

Chapter Three

Methodology

This chapter presented the methodology of the research used by the researcher. The research methodology consisted of research design, research setting, research population, data collection technique, data collection procedure, and data analysis. The research design section provided employed approach and the design of the research. Then, research setting consisted of where and when the research was conducted. Furthermore, the research population, sample, and sampling technique section discussed target population, sample, and implemented sampling technique to collect data. Afterwards, data collection technique and procedure consisted of the manner and steps of the researcher in gathering data. Last, data analysis explained how the researcher did the validity and reliability of research instrument. It also discussed the data analysis used by the researcher.

Research Design

Firstly, this research employed a quantitative research approach. According to Creswell (2012), quantitative identifies the problem of research based on a tendency in the field. Therefore, it is in line with the objectives of this research which is to seek the tendency of the use of electronic dictionary among students of English Language Education Department.

Secondly, survey was the research design of this study. Creswell (2012) stated that survey design is useful to examine individual opinions about a particular case. This design was suitable to answer the research questions of the research. Furthermore, the survey design type of this research was a cross-

sectional survey design. According to Creswell (2012), this survey design type gathers data at one point in time for collecting data. By using this type, the researcher did not take long time to collect data.

Research Setting

This research was conducted at English Language Education Department in one of the private universities in Yogyakarta. The researcher considered some reasons in choosing that place. First reason was there were many students of that department who use electronic dictionary in the classroom rather than using a printed one. Furthermore, the researcher is a student in that department and also used electronic dictionary in learning English. Last, accessibility was the last reason.

This research was conducted in odd and even semester of academic year 2018/2019. Writing background process finished in November 2018. Then, the process of writing literature review was done in three months and was finished on March 2019. It was longer than writing the background because the researcher needed more time to find the theories as for the basis of this research. Furthermore, collecting data took one week in April 2019. Afterwards, data analyzing, findings writing, and conclusion generating in this research were finished in a month after collecting the data.

Research Population, Sample, and Sampling Technique

Firstly, English Language Education Department students at one of the private universities in Yogyakarta was the population of this research. The total numbers of the population were 758 students. Then, the target population was English Language Education Department students of batch 2016, 2017, and 2018.

The researcher chose them as the target population because they were active students in the even semester of the academic year 2018/2019. Also, the researcher wanted to see the generalization on the use of electronic dictionary in this department. The total numbers of the target population were 543 students.

Thirdly, the researcher used random stratified sampling to get the sample of this research. Besides, the sample was selected by the researcher from the target population (Creswell, 2012). Then, the researcher used Slovin's formula. It was used to get the generalization of the sample (Tarigan, 2013). According to Narasinga (2014), the confidence interval of Slovin formula was 5%. The following is the formula of Slovin.

$$n = \frac{N}{1 + Ne^2}$$

n : total sample

N : total numbers of target population

e : confidence interval

Then, this is the calculation based on the formula above

$$\begin{aligned} n &= \frac{543}{1+543(0.05)^2} \\ &= \frac{543}{2.35} = 232 \end{aligned}$$

Afterwards, to get the proportionate sample from each stratum, the researcher used this formula:

$$s = \frac{pn}{N}$$

- s : total samples of each stratum
 p : total numbers of each stratum
 N : total numbers of the target population
 n : total sample

Batch	Calculation	Total Sample
2016	$\frac{94 \times 232}{543}$	40
2017	$\frac{205 \times 232}{543}$	88
2018	$\frac{244 \times 232}{543}$	104
Total		232

After calculating the proportionate stratification sample, the researcher found out the total sample of each stratum. Then, the total numbers of the target population of batch 2016 were 94 students and the total samples of this batch were 40 students. Afterwards, the total numbers of the target population of batch 2017 were 205 students and the total samples of batch 2017 were 88 students. Last, the total numbers of the target population of batch 2018 were 244 students. Based on the table above, the total samples of batch 2018 were 104 students.

Therefore, the total samples of this research were 232 students which come from batch 2016 (40 students), batch 2017 (88 students), and batch 2018 (104 students). In other words, they were respondents of this research.

