materials and check the students' understanding about the topic.
  - Whilst activity
    - The teacher is mentioning the topic and asks several questions related to the topic.
    - Reviewing the topic.
    - Giving the materials to the students.
    - The teacher and their students together discuss one material and teacher asks if there are some difficulties in learning English such as in vocabulary. Then, the teacher is explaining the difficulties.
    - In the end of the activity, the students are doing the exercise.
  - Post activity

- The teacher is reviewing the materials about what they have learned before.
- Teacher is allowing the students to ask several questions related to the topic.
- Posttest on December 6th, 2010
- Data analysis

To verify the hypothesis of the research, t-test was chosen. T-test has primary purposes to see whether the mean score of two groups differ to a statistically significant degree. This study works with t-test for independent sample to compare both chooses.

- Homogeneity Variance
- Calculating t-test

After the treatment is given to the experimental class, posttest score of both classes was taken. Then those score are calculated by using t-test formula for two independent sample to seek the difference between the mean of both classes, so that the significance of the result is appeared.

To calculate the results, t-test formula which is proposed by Kranzler and Morsound is used. There are four steps to calculate the result:

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$



### T-test of independent means

$$t = \frac{M_1 - M_2}{S_{DM}}$$

$$S_{DM} = \sqrt{\left[ \frac{(N_1 - 1)(s_1^2) + (N_2 - 1)(s_2^2)}{N_1 + N_2 - 2} \right] \left[ \frac{1}{N_1} + \frac{1}{N_2} \right]}$$

$$s = \sqrt{\frac{\sum x^2}{N}}$$

$$df = N_1 + N_2 - 2$$

Where:

M = mean

SDM = Standard error of the difference between means

N = number of subjects in group

s = Standard Deviation of group

df = degrees of freedom

### 3.7 Data Analysis

There are some steps in analyzing the data such as follows:

- a. Calculating the data obtained from pretest and posttest.
- b. Describing the data by using SPSS 16 for Windows Program.
- c. Proposing the hypothesis.
- d. Analyzing the data by using SPSS 16 for Windows Program.
- e. Selecting the level of significance ( $p$ ).
- f. Observing  $t$  critical with  $df = N-1$  and  $p = 0.05$

- g. Determining whether the null hypothesis should be rejected or retained by comparing the  $t$  obtain and  $t$  critical.
- h. Writing the findings.
- i. Discussing the findings.

