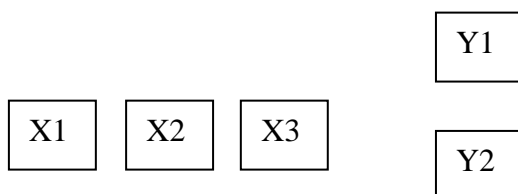# III. RESEARCH METHOD

This chapter illustrates how the research was done; what design of the research, who were the population and the sample, and how the data were collected. It also covers the validity and realibility of the instrument, scoring system, research procedures, data analysis, and hypothesis testing.

3.1 Design

In conducting this research, the researcher used a causal comparative design of ex post facto designs. In collecting the data, the researcher did not apply any treatment or any experiment to subjects. In accordance with Setiyadi (2006), there are two types of ex post facto research design, "*co-relational study involves one group and causal comparative study involves two groups.*" The researcher used this design because the researcher wants to find out the comparison between successful and unsuccessful readers in using different strategies in reading comprehension.

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                                                    ┌─────┐
                                                    │ Y1  │
                                                    └─────┘
┌─────┐   ┌─────┐   ┌─────┐
│ X1  │   │ X2  │   │ X3  │                         ┌─────┐
└─────┘   └─────┘   └─────┘                         │ Y2  │
                                                    └─────┘
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X1   : Cognitive Strategies

X2   : Metacognitive Strategies

X3   : Social Strategies

Y1   : Successful readers

Y2   : Unsuccessful readers

3.2 Variables

This research has two variables they are: learning strategies and reading comprehension. Learning strategies as the independent variable (variable that has a function to affect dependent variable) and reading comprehension as the dependent variable (main variable in a research). In short, reading comprehension would be affected by learning strategies that used by the students.

3.3 Source of data

The source of the data was from the population and sample. The population of the research was the second year students of SMAN 1 Gedong Tataan. The researcher chose the second year students in the second semester of academic year 2014/2015. There are eight classes of the second year students (XI IPA 1, XI IPA 2, XI IPA 3, XI IPA 4, XI IPA 5, XI IPS 1, XI IPS 2, XI IPS 3) and each class consists of 32 students.

The class as the sample was taken through purposive random sampling. The researcher chose eight students from each classes to be the sample of this research, so there were 64 students that became the sample (25% of the population). The researcher also chose the students that have same proficiency level. The researcher decided their proficiency level from their mid-test score in their school that already held a week before the researcher conducted a research. The researcher chose the

students who get score started from 70 on their mid test. Then, the researcher concluded that the sample of the research came from same proficiency level.

3.4 Instruments

The instruments that used in this research were questionnaire and reading test. The score of the reading test was used as a principle. The researcher then analyzed the comparison between successful and unsuccessful readers by using the questionnaire of learning strategies and students' reading comprehension test.

3.4.1 Questionnaire

Questionnaire is a list of statements and questions that need to be answered by the students to know the learning strategies that used by the students. The Questionnaire used in this research was LLSQ proposed by Setiyadi. The questionnaire consists of 20 items that have been prepared based on the indicators of cognitive, metacognitive and social strategies. The questionnaire is developed by using Likert-Scale, in which provides the students with these following optional answers:

1= Never or almost never true of me.

2= Usually true of me.

3= Somewhat true of me.

4= Usually true of me.

5= Always and almost always true of me.

Table 1. Specification Table of Learning Strategies in the Questionnaire

Aspects of Questionnaire	Number of items
Cognitive strategies	1-11
Metacognitive strategies	12-17
Social strategies	18-20

The student's choices of preferences on the item selected then scored by counting all the students answers in each learning strategies. For example: items 1 – 11 belong to cognitive, and then the total scores of students answer divided into 11. items 12 – 17 belong to metacognitive, and then the total scores of students answer divided into 6. items 18 – 20 belong to cognitive, and then the total scores of students answer divided into 3. Afterthat, the data accumulated from the questionnaire were used to analyze the most frequent strategies employed by the learners.