Data Collection Technique

The technique of data collection was using questionnaire. The researcher adapted the questionnaire from previous studies from Dashtestani (2013), Hamouda (2013), and Kobayashi (2007). Cohen, Manion, and Morrison (2011) conveyed that questionnaire is useful to gather information and it was used extensively for collecting survey data. Then, the type of questionnaire used in this research was a structured questionnaire because it was suitable for quantitative research. Meanwhile, the kinds of questionnaire responses were open-ended questions, dichotomous questions, and rating scale questions. The open-ended and dichotomous questions were used to ask demographic information such as students number and class. According to Cohen, Manion, and Morrison (2011), degrees of response can be seen in the concept of rating scales. The rating scale questions were used to find out the level of agreement of the questionnaire items.

1	Strongly disagree
2	Disagree
3	Agree
4	Strongly Agree

Then, there were three parts on the questionnaire of this research. These are the parts of questionnaire.

<i>Table 3. Parts of Questionnaire</i>	
Demographic Information	<ul style="list-style-type: none"> ▪ Name ▪ Student Number ▪ <i>WhatsApp</i> Number ▪ Batch
The Factors that Influence English Language Education Department Students to Use Electronic Dictionary in Learning English	<ul style="list-style-type: none"> ▪ Q1 ▪ Q2 ▪ Q3 ▪ Q4 ▪ Q5 ▪ Q6 ▪ Q7 ▪ Q8
The Situations when English Language Education Department Students Need to Use Electronic Dictionary in Learning English	<ul style="list-style-type: none"> ▪ Q1 ▪ Q2 ▪ Q3 ▪ Q4 ▪ Q5 ▪ Q6 ▪ Q7 ▪ Q8 ▪ Q9 ▪ Q10 ▪ Q11 ▪ Q12 ▪ Q13 ▪ Q14

Data Collection Procedure

After doing a validity test to the instrument, the researcher came to the administration office of English Language Education Department to submit the permit for doing a survey. Then, when the permission letter was accepted by the department, the researcher sent message to some lecturers who teach students batch 2016, 2017, 2018 to collect data in their classes. Besides, data collection conducted in 22 and 23 April 2019 after the course. In collecting data, Bahasa Indonesia used as the language to communicate with the respondents. The questionnaire also used Bahasa Indonesia in order to make the respondents get deeper understanding of the questionnaire. It was because Bahasa Indonesia is their first language.

Furthermore, it was an online survey. For distributing the questionnaire, the researcher uploaded it on *Google Form*. Then, the researcher administered the link of *Google Form* directly to the respondents in the classroom. Then, the researcher was waiting for the respondents while they fulfilled the questionnaire directly in the classroom. It was the link of online survey questionnaire <https://bit.ly/2uDLdAV>.

This research used *Microsoft Excel 2016* and *IBM SPSS Statistics 22* to analyze the data. At first, after collecting data, the researcher input the collected data from *Microsoft Excel* to *SPSS*. In analyzing the data, the researcher used descriptive statistics. Descriptive statistics were used to find out central tendency, dispersal, and frequencies (Cohen et. al, 2011 as cited in Sholih, 2017). Central tendency refers to mean, median, and mode. Then, dispersal refers to the standard deviation. Furthermore, the used range score to conclude the results of this

research was the mean score. Rahmanningrum (2018) stated that the range score was used to classify the mean score result of each item based on the categories. This following formula was used to find the range score. The formula came from Supranto (2000).

$$c = \frac{Xn - X1}{K}$$

c : the range prediction (class width, class size, class length)

K : number of categories

Xn : maximum score of variable

$X1$: minimum score of variable

After calculating the range prediction of the first research question (the factors that influence English Language Education Department students to use electronic dictionary), the researcher found the range prediction score. This following is the result of calculation based on the Supranto (2010):

$$c = \frac{4 - 1}{3} = 1$$

Then, based on the calculation result of the range prediction above, the respondents' responses categories of the first research question (factors that influence students to use electronic dictionary) were as follows:

Table 4. Range Score of Research Question 1

Categories	Scale
Marginally influential	1.00 – 2.00
Moderately influential	2.01 – 3.01
Highly influential	3.02 – 4.00

Based on Table 4, there were three categories (marginally influential, moderately influential, and highly influential) in range prediction. The categories showed the influential level of English Language Education Department students' reason on the use of electronic dictionary in learning English.

