CHAPTER III

RESEARCH METHOD

3.1 Research Design

This study employs experimental research design to test hypotheses by reaching valid conclusions whether there is significant influence of English classroom management for students' achievement. The kind of this research method is quasi experimental. It belongs to part of an experimental design. In quasi experimental design, the population is not definite to be homogeneous. In other word, the population could be heterogeneous.

In conducting the study, a quasi-experimental design with non randomized pretest and posttest *(table 3.1)* was applied. This design includes an existing group of participants who receive a treatment and another existing group of participants to serve as a control or comparison group. Participants are not randomly assigned to conditions, but rather are assigned to the treatment or control conditions along with all the others in their existing group. The researcher use this design because it would not be feasible and need much time to change the classification of the classes which were established by the school. The headmaster also did not allow the researcher to conduct it in school was the main reason why the researcher used this design.

The research design

(Nonrandomized Pre-test and Post-test)

Table III.1

Group	Pre-test	Treatment	Post-test
Control	+	-	+
Experiment	+	+	+

To apply this design to our work experience study, the two groups were given different treatments or control conditions which was conducted 8 times of teaching. Both experimental and control group get pretest at first to measure the first ability in English classroom. The lower scores from that class will be experimental group and get treatments, whereas the control group was needed for comparison purposes without get treatments. The treatment was given to measure and proven the influence of English classroom management for students' achievement. *(see appendix 3)*

In this study, the experimental group will get treatments about some elements in classroom management. Those elements only focused on physical environment include of seating arrangement, the classroom decoration and also students' grouping in learning methods. After that, the researcher also gives posttest to analyze the result of getting treatment during the research in experimental group and comparison with the last result in control group.

The experiment design of this study by using t-test analysis that analyze the impact between variables x (control group) and y (experimental group) based on differences in learning outcomes giving treatment. So, in the present study, the researcher divides the activities into 5 steps includes of: (1) giving pretest about English subject for experimental and control group; (2) giving treatment for the experimental group; (3) doing posttest with English subject for experimental and control group as the result to determine the students' achievement; (4) analyzing of pre- and post test scores whether

there is difference between two groups in the first and the last test of English subject; and (5) finding the conclusion about this study.

3.2 Population and Sample

The target population for this present study is a whole of the students in MI Banat Manyar Gresik, whereas the accessible population is students on 4nd grade. The researcher chooses that population based on the result of the observation. In that school, the teacher has difficulties to manage their students in the classroom. It caused the condition of classroom often not conducive and so crowded. The students not too interest with English lesson and also feel bored with the strategy who was the teacher taught. Moreover, the lack of facilities and decoration in the classroom made the classroom so monotonous.

In addition, the reason of the researcher chooses 4th grade level is because that level has lower achievement than other grade level in the school. The researcher decided to not take a sample because the total of that population quite small. So this study uses a whole of that population to be participants.

Total of the participants are two classes include of 50 students, which divided into experimental group and control group. The participants in this study amount 25 students in the experimental group will be taught by the researcher and 25 students in control group will be taught by the teacher.

3.3 Research Instrument

The researcher uses pre-test and post test as instruments of this study. The pre-test is used to measure the initial differences ability for students in experimental and control group in English lesson, whereas the post test is used to measure the influence of the

treatment given. The pre-test and post test includes 25 questions which all of them are multiple choice.

However, before the test was used, the researcher needed to try the instrument out to know the validity and the reliability of the instrument. The test that was tried out by the researcher consists of 60 multiple-choices items where 30 multiple-choice item for pre-test and 30 multiple choice items for post-test. The items were tried out to the fourth grade of MI Miftahul Ulum. That school had the same characteristic as MI Banat Manyar as follow: (a) the minimum standard determined in English subject at the fourth grade is 60; (b) the average of value in final examination of first semester at the fourth grade was about 70; (c) the school placed English as local content which has 2 lesson hours every week; and (d) the students of the fourth grade did not take English course outside the school.

3.3.1 Validity of the instrument

Validity is a measure to indicate the level of validity an instrument. The instrument called valid if it has validity.

In this study, before conducting pre-test and post-test, both of them should be tried out in terms of its validity and reliability. In order to check the validity of the test, the researcher did it into two steps. Those were checking content validity and construct validity. First, to determine contents validity, the researcher asked the English teacher help to check the instrument validity and also based on the English curriculum and syllabus.

Since content validity asks if the test content matches the content of the course of study (Bachman, 1990), what teachers could do is to match the course objectives and

syllabus design with the test items. For this study, the content of the test matched with

the course objective and syllabus design. It stated at the curriculum (KTSP 2006)

design for all of the skill in English lesson (speaking, listening, reading and writing).

