

Chapter three

Methodology

In this chapter, the researcher explains the methodology of the research. The chapter discusses the research design, research setting, research instrument, and data analysis. The chapter also describes how appropriate the methodology was done in ELED of PUY. Then, the chapter clearly explained about research setting, research instrument like research population, research sampling, data collection procedure, and data analysis.

Research Design

The research was quantitative. The reasons to use quantitative research were based on three reasons. This research had been based on a problem from trend or phenomenon, the form of data for this research was the score, and this research explains the correlation between two variables or trends. According to Cresswell (2012), the quantitative method described research from problem depends on trends and explanations of the relationship between variables. Then, Cresswell (2012) said the quantitative research has the requirement there was the data became a major role in providing the ideas of the research problem and the form of data was the score. The researcher had got the problem from phenomenon based on students in ELED of PUY. Besides that, the data of this research was presented in the form of a number or score. Thus, quantitative research was suitable for this research because the

researcher had two variables, needs a score to find out the variable, and gets ideas from trends in a learning activity at ELED of PUY.

Further, the research had two variables. They were reading comprehension and vocabulary knowledge. The research used correlational design for research design because this research aims to find out if there was a correlation between two variables in the research. Based on Cresswell (2012), the correlational research design was a statistical test to make certain about two variables for data to know consistently. This reason was appropriate for the correlation design applied in this research.

Research setting

The researcher chose the research setting at English Language Education Department of Private University in Yogyakarta (ELED of PUY). The researcher had reasons; there was a phenomenon based on ELED of PUY students' experience in reading comprehension level and vocabulary knowledge. The research did in ELED of PUY because the problem of research based on an informal interviews with students in ELED of PUY and students in ELED of PUY batch 2016 more reading the reading material more than other batch in ELED of PUY. The research time in this research October until November to getting the data. These reasons made based on students of ELED of PUY were in line with the research setting to investigate students' reading comprehension level and students' vocabulary knowledge.

Population and sampling of the research

Research population. The researcher focused on students batch 2016 because students already fulfill the reasons for the population in this research. The phenomenon found by researcher was that students always find difficulties when finding new vocabulary and forget the mean of words; the data of research for reading comprehension level and vocabulary knowledge were based on the students of ELED of PUY batch 2016 because researcher got the point of reading comprehension level based on students batch 2016, and the reading comprehension level was taken from the ELED of PUY students batch 2016. The researcher chose students of ELED of PUY batch 2016 because students ELED of PUY batch 2016 had been reading materials using English language for their learning in ELED of PUY and had finished all classes in ELED of PUY. The total students in batch 2016 are 94 students who were divided into 3 classes. Each class consists of 25 to 35 students. The characteristic of the population students ELED of PUY batch 2016 were students have to be active to take class, students' reading some material of learning in English language, and the problem based on student experience in learning reading and vocabulary. Based on Cresswell (2012), the population was the broadest level of the group with an individual possesses to one characteristic that general and distinguishes for other groups. Thus, the research population in this research was 94 students that fulfill the characteristic for the population in the needed population.

Research sample. The sample was the most specific level from some level that gotten from the target population (Creswell, 2012). According to Cohen, Manion, and Morrison (2011), the sample was the smaller group or subset from the population in such a way that it has the same knowledge or not for gaining information. Random sampling was used in this research. Sampling was taken from a similar class selected it randomly by the researcher. Then, the researcher can get the sample when sample already submitted the test in URL. The URL contains the vocabulary test to students. The researcher needed phone numbers for some samples to give the URL for students. This was supported by Cohen, Manion, and Morison (2011) who believed that determining the sample had a method by looking at the margins which aim to adapt the population size. Then, in random sampling, the method to choose the sampling depends on the group on the table of Bartlet, Kotrlik, and Higgins (2001). The researcher gets the sample with manner first, researcher spread the URL for group WhatsApp and contact person and the students that submitted the URL became sample in this research.

The population of the research was students at ELED of PUY batch 2016 with 94 students. The researcher used a sample based on the table of Bartlet, Kotrlik, and Higgins (2001). The researcher needs a minimum of 73 students for research. The minimum number was based on the table that fixed from table Bartlett, Kortlik, and Higgins (2001) with the contents of the table are the table sample size, confidence level, and confidence intervals for random samples. The table has aims to know total

minimum for sample in research the correlational between students' reading comprehension level and students' vocabulary knowledge. The researcher had taken the number 73 with method focus on 100 for population and takes confidence level 90% and confidence interval 5%, so the minimum number was 73 students for the sample. After spreading the number for sample, researcher found out 80 students that appropriate for sample in this research. The aims of sampling make the researcher analyzing the participants in a population who had a similar condition based on the researcher's needs. Therefore, the random sampling was appropriate for this research because the sampling had the same treatment in terms of choosing its sampling in ELED of PUY batch 2016.

