CHAPTER III
RESEARCH METHODOLOGY

A. Research design

The study is classified as quantitative in nature because the data of this research is using numerical data and using statistic to analyse it. A quantitative research is a kind of research that employs statistical procedures. [1]

The research design used in this study is descriptive using correlation between reading ability and structure competence.The design of this study is case study. Here the researcher wants to measure the competence of reading comprehension and structure competence of the third year students of MAN Purwoasri.

They have learned English since they were in senior and junior high school that now in the third year. This study also aimed to test how far they have understood to what the teacher taught to them(how successful students have been in achieving the objectives of a course of study), the other aims is to measure how ready they face the final examination, it means to diagnose students strength and weakness of reading and structure.

In this study the researcher acts as the practioner who gives them some items test. The design that used in this study is by giving tests which consist of four stages

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[1] Sugiyono, *metode penelitian kuantitatif kualitatif dan R&D*,(Bandung ,:Alfabeta, 2008,)p.7

(1) Identifying, it means by doing identification when students are taught reading and structure in the class. It is purposed to identify the problems then prepare the test. (2) Testing, means the researcher carry out the test to the students. (3) observing , means the researcher observe the students when they do the test and collects data.(4) analysing , means the researcher make a judgment whether the study is successful or not , scoring then interpret it on the chapter five.[2]

The quantitative research which use in this design is the correlational study. It uses descriptive study which is concerned with discovery and of measuring the degrees of relationship between two or more variables. The result of the descriptive research is only the description about the certain variable by serving the frequentation, and rate number or the other qualification.[3]

This study tries to find information about the existing condition, it directs the study toward determining the extent of relationship between two variables which the ability to comprehend reading as x variable and structure competence as y variable under investigation.

Therefore, this study is dependent on statistical principles and analysis in measuring the degree of relationship. The two variables in this study are the students reading ability and structure competence.

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[2] ibid,p.16-17
[3] Faizal Sanapiah, *format-format penelitian social*, (Jakarta:Raja grafindo persada, 2007), p.20-21

A specific formula will be used to find the extent of relationship between them which will be computed producing the co relational coefficient. The number of data will be explained and interpreted at a conclusion.

1. Population and samples

To conduct this research, the researcher needs data to test the hypothesis. It is intended to know the factual characteristic of a population which will be search.

The population of this study is the third year students of MAN Purwoasri. The numbers of the students being observed for this study are for about + 182 students consist of language programs, science programs and social programs, each of them are two classes.

Therefore, in order to get the best result in this research, so the researcher needs good sample by the meaning sample that interpret the population by using formula based proportion from Issac and Michael as follow. [4]

$$S = \frac{X^2 N P (1 - P)}{d^2 (N - 1) + X^2 P (1 - P)}$$

Where S = sample measurement

        N = population measurement

        P = proportion in the population

        d = error

        X^2 = chi square table for α

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[4] Arikunto. Suharsimi, *Prosedur penelitian edisi revisi v*,(Jakarta:Rineka cipta, 2002), p. 113-114.

For   N   = 182

X^2, dk = 1, taraf eror 30 %

P   = 0,5

d   = 0,05

$$S = \frac{X^2 N.P(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

$$= \frac{1,074.182.0,5.0,5}{\left((0,05)^2.181\right) + \left(1,074.0,5.0,5\right)}$$

$$= \frac{48,867}{0,45 + 0,2685} = \frac{48,867}{0,7185} = 68,01$$

From the formula above, based on the error 30% the researcher takes the sample of the population 68 people. The researcher tests the students that contain of 22 students are from language programs, 22 students are from science programs and 24 students are from social programs for the data.

2. Statistical procedure

In analysing the data, that is, computing the correlation coefficient, the researcher will choose the Pearson's product moment correlation. The researcher chooses this formula because this method used in the following formula is for the ungrouped data and the researcher takes the sample of the subject.