Standar Kompetensi: Mendengarkan

5. Memahami instruksi sangat sederhana dengan tindakan dalam konteks kelas

Kompetensi Dasar:

5.2 Merespon instruksi sangat sederhana secara verbal.

Standar Kompetensi: Berbicara

6 Mengungkapkan instruksi dan informasi sangat sederhana dalam konteks kelas

Kompetensi Dasar:

6.4 Bercakap-cakap untuk meminta/memberi informasi secara berterima yang melibatkan tindak tutur: meminta ijin, memberi ijin, menyetujui, tidak menyetujui, menyangkal, dan meminta kejelasan.

Standar Kompetensi: Membaca

7 Memahami tulisan bahasa Inggris sangat sederhana dalam konteks kelas.

Kompetensi Dasar:

7.2 Memahami kalimat dan pesan tertulis sangat sederhana.

Standar Kompetensi: Menulis

8 Mengeja dan menyalin tulisan bahasa Inggris sangat sederhana dalam konteks kelas.

Kompetensi Dasar:

8.2 Menyalin tulisan bahasa Inggris sangat sederhana secara tepat dan berterima seperti ucapan selamat dan pesan tertulis.

From the curriculum design above, the researcher used it as post-test items. The

test consists of 25 items which includes of those standard competences for all skill

(listening, speaking, reading, and writing) in written form. Moreover, in each item

belong to the topic which was done the treatment in experimental and control group

before. The topic just about two for eight meeting, it is about *the weather and the seasons and also the adjectives.*

The curriculum designs which belong to post-test items are in standard competence in second semester only. For each skill, the items are taken from two of basic competences which included *5.1* and *5.2* point in listening skill. About *6.4* point which included two sub-basic competences in speaking skill. For reading skill, there are two point included *7.1* and *7.2* point in basic competences. And also two point about *8.1* and *8.2* in writing skill. *(See appendix 4 & 5)*

Second, to define the construct validity, the researcher used SPSS version 16.0 to compute descriptive statistics. The instrument validity was examined by analyzing the item. The process of the calculation was name as validity index. The index validity of each item was interpreted to determine whether the pre-test and post-test was good or not. The researcher used SPSS version 16.0 with correlation product moment formula. The formula used in testing the validity is:

$$\text{rxy} = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)2\}\,(N\sum Y2 - (\sum Y)2)}}$$

NOTE:

rxy   : the coefficient of correlation between X and Y variable or   validity of each item,

N   : the number of students/subject participating in the test,

X   : the sum of X scores,

Y   : the sum of Y scores,

$\sum Y$: the sum of total score for each student,

$\sum X$: the sum of score in each item,

$\sum XY$: the sum of multiple score from each student with the total score in each item,

$\sum X2$: the sum of the square score in each item,

$\sum Y2$: the sum of square total score from each student.

Each item is determined by using these following categorizations:

< 0.3 : is difficult

$0.3 - 0.7$: is medium

$0.7 - 1$: is easy

    Based on the result of validity of instrument, the researcher determined the validity of item by saw *Corrected Item-Total Correlation* Column. The item which had the value under 0,3 was considering as a bad item. It meant that it had to be rejected. *(see appendix 6 & 7)*

    Based on those consideration and interpretation of the data, the researcher found that 26 items were valid, whereas 4 items were invalid in pre-test. The numbers of items were not valid included number 11, 18, 21, and 24. Those numbers were got the values under of validity standard ($< 0,3$).

<div align="center">Table III.2</div>

Number of Item	Validity		Number of Item	Validity	
	Value	**Category**		**Value**	**Category**
1	0.450	**Medium**	16	0.345	**Medium**
2	0.360	**Medium**	17	0.443	**Medium**
3	0.403	**Medium**	18	0.162	**Difficult**
4	0.385	**Medium**	19	0.440	**Medium**
5	0.382	**Medium**	20	0.430	**Medium**
6	0.485	**Medium**	21	-0.336	**Difficult**
7	0.433	**Medium**	22	0.413	**Medium**
8	0.550	**Medium**	23	0.456	**Medium**
9	0.477	**Medium**	24	-0.183	**Difficult**
10	0.541	**Medium**	25	0.504	**Medium**
11	-0.039	**Difficult**	26	0.365	**Medium**
12	0.492	**Medium**	27	0.389	**Medium**
13	0.533	**Medium**	28	0.504	**Medium**

| 14 | 0.521 | **Medium** | 29 | 0.389 | **Medium** |
| 15 | 0.456 | **Medium** | 30 | 0.508 | **Medium** |

In the same case, the researcher also found that 27 items of post test were valid

and 3 items were invalid. So the researcher decided to use 25 items in each pre and

post test as the instruments of this study.