Then, the calculation below was to find the range prediction of the second research question (situations when English Language Education Department students need to use of electronic dictionary):

$$c = \frac{4 - 1}{2} = 1.5$$

Based on the calculation result of the range prediction above, the respondents' responses categories of the second research question (situations when English Language Education Department students need to use electronic dictionary) were as follows:

Table 5. Range Score of Research Question 2

Categories	Scale
Disapprove	1.00 – 2.50
Approve	2.51 – 4.00

Based on Table 5, there were two categories (approve and disapprove) in range prediction of the second research question. The categories showed the level of agreement toward the situations when English Language Education Department students need to use of electronic dictionary.

Data Analysis

This part discussed the validity and reliability of the instrument. Also, it presented how the researcher analyzes the data.

Instrument validity. Before collecting the data, the researcher distributed the validator sheets to three experts for doing an expert judgement. In the expert judgement, there were experts giving comments and rating to the questionnaire items. Afterwards, the researcher did AIKEN test from Aiken (1980, as cited in Rahmanningrum, 2018) to see the questionnaire items validity. Furthermore, the formula below was the AIKEN test formula to see validity of the questionnaire.

$$V = \frac{\Sigma s}{n(c - 1)}$$

V : validity score

s : score from each expert minus the lowest score of categories

n : number of experts

c : number of categories

Then, the range score to validate the questionnaire divided into three levels. These are the valid score of AIKEN test (see table 6).

Table 6. Valid score of AIKEN test

Range Score	Categories
<0.40	Low validity
0.40 – 0.80	Average validity
>0.80	High validity

Table 7. Result of AIKEN test – Research Question 1.1

Test Items	V1	V2	V3	S1	S2	S3	ΣS	Validity Score	Validity
001	4	4	4	3	3	3	9	1	High
002	4	4	4	3	3	3	9	1	High
003	4	4	4	3	3	3	9	1	High
004	4	4	4	3	3	3	9	1	High
005	4	4	4	3	3	3	9	1	High
006	4	4	2	3	3	1	7	0.78	Average
007	4	4	4	3	3	3	9	1	High
008	3	4	4	2	3	3	8	0.89	High
009	4	4	1	3	3	0	6	0.67	Average
010	4	4	1	3	3	0	6	0.67	Average

Based on the table above, the results showed that the validity of questionnaire item which discusses the factors that influence English Language Education Department students to use electronic dictionary. There were 10 items validated. Seven items had high validity and three valid items had average validity (item 006, item 009, and item 010). Then, the comments for the validated

questionnaire which came from all the validators were positive. However, validator 3 (V3) wrote comments for item 009 and item 010. The first comment was “there was a similarity between the contents of item 008 and item 009”. Furthermore, validator 3 (V3) wrote that not all electronic dictionaries had visual features. Therefore, with some considerations, the researcher decided to delete item 009 and item 010. Looking at the comment from validator 3 was the first concern. Then, the validity score of these items was the second concern to delete item 009 and item 010. These are the validity result after deleting two items discussed.

Table 8. Result of AIKEN test – Research Question 1.2

Test Items	V1	V2	V3	S1	S2	S3	ΣS	Validity Score	Validity
001	4	4	4	3	3	3	9	1	High
002	4	4	4	3	3	3	9	1	High
003	4	4	4	3	3	3	9	1	High
004	4	4	4	3	3	3	9	1	High
005	4	4	4	3	3	3	9	1	High
006	4	4	2	3	3	1	7	0.78	Average
007	4	4	4	3	3	3	9	1	High
008	3	4	4	2	3	3	8	0.89	High

After deleting item 009 and 010, there were 8 items asked the respondents (see on Table 8). There was one average valid item (006) and 7 items with high validity. The highest score of this validity test was 1. Then, the lowest score of this validity test was 0.78.

