Chapter Three

Research Methodology

In this chapter, the researcher provides the explanation of the research methodology used in this study. This chapter consist of research design, research setting, population, sampling technique, and sample, data collection method, data collection procedures, and data analysis. Detail clarification will be included in each discussion like the reason in conducting each point.

Research Design

This study utilized quantitative approach. The reason why the researcher chose quantitative approach as the research method was because quantitative approach collects the data from a large number of people using instruments with pre-set questions and responses. Cresswell (2012) stated the more the number of the respondents, the more valid of the result. The researcher collected data from large number of respondents and analysed trends or tendency from the aims of this research. Another reason the researcher used quantitative as the approach in this study because the data of this study can be in form of members and used statistical analysis (Creswell & Cresswell, 2018).

The researcher used the cross-sectional survey design to collect the data. Based on Cresswell explanation (2012), cross-sectional survey research design were the procedures in quantitative approach. Cresswell (2012) also stated that cross-

sectional survey design is a quantitative research design where the researcher collects data at one point in time in order to provide a snapshot of the current beliefs or opinions. In this case, the researcher investigated the language learning strategies used by the students. In administering the survey of this study, the researcher needed sample of the entire population of people to determine trends or tendency of behaviours.

Research Setting

The researcher conducted this research in an English Language Education Department (ELED) in a private university of Yogyakarta. The researcher chose this department based on two reasons. First, student in ELED had intensively experienced English language learning which its content and language integrated learning is on English. Second, the English Department in this University was accessible for the researchers who wanted to conduct a research about English language and education. The research was conducted in December 2019.

Population, Sampling Technique, and Sample

In this part, there are the population, sampling technique, and research sample of this research. This information provides on why the researcher chose the participants, why a particular sampling technique were used, and how the research sample was granted.

Research population. ELED students in a private university of Yogyakarta were the population in this research. ELED students learn English intensively so it

might differ their language learning strategies compares to other departments. The target population of this research were from students from batch 2019 with the total number of 190 students. There are two main reasons why the researcher chose 2019 students. First, 2019 students are the first-year students which have not learn about LLS to begin with, so this research will help them to figure out their language strategies. Second, they will be able to identify their learning strategies and what strategies that they can use after this research is done.

Research sample. In quantitative research approach, the researcher should have the sample in collecting the data. Sample is a number of respondents in a research that is selected from the target population (Creswell, 2012). According to Cohen , Manion, & Morrison (2011), if the total population are 190 students, the minimum sample size are 150 students. The minimum sample size of this study was based on the table of confidence level 95% for education level with confidence interval 4% (Cohen et al., 2011). In total, the researcher gathered 164 students as a sample in this research.

Sampling technique. The researcher used cluster sampling technique to gather the sample. Cohen et al. (2011) stated that the researcher will be able to choose specific classes and test all the students in that chosen classes. Students in batch 2019 were consisted of 5 classes with the total number of 190 students. Thus, cluster sampling used in order to select which classes that was included as the sample in this research. The researcher needed at least 150 students. In each class, there were 30-38

students which means the researcher entered four random classes in order to take their data. The researcher randomly picked four classes based on rolling the paper and picked four paper out of five paper. The researcher was able to gather the data from class A, B, D, E. However, the research still took the data from C class since the data was not adequate enough to fulfill the minimum requirement.

Data Collection Method

This research used questionnaire as the instrument of data collection method. In this study, the researcher used the structured questionnaire (close-ended) proposed by Cohen et al. (2011) as the types of the questionnaire because the researcher wanted the respondents to choose one answer in every questionnaire item.

Research Instrument

In this research, The Strategy Inventory for Language Learning (SILL) questionnaire (Oxford, 1990) used to investigate students' learning strategies. In total the SILL questionnaire has 50 items with 2 main categories of direct and indirect strategies. Direct strategies consist with consists of cognitive, memory, compensation strategies. Indirect strategies comprise of metacognitive, affective, and social strategies.

The researcher adopted this questionnaire based on two reasons. First, it is mostly used by other researcher to study LLS from general LLS, LLS and gender, LLS and ages, and others. Second, the items of this questionnaire are clear to determine whether it is cognitive, memory, metacognitive, compensation, affective

and social strategies which implies that Oxford's LLS have more complete categorization of LLS.

The questionnaire of SILL from Oxford (1990) is categorized as follows:

Table 2

Questionnaire Item Categories of Strategy Inventory for Language Learning (SILL) questionnaire (Oxford, 1990).

Categories	Strategies	Questionnaire Items
Direct Strategies	Memory Strategies	1-9
	Cognitive Strategies	10-23
	Compensation Strategies	24-29
Indirect Strategies	Metacognitive Strategies	30-38
	Affective Strategies	39-44
	Social Strategies	45-50

The fifty items used Likert scale as a rating scale at which there were four points that represent certain response which was proposed by Rensin Likert (as cited in Cohen et al., 2011). Point 1 is "Never", point 2 is "Rarely", point 3 "Often" and point 4 is "Always". Further, the researcher asked the participants to give demographic information. The authentic questionnaire translated into Bahasa Indonesia and the validity examined through expert judgements. Then it administered to the participants.