Pearson's says:[5]

$$r\,x\,y = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\left[(N\sum X^2 - (\sum X)^2\right]\left[(N\sum Y^2 - (\sum Y)^2\right]}}$$

Where

r x y   = the correlation coefficient between x and y

x and y   = are the two variables

N   = number of the subjects

To get the linear relationship between the ability to read and the structure competence, the researcher compares the value of sig from the output of SPSS with the level of significance 0,05. If the value of sig higher than the level of significance, so the null hypothesis is rejected and vice versa.

B. Research setting and subject

The study will be conducted at MAN Purwoasri Kediri which is located on jln Pahlawan 66 Purwoasri for the third year students in academic year 2008/2009. The researcher choose the third year students with the assumption that the third year students have been conducting the reading and structure subject since they were in first grade so it is reasonable for the researcher to know is there any correlation both of their reading ability and their structure competence.

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[5] ibid, p. 240-248

Although for the senior high school students do not learn reading and structure separately, the researcher will gain the data trough test, interview, and observation in the process of teaching and learning. It will help the researcher to get the data whether the students are taught reading or structure.

The researcher chooses this school as the field of study for some reasons. First, as the students of academic year 2004/2005 the researcher herself found and felt that the most students got the difficulties in comprehending reading text and structure especially when got the test. Now it is also happen also to the students of the third year in MAN Purwoasri. Second, the researcher wants to help the teacher to improve the good marks for the student's mark in the national examination by knowing how far they understand the material through this study especially in English subject.

C. Research hypothesis

In this study, the researcher formulates the hypothesis because as G.E.R.Brurrough and Deobold Van Dalen said that" it is very important to formulate the hypothesis for the co relational studies"[6]. From this statement the researcher classified the hypothesis of this study as associative hypothesis because it is hypothesis which asks the relationship between two or more variables.[7]

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[6] ibid, p.65-66.
[7] Sugiyono, *metode penelitian kuantitatif* ... ibid, p.69.

For the purpose of statistical analysis the null hypothesis is rejected or the null hypothesis essentially states that there is no relationship between the variables being studied. The statement of the hypothesis or this study is as follows:

'' there is a significant correlation between the reading ability and structure competence. If structure competence is defective then reading ability will be affected.''

This hypothesis expects that students who have poor structure competence will get bad marks in reading test, while students who have good structure competence will have good marks in reading test.

D. Research variable

In this study the researcher take the title "the correlation between students' reading comprehension and their structure competence a case study at the third grade students of man Purwoasri kediri". In this study reading comprehension is as x variable means independent variable with sub variables as follows:

1. Narrative text

2. Discussion text

3. Explanation text

4. Review.

Those variables above have some indicators as follow:

    a.   identifying the meaning of each word in the text.

    b.   identifying the meaning of sentences in the text.

c. identifying the structure of the text.

d. identifying the event/ something happened in the text.

e. identifying the rhetorical steps of the text.

f. identifying the purpose of the text.

g. responding the text given by answer some question related with the content of the text.

h. identifying the elements of text formation.

i. identifying the linguistic forms and meaning.

j. identifying the meaning and the function of each sentences in the text.

k. identifying certain information from short functional text.

l. understanding the framework of the text.

m. understanding the logic relation between the sentence and paragraph.

n. improving the strategies to interpret the meaning suitable with the context.

o. answering certain comprehension question.

While the structure competence in this study is as y variables means dependent variable. Although there are two variables above, it does not means that it have causal connection each other, because the researcher discuss two variables only in order to know whether is there any correlation between them or not. And for the y variables means structure competence have sub variables as follows:

1. Present tense, past tense, past continuous, present perfect, passive voice, causative, should have and must have, subjunctive, relative clause, if clause and conjunction.

Those variables above have some indicators as follow:

a. The students can identify the formula of the pattern.

b. The students can analyse the pattern of the sentence.

c. The students are able to mention the name of the formula.

d. The students are able to answer the question.

E. Procedure of collecting the data

In this study the researcher uses three kind of data collection technique. First, to collect the data, researcher uses two kind of test. They are the reading test and the structure test.

Second, the researcher does an observation namely participant observation. In this study, the researcher does participation that classified into moderate participation: means that the researcher maintains a balance between being insider and being outsider.[8]

The third of the data collection technique do by the researcher is an interview with the English teacher in MAN Purwoasri.