Table III.3

Number of Item	Validity		Number of Item	Validity	
	Value	**Category**		**Value**	**Category**
1	0.598	**Medium**	16	0.464	**Medium**
2	0.481	**Medium**	17	0.397	**Medium**
3	0.462	**Medium**	18	0.173	**Difficult**
4	0.265	**Difficult**	19	0.493	**Medium**
5	0.644	**Medium**	20	0.342	**Medium**
6	0.398	**Medium**	21	0.225	**Difficult**
7	0.384	**Medium**	22	0.419	**Medium**
8	0.595	**Medium**	23	0.364	**Medium**
9	0.652	**Easy**	24	0.358	**Medium**
10	0.644	**Medium**	25	0.124	**Difficult**
11	0.523	**Medium**	26	0.523	**Medium**
12	0.523	**Medium**	27	0.452	**Medium**
13	0.538	**Medium**	28	0.499	**Medium**
14	0.358	**Medium**	29	0.083	**Difficult**
15	0.489	**Medium**	30	0.463	**Medium**

3.3.2 Reliability of the instrument

Reliability of pre-test and post test will be done after the researcher get those

tests. To see the consistency of the test score, the researcher tried the instrument out

twice. The reliability of test is characteristically presented by means of reliability

coefficient or the standard error of measurement. To define reliability of the test in

order to find out the stability of the test, the researcher used SPSS 16.0 with the

formula:

$$r_{XX} = \frac{K.Sx2 - x(k-x)}{Sx2\ (k-1)}$$

where $$S = \sqrt{\frac{\Sigma\, F\chi}{n-1}}$$

$$\chi = X - \bar{X} \qquad \bar{X} = \frac{FX}{n}$$

K = total item that accepted

n = total of students that followed the test

X = total of the correct answer

F = total of students who got the particular score in X

FX = F x X

with the criteria:

$0.0 \leq rkk < 0.20$	is the lowest reliability
$0.20 \leq rkk < 0.40$	is the low reliability
$0.40 \leq rkk < 0.60$	is the quite reliability
$0.60 \leq rkk < 0.80$	is high reliability
$0.80 \leq rkk < 1.00$	is highest reliability

In this study, the reliability of test was taken from the test items which were valid. The reliability of a test referred to consistency of the test score. The researcher concerned in *Cronbach's Alpha* value. In *Cronbach's Alpha if Item Deleted* column, if the value is above *Crobach's Alpha* value, the item had to be rejected. In the first try-out, the researcher found that whole items pre-test items had highest reliability.

Table III.4

Reliability Statistics

Cronbach's Alpha	N of Items
.853	30

In addition, the researcher conducted the second try-out to see the consistency of item reliability. The result of second try-out in post-test showed that those items were reliable and had highest reliability. Therefore, the 25 of items in each test could be used as research instruments.

Table III.5

Reliability Statistics

Cronbach's Alpha	N of Items
.886	30

3.4 Data Collection

To collect the data, the researcher conducted the following procedures: For the first, after this proposal is accepted, the researcher made English test for pre and post test which both of them consist of 30 multiple choice items. The researcher tried it out to the fourth grade in MI Miftahul Ulum and also analyzed the validity and the reliability of those instruments.

The second is the researcher select the subject in MI Banat on 4th grade and divided into two groups as experimental and control group. Then, both of those groups are given pre-test as first data to measure the initial differences ability in English lesson.

For the third, the researcher gives the treatment to the experimental group which was explained in research design above and control group as usual by the own teacher as comparator. The researcher plans to conduct as follow: *(see appendix 15).*

The fourth, both of them experimental and control group will be conducted post-test as a result to measure the influence of the treatment given by the researcher. The researcher also analyzes the score of experimental and control groups by using SPSS version 16.0. Finally, the researcher will write down the results of statistical calculations, interpretations and conclusions of this study. The general schedule of this study can be seen in appendix. *(see appendix 2)*

3.5 Data Analysis

After collecting the data, the next step was to analyze the data by using statistical analysis. The researcher transcribed the students' test in written form and then scored the result of test. The researcher analyzed the data by using Independent sample t-test because the subjects were small and the groups were independent. The t-test independent sample is carried out to determine the significance influence of English classroom management for students' achievement.

Assumption for the Independent t-test are: (1) independence: observations within each sample must be independent (they do not influence each other); (2) amount of subject in every group are same or neared; (3) normal distribution: the scores in each subjects must be normally distributed and (4) homogeneity of variance: the two sample must have equal variances (the degree to which the distributions are spread out is approximately equal). The steps of analyzing the result were:

3.5.1 Normality test

The purpose of this test was to find out whether the data gained from pretest and posttest of experimental and control group were normal distribution. The Ho (null hypothesis) will be rejected, if P-value (sig) $< \propto$, which ($\propto = 0,05$).