Table 3
Scale and Value Categories

Scale	Value
1	Never
2	Rarely
3	Often
4	Always

Validity

In order to make sure whether the instrument was readable and understandable, the test of readability was conducted by asking two random students from the target population whether or not they can understand the items of the questionnaire. Later, these two students were not included in data collection. They asked some vague questions to the researcher what did the items means, there were several items that finally adjusted towards Bahasa Indonesia so it could be understandable.

The validity of the instrument is necessary in order to give an accurate measurement. Cohen et. al., (2011) stated that validity of instrument test was a crucial element to effective research. According to Winter (2000), validity can demonstrate a particular instrument in fact to measure accurately and represented what the data intends to measure, and it was intended to describe or explain the theories. The researcher used Expert judgment and Aiken test to test the validity the instruments in this research. Items were reputed valid if:

Table 4
Validity Categories

Validity Score	**Category**
V<0.4	Low validity / invalid
0.4<V<0.8	Medium Validity
V>0.8	High Validity

If validity score was more than 0.4, the category is “Medium validity”. “High validity” is given if the validity score was more than 0.6; and “invalid validity” if the validity score was less than 0.4. Therefore, if there was an invalid item, the researcher had to change or delete the item. After calculated the data from expert judgements using Aikent test, the result is in below:

Table 5
Aiken Test Result

Items	Expert1	Expert2	Expert3	S1	S2	S3	SUM	V	Information
1	4	4	4	3	3	3	9	1.00	High Validity
2	4	4	4	3	3	3	9	1.00	High Validity
3	4	4	3	3	3	2	8	0.89	High Validity
4	4	4	3	3	3	2	8	0.89	High Validity
5	4	4	4	3	3	3	9	1.00	High Validity
6	4	4	4	3	3	3	9	1.00	High Validity
7	4	4	4	3	3	3	9	1.00	High Validity
8	4	4	4	3	3	3	9	1.00	High Validity
9	4	4	3	3	3	2	8	0.89	High Validity
10	4	4	4	3	3	3	9	1.00	High Validity
11	4	4	4	3	3	3	9	1.00	High Validity
12	4	4	4	3	3	3	9	1.00	High Validity
13	4	4	4	3	3	3	9	1.00	High Validity
14	4	4	4	3	3	3	9	1.00	High Validity
15	4	4	4	3	3	3	9	1.00	High Validity
16	4	4	4	3	3	3	9	1.00	High Validity
17	4	4	4	3	3	3	9	1.00	High Validity
18	4	4	4	3	3	3	9	1.00	High Validity

19	4	4	4	3	3	3	9	1.00	High Validity
20	4	3	4	3	2	3	8	0.89	High Validity
21	4	4	4	3	3	3	9	1.00	High Validity
22	4	4	4	3	3	3	9	1.00	High Validity
23	4	4	4	3	3	3	9	1.00	High Validity
24	4	4	4	3	3	3	9	1.00	High Validity
25	4	4	4	3	3	3	9	1.00	High Validity
26	4	4	4	3	3	3	9	1.00	High Validity
27	4	4	4	3	3	3	9	1.00	High Validity
28	4	4	4	3	3	3	9	1.00	High Validity
30	4	4	4	3	3	3	9	1.00	High Validity
31	4	4	4	3	3	3	9	1.00	High Validity
32	4	4	4	3	3	3	9	1.00	High Validity
33	4	4	4	3	3	3	9	1.00	High Validity
34	4	4	4	3	3	3	9	1.00	High Validity
35	4	4	3	3	3	2	8	0.89	High Validity
36	4	4	4	3	3	3	9	1.00	High Validity
37	4	4	4	3	3	3	9	1.00	High Validity
38	4	4	4	3	3	3	9	1.00	High Validity
39	4	4	4	3	3	3	9	1.00	High Validity
40	4	4	4	3	3	3	9	1.00	High Validity
41	4	4	4	3	3	3	9	1.00	High Validity
42	4	4	4	3	3	3	9	1.00	High Validity
43	4	4	4	3	3	3	9	1.00	High Validity
44	4	4	4	3	3	3	9	1.00	High Validity
45	4	4	4	3	3	3	9	1.00	High Validity
46	4	4	4	3	3	3	9	1.00	High Validity
47	4	4	4	3	3	3	9	1.00	High Validity
48	2	2	1	1	1	0	2	0.22	Low Validity
49	4	4	4	3	3	3	9	1.00	High Validity
50	4	4	4	3	3	3	9	1.00	High Validity

Based on the Aiken Test, almost all the items are highly validated which were scored more than 0.8. But there was one item that was rated as low validity which was item number 48. It means that item could not be used in the questionnaire. Therefore, the item number 48 was erased and the valid questionnaire were 49 items.

Reliability

Reliability instrument in analysing data were used to measure of internal consistency. In this study, the researcher used Cronbach's alpha to test the reliability of instruments. These following alpha coefficient guidelines can be used in reliability test. Based on Creswell (2012), the data are reliable if the Cronbach's alpha score is more than 0.6 as long as suitable with the category table above. If the Cronbach's Alpha was less than 0.6 the items are not reliable. Below is the guideline value of Cronbach's Alpha score.