These are the stages that do by the researcher when she collects the data:

1. The researcher does the preliminary study. Preliminary study purposed to identify the third year students of MAN Purwoasri, to do an interview with the English teacher, and do classroom observation.

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[8] ibid, p.225-227.

By doing this preliminary study, the researcher can analyse and find the facts as follows: first, the sum of the third year students of MAN Purwoasri of academic year 2008/2009 are 182 students which contains of six classes and three programs, they are science programs, social programs and language programs. Second, student's ability in reading and structure are insufficient. It may be caused by the teaching and learning process which is not effective, students less of interest and inappropriate teaching and learning strategies.

By knowing and analysing the first stage, the researchers then identify the problems that exist in the class and prepare the test suitable with the means of teaching and learning which used by the teacher in MAN Purwoasri.

2. The researcher then tests the students. In this stage the researcher carries out the reading and structure test to the students. The reading test consists of the genre text and structure test consist of grammar which was determine in the curriculum and those material which given to the second semester in MAN Purwoasri.

The test is multiple choice types and both of tests do in forty minutes and to be tested at second times. The total items of reading test are 25 items and structure test are fifty items. The first tests are given on February 20-23, 2009. The second tests are given on March 27-30, 2009. When the researcher gives the reading test and structure test, first of all she explains to the students the instruction. They should write the answer in the answer sheet given.

Considering the type of the test, the number of items and the time given for the reading test and structure test, the researcher scores it as follows: 100 is the highest score with a weighing of 4 points for reading and 2 points for grammar each test item correct.

To analyse the students' reading comprehension the researcher uses the category taken from the curriculum and syllabus used in MAN Purwoasri as follows:

<u>Comprehension</u>

a. responding the text given by answer some question related with the content of the text.

b. identifying the elements of text formation.

c. identifying the linguistic forms and meaning.

d. identifying the meaning and the function of each sentences in the text.

e. identifying certain information from short functional text.

f. understanding the framework of the text.

g. understanding the logic relation between the sentence and paragraph.

h. improving the strategies to interpret the meaning suitable with the context.

i. answering certain comprehension question.

j. identifying the meaning of each word in the text.

k. identifying the meaning of sentences in the text.

l. identifying the structure of the text.

m. identifying the event/ something happened in the text.

n. identifying the rhetorical steps of the text.

o. identifying the purpose of the text.

By doing this test, the researcher got the data analysis that will be explained in the chapter four.

3. Observing. In this stage the researcher observes the students; first when they do the test then collect the data through their scores. By doing this observation the researcher can conclude that:

First, all of the students do the test seriously and they do it by themselves and full of interest. Second, the researcher does observations during the process of teaching and learning. This observation purposed in order to know how far the students pay attention and master the material given by their teacher. This observation will use to explain and gives the conclusion and suggestion.

4. Analysing. In this stage the researcher makes judgment whether the study is successful or not trough scoring then interprets the result of this study on chapter five.

F. Research instrument

In this study, the researcher uses two kinds of tests. They are reading test and structure test. In this case, the researcher test the student's reading and structure directly by the purpose the students are able to doing reading test using correct English pattern and can identify the what kinds of text by using grammatical features of each text.

The researcher conducts the reading test and structure test twice in order the students are not doing twenty five items of reading test in one time and it's also with the structure. In the first test the researcher gives twenty five items of reading test. In the second test the researcher gives fifty items of structure test, both of them are do in forty minutes. Because the researcher conducts the test twice so the total items of the test are seventy five items which consist of twenty five of reading test and fifty items of structure test.

The reading test given in this study is narrative text, discussion text, explanation text and review. Each of text discussed the social function of the text, grammatical features used in the text, schematic of the test and also what are discussing in the text. Each level of students understanding of the text discussed in the variable of the study above.

While the structure test is concerned with sentence patterns, present tense, past tense, past continuous, present perfect, passive voice, causative, should have and must have, subjunctive, relative clause, if clause and conjunction.