3.4.2 Reading test

The reading test was given in order to know students' reading achievement in comprehending a text. The reading test consisted of some kind of texts that already taught by the teachers and followed by some questions. The scoring of the reading test was really simple. The correct answer by the students was divided with the amount of the reading test (36) and then times 100. For example: if the students get 30 correct answers out of 36, then it was divided with 36, after that the result times 100 (example: 30:36 = 0.83 x 100 = 83). So, the final score of the student reading test was 83.

The result of the reading test was used to determine the successful and unsuccessful readers in which the category in specifying them was based on "scores averages" in reading test (Taylor & Russel, 1939). The reading test scores were used to dichotomize learners into successful and unsuccessful category. It means that, the learners who got score above the averages belong to successful readers. Meanwhile, the learners who got score under the averages belong to unsuccessful readers.

3.5 Validity of the Instruments

3.5.1   The Validity of the Questionnaire

The validity of questionnaire is also measured to find if the components are proportionally suitable and related to the relevant theories of students' learning strategies in English reading. According to Hatch and Farhady (1978) there are least two validity should be fulfilled; content and construct validity. The researcher used Language Learning Strategies Questionnaire (LLSQ) in reading ability proposed by Setiyadi. Since the questionnaire is adopted from LLSQ constructed by Setiyadi, the researcher considers that the construct validity of the questionnaire has been standardized. It consists of 20 items that include to three different measurement of skill-based learning strategies in reading categories, namely: cognitive, metacognitive, and social strategy. Via a five point Likert type of scales, the students will be asked to choose the alternative that suits to them (never or almost never true of me, usually not true of me, somewhat true of me, usually true of me, always or almost always true of me) for each item.

3.5.2 The Validity of the Reading Test

Validity is a matter of relevance; it means that the test measures what is claimed to measure. To measure whether the test has a good validity, it can be analyzed from its content validity and construct validity. Content validity is concerned whether the test is sufficiently representative for the rest of test or not. While construct validity focuses on the relationship between indicators within the test. Construct validity is concerned whether the test is actually in line with theory of what it means to know the language (Shohamy, 1985). Regarding the construct validity, it measures whether the construction had already in line with the objective of the learning (Hatch and Farhady, 1982). To know whether the test is good reflection of the knowledge which the teacher wants the students to know, the researcher compares the test with table of specification.

Table 2. Table of Specification of Reading Comprehension

No.	Aspect of Reading Comprehension	Item Number	Percentage
1	Determining Main Idea	1,5,7,10,16,20,35	17%
2	Finding Specific Information	2,6,8,11,19,21,28	17%
3	Determining Concept of the Text (Generic Structure/ language features)	4,12,24,27,32	16%
4	Finding Reference	3,9,13,18,23,26,31,34	19%
5	Finding Inference	15,29,33,36	15%
6	Understanding Vocabulary	14,17,22,25,30	16%
	Total	**36 Items**	**100%**

Basically, the construct and content validity are overlap. It is a representative of the material from the subject. In line with Nutall (1985) the relation of the instrument refers to construct validity in which the question represent the reading skills, i.e.

determining main idea, finding specific information, determining concept of the text, finding reference, finding inference and understanding vocabulary. Skills of reading in the test are part of the construct validity and the item numbers are the part of content validity.

3.6 The Reliability of the Instruments

3.6.1   The Reliability of the Questionnaire

The researcher collected the data by using the quantitative one. First of all, the result of questionnaire was scored based on Likert Scale. The score ranges from 1-5. To make sure that the data gathered from the questionnaire is reliable, the researcher used reliability analysis based on Cronbach Alpha Coefficient of SPSS for window. Cronbach Alpha Coefficient is the most common used to measure the consistency among indicators in the questionnaire which was counted based on the correlation between each items. The Alpha ranges from 0. to 1. The higher alpha, the more reliable the items of the questionnaire (Setiyadi, 2006).

George and Mallery (2009) in 'SPSS for Windows Step by Step: A Simple Study Guide and Reference, 17.0' have a suggestion in evaluating the Alpha Cronbach coefficient:

> 0.9 = very high reliability

> 0.8 = high reliability

> 0.7 = medium reliability

> 0.6 = low reliability

> 0.5 = very low reliability

3.6.2. The Reliability of Reading Test

Reliability of the test can be defined as the extent to which a test produces consistent result when administrated under similar conditions (Hatch and Farhady, 1982:243). Split-half technique was used to estimate the reliability of the reading test and to measure the coefficient of the reliability between odd and even group, *Pearson Product Moment formula* was used is as follows:

$$rl = \frac{\sum xy}{\sqrt{\left[\sum x^2\right]\left[\sum y^2\right]}}$$

rl: Coefficient of reliability between odd and even numbers items.

x: Odd number.

y: Even number.

x^2: Total score of odd number items.

y^2: Total score of even number items.

xy: Total number of odd and even numbers.