Thereupon, AIKEN test result showed the validity of the second research question which discusses the situation when English Language Education

Department students need to use electronic dictionary. The result showed there were 20 validated items. The validators gave positive comments to these validated items. However, validator 3 (V3) gave one comment to item 020. The comment was “this statement is still confused, therefore it needs to be clarified”. The following table is the results of AIKEN test of the second research question.

Table 9. Result of AIKEN test – Research Question 2.1

Test Items	V1	V2	V3	S1	S2	S3	ΣS	Validity Score	Validity
001	4	4	4	3	3	3	9	1	High
002	4	4	4	3	3	3	9	1	High
003	4	4	4	3	3	3	9	1	High
004	4	4	4	3	3	3	9	1	High
005	4	4	4	3	3	3	9	1	High
006	4	4	4	3	3	3	9	1	High
007	4	4	4	3	3	3	9	1	High
008	4	4	4	3	3	3	9	1	High
009	4	4	4	3	3	3	9	1	High
010	4	4	4	3	3	3	9	1	High
011	4	4	4	3	3	3	9	1	High
012	4	4	4	3	3	3	9	1	High
013	4	4	4	3	3	3	9	1	High
014	4	4	4	3	3	3	9	1	High
015	4	4	4	3	3	3	9	1	High
016	4	4	4	3	3	3	9	1	High
017	4	4	4	3	3	3	9	1	High
018	4	4	4	3	3	3	9	1	High
019	4	4	4	3	3	3	9	1	High
020	4	4	4	3	3	3	9	1	High

In conclusion, based on Table 9, all the items had high validity. All the scores were 1. However, the researcher decided to remove item 001-006 because validator 1 (V1) suggested the researcher to put these items into demographic information part. These items discussed the types of electronic dictionary used by English Language Education Department students. This following is AIKEN test result table of the second research question after deleting item 001-006.

Table 10. Result of AIKEN test – Research Question 2.2

Test Items	V1	V2	V3	S1	S2	S3	ΣS	Validity Score	Validity
007	4	4	4	3	3	3	9	1	High
008	4	4	4	3	3	3	9	1	High
009	4	4	4	3	3	3	9	1	High
010	4	4	4	3	3	3	9	1	High
011	4	4	4	3	3	3	9	1	High
012	4	4	4	3	3	3	9	1	High
013	4	4	4	3	3	3	9	1	High
014	4	4	4	3	3	3	9	1	High
015	4	4	4	3	3	3	9	1	High
016	4	4	4	3	3	3	9	1	High
017	4	4	4	3	3	3	9	1	High
018	4	4	4	3	3	3	9	1	High
019	4	4	4	3	3	3	9	1	High
020	4	4	4	3	3	3	9	1	High

After deleting item 001-006, there were 14 items asked the respondents (see on Table 10). All the items had high validity with 1 as the validity score.

To sum up, there were 22 items on the instrument of this research. There were 8 items for the first research question and were 14 items for the second one.

Instrument reliability. After collecting data to the respondent, the researcher input the data collected to *Microsoft Excel*. Then, to find reliable data, the researcher did a reliability test on the SPSS by using Cronbach's Alpha test. According to Cohen et al. (2011), this is the table of the requirement to find reliable items.

Table 11. Reliability Categories	
Cronbach's Alpha	Categories
>0.90	Very highly reliable
0.80 – 0.90	Highly reliable
0.70 – 0.79	Reliable
0.60 – 0.69	Marginally/minimally reliable
<0.60	Unacceptably low reliability

Based on Table 12, the reliability test result showed overall values of Cronbach's Alpha (N of items = 22) was 0.862 and it was categorized as highly reliable (see appendix 3 to see the details).

Table 12. Reliability Statistics	
Cronbach's Alpha	N of Items
.862	22