1. Reliability and validity of the test

A test is said to be valid if it is measures accurately what it is intended to measures. A test also said a good test if have characteristic such as: valid, reliable, objective, practicability, and economic.[9]

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[9] Arikunto. Suharsimi, *Prosedur penelitian...* opcit., p. 57

Validity and reliability are two must important for measuring the accuracy of the test. Sugiyono said in his book "By using valid and reliable instrument in the data collection, it is hoped that the result of the research will be valid and reliable", so valid and reliable instrument is the absolute requirement to get the valid and reliable result in the research.

2. Reliability of the test

Reliability is essential in any kind of measurement. A test said has high degree of belief if the test can give the consistency result. It concludes that the definition of reliability of the test related with consistency of the test result. Reliable measures in one that provide consistent and stable indication of the characteristic are being investigated.[10]

There are several ways to determine the reliability of a test; most of them are based on correlational procedures. The correlation coefficient will run about -1 until + 1.[11]

It is stated that: if

0, 800-1, 00 = very high

0,600- 0, 800 = high

0,400 – 0, 600 = moderate

0, 200 – 0,400 = slight

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[10] Sugiyono, *metode penelitian kuantitatif* ... loc it, p.122

[11] Subana, Moersetyo Hadi, *statistic pendidikan*, (Bandung,: pustaka setia, 2000), p.137

$0, 00 - 0{,}200 = \text{low}^{12}$

There is one method of estimating reliability; it can be done by internal consistency/ split half technique that analyse by using Spearman Brown formula.

The formula reads as follows:

$$r = \left(\frac{2 \times r\ belah}{1 + r\ belah} \right)$$

Where   r   = reliability coefficient

r belah   = split reliability

For computing the item instrument test are split into two groups (odd and evenness) then each of the item score are summed so get total score, then we search the correlation of those score by using Spearman Brown formula.[13]

3. Validity of the test

The degree of validity is important. It is an important aspect of a measuring instrument. As the Scarvia B.Anderson said" a test is valid if it measures what it purpose to measure". Therefore, it is clear that validity of the test must be examined because it refers to the extent to which the test measures and what the test measures.[14]

To find out the validity of the test the writer uses analysis item, means correlate the value of each item test with total score that get from the sum of each item value. In the item analysis Masrun stated:

[12] Arikunto. Suharsimi, *Prosedur penelitian...*, p. 75
[13] Sugiyono, *metode penelitian kuantitatif ...*, p.131
[14] Arikunto, suharsimi, *Dasar-dasar evaluasi pendidikan*, (Jakarta:Bumi aksara,20030),p.65

" correlation technique to determine the validity of the test is the technique that has been use by many people".

He also interprets the coefficient correlation by stated:

"Item that have positive correlation by the criteria or total score and high correlation show that those items have high validity".

The minimum criteria if r = 0, 3 if the correlation of the item test is less than 0, 3 so the item of instrument is not valid.[15]

4. Technique of data analysis

If the data which are needed for this research have been collected, the next stage that done by the researcher are analyse the data, examine the data, interpret the data, and conclude the result of the research. According to Suharsimi Arikunto the technique of analysis the data have three steps as follow: [16]

a. Preparation

In preparation, the researcher chooses the data that has been collected, which one used for the research.

b. Tabulation

In the tabulation the researcher score the students who have been choose as the object of this research.

c. Application of the data suitable with the approach of the research

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[15] Sugiyono, *metode penelitian kuantitatif ...*, p.133-134
[16] Arikunto. Suharsimi, *Prosedur penelitian...*, p. 209

According to the approach that used by researcher, this research use "product moment correlation" which formula:[17]

$$r\,x\,y \quad = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\left[(N\sum X^2 - (\sum X)^2\right]\left[(N\sum Y^2 - (\sum Y)^2\right]}}$$

Where

$r\,x\,y$ = the correlation coefficient between x and y

x and y = are the two variables

N = number of the subjects

To get the linear relationship between the ability to read and the structure competence, the researcher compares the value of sig from the output of SPSS with the level of significance 0, 05. If the value of sig is higher than the level of significance, so the null hypothesis is rejected and vice versa.

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[17] ibid p.243