Table 6
Reliability Categories

Cronbach's Alpha	Category
>0.90	Very highly reliable
0.80-0.90	Highly reliable
0.70-0.79	Reliable
0.60-0.69	Marginal / minimally reliable
<0.60	The data are not reliable

The data were input to the SPSS and analysed statistically. It can be seen from the table 7 that the overall Cronbach alpha (N=49) was 0.876 which means highly reliable. Bryman and Cramer (1990, cited in Cohen et al, 2011) stated that the acceptability of the reliability score should be at least 0.8. It means the overall questionnaire was acceptable since the total alpha in this questionnaire was 0.876.

Table 7
Reliability Statistics

Cronbach's Alpha	N of Items
.876	49

Data Collection Procedure

In this study, there were three procedures in administering the questionnaire. First, the researcher contacted the lecturer of ELED in a private university to inform or ask permission in collecting the data from their students. Second, the survey was conducted before English teacher start teaching. The questionnaire was in form of hardcopy, so the researcher shared the questionnaire's paper the participants. Third, the researcher used Bahasa Indonesia in giving the instruction to the respondent to gather the data from them. The use of Bahasa Indonesia has a function to ease the interaction between the researcher and the respondent in explaining what the survey is about. In this study, the researcher administered the questionnaire with his presence because it can be helpful if the students as the respondents felt difficult or uncertain to answer or choose the questionnaire items. According to Cohen et al., (2011), the presence of researcher can ensure that the respondents have answered all questionnaire items completely and the researcher also can check if the respondents fill in the questionnaire correctly.

Data Analysis

In this part, the researcher explains on how the data were analysed. The first research question was analysed by using descriptive statistics while the second research question was analysed by using inferential statistics.

Descriptive statistics. The researcher used descriptive statistic to analyse the data from the respondents. According to Cohen et al. (2011), descriptive statistic presented exactly what the data describe, so that the researcher can analyse and interpret what these descriptions means in a study. In this study, the researcher analysed the data by using SPSS (Statistic Package for Social Science). The researcher used descriptive statistic to answer the first research question. Descriptive statistic was a description of the data that consist of frequencies, measures of dispersal, measures of tendency, standard deviation, cross tabulation and standardized scores (Cohen et al., 2011). The researcher analysed the data in descriptive statistic by presenting the frequencies and mean scores of the data.

In order to answer the first question, the researcher created range or category belongs to each research questions. To make the results clear to read, rating scales were used in this research as it was able to establish the sensitivity degree and diverse responses while maintaining to generate numbers (Cohen et al., 2011). The researcher used category the following category:

Table 8 *Students' Learning Strategies Categories*	
Scale	Category
1.00 – 1.75	Never
1.76 – 2.50	Rarely
2.51 – 3.25	Often
3.26 – 4.00	Always

The category was reputed "Never" if the mean score is 1.00 until 1.75 which means the students does not apply the strategy. For "Rarely" category if the mean score is 1.76 until 2.50 which means the students rarely use the strategy. For "often" category if the mean score was 2.51– 3.25 which means the student repeatedly use the strategy even if it is not every time, and the "always" category if the mean score was 3.26-4.00 which means the students use the strategy every time. The researcher inserts the data based on the category. Then, the researcher reported the common strategies were used by students.

Inferential statistics. Inferential statistics provides the possibility for the researcher to make inferences about the wider population (Cohen et al., 2011). One of the methods in inferential statistics that used in this research was t-test because the researcher tried to discover whether there were statistically significant differences between male and female towards the use of LLS. Before the t-test was conducted, the researcher used the assumption test which were normality and homogeneity test.

Normality test. Normality test is a test to determine whether the populations are from where the samples are collected are normally distributed (Das & Imon, 2016). The normality test that conducted in this research is Kolmogorov-Smirnov test that was launched by SPSS. The test distribution could be considered normal if the value of sig 2-tailed > 0.05. The result is normal because the score is higher than 0.05 (0.200 > 0.05)

Homogeneity test. After running the normality test, then the researcher conducted homogeneity test. Homogeneity test aims to find out whether the samples are collected from the same populations (Sharma & Kibria, 2012). In order to test the homogeneity of variance, the researcher used the Levene test that will be launched by SPSS. The data are homogenic if the value of sig is Sig>0.05. In this research, the data is homogenous because the sig value is higher than significance level (0.658 > 0.05).

t-test. Next, if the data are normal and homogeneous, the researcher ran the t-test by the SPSS. An independent-samples t -test used in order to test the means of two different group. The purpose of running the t-test is to find out the significance difference between variables by seeing the value of t, df, and sig. The significance can be seen from independent sample test table. Look at the Levene's Test for Equality of Variances, if sig is $p < 0.05$, the researcher needs to move on to the second row of data and look at Sig (2-tailed). If the $p < 0.05$ in significance (2-tailed) table, it means there is a difference between male and female in the use of LLS.