(Lado, 1961 in Hughes, 1991:32).

The criteria of reliability are:

- 0.80 – 1.00: high.

- 0.50 – 0.79: moderate.

- 0.00 – 0.49: low.

(Hatch and Farhady, 1985:247).

3.7 Procedures

In doing the research, the researcher used procedures as follows:

1. Determining the subject of the research

   In determining the sample, the researcher used purposive random sampling. This technique was used because the researcher wants to have sample with same proficiency level. The researcher chose 8 students from each classes to be the sample of this research (XI IPA 1, XI IPA 2, XI IPA 3, XI IPA 4, XI IPA 5, XI IPS 1, XI IPS 2, XI IPS 3), so there were 64 students (25% of the population).

2. Determining the try out class of the research

   Similar to the subject of the research explained before, the researcher used purposive sampling to choose the students for the try out. So, the 64 students did the try out. It is important to have a try out on the instrument first in order to find out its content and construct validity and reliability.

3. Preparing the Instruments

   In this research, the reading test consisted of some kind of the texts that have been learned by the students. The questionnaire used was LLSQ proposed by Setiyadi.

4. Conducting Try Out

   Try out was conducted to measure the reliability of instruments. The aim of try out is to know the quality of the test used as the instrument of the research, and determine which item should be revised.

5. Administering the Questionnaire

   The Questionnaire -in this case LLSQ items- was administered to measure the learning strategies used by the students in reading. The items of the questionnaire are in the form of limited statements which have range 1 until 5, explaining from never to always.

6. Administering the Reading Test

   The reading test was administered to measure the students' ability in reading comprehension. The reading test was in the form of the some kind of texts and then the students were required to answer the 36 questions provided in the paper. Each item has four options of answer (A, B, C, D).

7. Analyzing the Data

   After conducting the test to the students, the researcher analyzed the data. The data was analyzed by using SPSS 20. One way Anova was used to determine the successful and unsuccessful readers.

8. Making a Report and Discussion of Findings

   After having gained all the data, the researcher makes a report and discussion on findings of the comparison between successful and unsuccessful readers in reading comprehension.

3.8 Data Analysis

This research has two variables, dependent and independent variable. The researcher used tests for those two variables to collect the data. They were reading ability test and questionnaire of learning strategies. Learning strategies is the independent variable because the researcher assumes that language learning

strategies has an influence to reading achievement. The researcher also used skill-based reading categories which covers cognitive, metacognitive and social strategy. The data from reading test is classified as the dependent variable because the ability is influenced by learning strategies.

In analyzing the data, the researcher used causal somparative study. It was used to measure whether ther is significant different between successful and unsuccessful readers in their reading comprehension. In this case, X1 (cognitive strategies), X2 (metacognitive strategies) and X3 (social strategies) are learning strategies as the first variable. Meanwhile Y1 (successful readers) and Y2 (unsuccessful readers) are second variable. The result of the students' achievement in reading comprehension is analyzed by using One Way Anova of SPSS for windows version 20.0 to determine the successful learners and unsuccessful readers. On the other hand, for knowing which learning strategies the learners used in reading skill at the second year of SMA N 1 Gedong Tataan, the researcher analyzed the questionnaire by comparing the mean of each skill-based reading strategies i.e. metacognitive strategies, cognitive strategies, and social strategies through the use of SPSS 20.

3.9 Hypothesis Testing

The hypothesis testing is needed in order to know the possible difference between successful and unsuccessful readers in reading comprehension.

H_0: There is no significant difference between successful and unsuccessful readers in reading comprehension.

H1: There is a significant difference between successful and unsuccessful readers in

reading comprehension.

The hypothesis is analyzed at the significant level of 0.05 in which the hypothesis is approved if Sig. $< \alpha$.