In analyzing the data, the researcher used Kolmogorov-Smirnov test in SPSS version 16.0. The pretest score of experimental and control groups were analyzed by using SPSS version 16.0 with the following procedures. The first procedure was inserting the pretest data of both experimental and control groups using the data view. The second procedures were going to the **Analyze Menu**, selecting **Descriptive Statistic**, choosing **Explore**. The last procedure was interpreting Kolmogrov-Smirnov test output.

By interpreting the output data, even the significant column show that groups $> 0,05$ means that groups were normally distributed in the population. Otherwise, even the significant column show that groups $< 0,05$ means that group were not normally distributed in the population.

3.5.2 Homogeneity test

The purpose of this test was to find out whether the variance of pretest and posttest of experimental and control group are homogenous. For homogeneity test, the researcher used one Levene's test of homogeneity test in SPSS version 16.0. The test statistic of Levene's test (W) is defined as follows:

$$\text{W} = \frac{(N-k)}{(k-1)} \frac{\sum_{i}^{k}=1 \, Ni \, (Zi-Z)^2}{\sum_{i}^{k}=1 \, \sum_{j}^{Ni}=1 \, (Zij-Z\,i)^2}$$

where

W   : the result of the test

K   : the number of different groups to which the samples belong

N   : the total number of samples

N_i : the number of samples in the ith group

Y_{ij} : the value of the jth sample from the ith group

$$Z_{ij} = \begin{cases} |Yij - \overline{Y}i|, & \overline{Y} \text{ is mean of } i - \text{th group} \\ |Yij - \widehat{Y}i|, & \widehat{Y} \text{ is a median of } i - \text{th group} \end{cases}$$

The significance of W is tested against F ($\propto$, $k - 1$, $N - k$) where F is a

quintile of the F test distribution, with k – 1 and N – k its degrees of freedom, and $\propto$

is the chosen level of significance (usually 0.05 0r 0.01).

To analyze the homogeneity, the researcher used SPSS (Statistical Product and

Service Solutions) version 16.0. The homogeneity assumption was checked in SPSS

by Levene's test data of both experimental and control groups using the data view.

The second procedures were going to the Analyze Menu, selecting Compare Means,

and choosing Independent Sample t-test. The last procedures was interpreting the

homogeneity test output, the researcher needed to see Levene's test column to know

whether the equality of variances in the two groups of scores were homogeny or not.

3.5.3 Hypotheses test

Hypotheses test is used to calculate the correlation between variable x (experiment

group) and y (control group) by using the formula **t-test** at significance level of 5%

(0, 05).

In this study, independent t-test used to find out the significant differences

between experimental and control group. The steps of t-test calculation are:

The first step is stating the hypothesis of this research. The hypothesis can be

formulated as follow:

Null hypothesis is μ1 - μ2 = 0 (μ1 = μ2)

Alternative hypothesis is μ1 - μ2 ≠ 0 (μ1 ≠ μ2)

H1   : The students' achievement in English through classroom management

H2   : The students' achievement in English through without classroom

management

Hypotheses testing in this research were:

Ho   : There is no significant difference of English classroom management in

students' achievement between experimental and control groups.

Ha   : There is significant difference of English classroom management in students'

achievement between experimental and control groups.

The second step is finding t-value using independent t-test formula and

comparing the probability with the level of significance for testing the hypothesis. If t-

obs < t-critical, the researcher should accept the null hypothesis, whereas t-obs > t-

critical means the researcher can reject the null hypothesis. In other word, the

researcher accepts the alternative hypothesis.

Manually, the formula of t-test is:

$$t = \frac{(\bar{x}1 - \bar{x}2) - (\mu1 - \mu2)}{s\,\bar{x}1 - \bar{x}2}$$

where

$$s\,\bar{x}1 - \bar{x}2 = \sqrt{\frac{s2\ pooled}{n1} + \frac{s2\ pooled}{n2}}$$

Pooled variance means the average of the two sample variances, allowing the larger

sample to weight more heavily. The formula is:

$$S^2_{pooled} = \frac{(df1)\ s21 + (df2)\ s22}{df1 + df2}$$

$$\text{or } S^2_{pooled} = \frac{SS1 + SS2}{df1 + df2}$$

$df_1 = df$ for 1st sample; $n_1 - 1$

$df_2 = df$ for 2nd sample; $n_2 - 1$

Estimated Standard Error of the Difference

$$S\bar{x}_1 - \bar{x}_2 = \sqrt{\left(\frac{SS1 + SS2}{n1 + n2 - 2}\right)\left(\frac{1}{n1} + \frac{1}{n2}\right)}$$

Moreover, in statistical procedures, the researcher calculates t-test by using SPSS version 16.0. The first procedure is inserting the post-test data both of experimental and control group using the data view in SPSS. The second procedure is going to the **Analyze Menu**, selecting **Compare Means**, and then choosing **Independent Sample t-test**. The last procedure is interpreting the t-test output. The finding and discussion of interpreting data input will be explaining more detail in the following chapter.