Research Instruments

The research had two instruments to collect the data. The research instrument was the students' reading comprehension test and the students' vocabulary knowledge test. The students' reading comprehension level score was based on the test that was done for the test in class International Language Teaching that the test did for every year specifically for TOEFL test. The reading comprehension level score was taken from one of TOEFL tests. The TOEFL test had been guaranteed for validity test and reliability test because the material of TOEFL test based on test for English language ability often used. The researcher used the document that contains the TOEFL score students ELED of PUY batch 2016. Thus, the researcher could find out the score of students reading comprehension level based on TOEFL document

students ELED of PUY batch 2016. The test must be valid to fulfill standards for research. The validity of the test was an important way to know the experience of research in quantitative research (Cohen, Manion, and Morrison. 2011). It helped considering the score done by the researcher in the test. The reading comprehension score was based on a test in class TOEFL but it focused on students' reading comprehension. The score owned by the researcher was determined by how reliable or unreliable the test was. The reliability of the score test was taken from Cronbach alpha. The researcher did not use the reliability test in this research because the researcher obtained the grade of reading comprehension level from the TOEFL test that was done by the students. The test was already reliable because the test was based on the TOEFL test. To answer the research question number two, vocabulary test from Nation (2012) was used; the vocabulary knowledge test was already valid and it was same with vocabulary test that is already reliable and validity because in the research before (Nation, 2012) already to test reliability and validity with the score of validity is 0.96.

Then, the other instrument was a vocabulary knowledge test based on Nation (2012) in form multiple choices in 14.000 versions with 140 multiple-choice and every 10 items representative 100 words for family level. The range of choice had captured as a range of responses for giving true statements (Cohen, Manion, and Morrison. 2011). Multiple choice was the way to answer the test for choosing the true answer with some choices 'a' or 'b' or 'c' or 'd'. The researcher used a vocabulary

test from Nation (2012) research that was valid and reliable because it has been tested for validity and reliability in Nation (2012) research. The tests have 140 questions. The score for each true answer is 100, so the score was calculated by the researcher to find out the score of vocabulary knowledge.

Data collection technique

The data collection technique used in this research was spread by the researcher by distributing the test by sharing the google form that contains test about vocabulary knowledge to ELED students of PUY batch 2016. The researcher spread the google form uniform resource locator (URL) in a group of class and contact person for every student in ELED of PUY batch 2016. The test in google form had a vocabulary knowledge test based on Nation (2012). Then, the test confirmed if they already finish. Then the test result was submitted to the researcher. The test was made in one premier data that was calculated after data collection. The test of vocabulary knowledge had been assured as the students' privacy because students just fill in their name, student's number, and gender in completing the data. Then, the researcher tested students using the vocabulary test, and only the researcher knows the students' vocabulary knowledge scores. There was a direction in completing the test.

Data collection procedure

The data collection procedure, this part explains step by step of the researcher gets the result of research. The first step the researcher finds out the test for respondents. The researcher found out the test able to vocabulary knowledge test (for

reading comprehension level test, researcher get the score based URL ELED of PUY. The URL has been shown the result of TOEFL test.). The test was used already and was considered valid and reliable. The second step was the researcher take the vocabulary knowledge test to google form to make a link that needed for the researcher. The link would spread for respondents. The third step for a researcher was contacted every respondent and require help to spread a link for this research. Besides that, the fourth step researcher waiting for the result of test and check the result that already finishes. After all of the respondents fulfill the test, the researcher calculated the vocabulary knowledge test and make some tables appropriate for research needs. The next step researcher calculated the normality test, the linearity test, and the correlational test use SPSS20. The last step, all of the results based on SPSS20 would be describe adjust for result in SPSS20. For all steps, the researcher has been getting the last result to know the correlation between students' reading comprehension level and students' vocabulary knowledge.

Data analysis

This research had three questions that must be answered. The researcher analyzed the students' reading comprehension level, students' vocabulary knowledge, and the correlation between students' reading comprehension level, and their vocabulary knowledge. Then, to answer the first question on "how the students reading comprehension level?", the researcher found to define the category level. The category was divided into four categories called intermediate, low intermediate, high

intermediate and advanced. It depends on the score of students on their reading comprehension level test.

Level	Score
Intermediate	310-420
Low intermediate	420-480
High intermediate	480-520
Advanced	520-677

Table 3.1 Reading Comprehension score levels are based on reading part in Genius TOEFL test (2018).

The students' reading comprehension level was used range score to conclude for finding the data. The researcher used the grade for analyzing the students' reading comprehension level ability from the test results. The test was done from the reading comprehension level in a TOEFL test.

The second question needed a questionnaire for answering the question of students' vocabulary knowledge. Based on Nation (2012), the total score in 140 item test with form multiple choices is 100 to find the learners' total vocabulary size. The score is obtained by multiplying one current answer with 100. For example the true answer is 35x100 = 3.500, so the score of vocabulary is 3.500. According to Nation (2012), the vocabulary size is classified into three levels. They are high-frequency, mid-frequency, and low-frequency words.

Level	1000-word family lists	Learning Procedures
High Frequency	1000-2000	Reading graded readers deliberate teaching and learning
Mid Frequency	3000-9000	Reading mid-frequency readers deliberate learning
Low Frequency	10.000 – 14.000	Wide reading specialized study of a subject area

Table 3.2 Vocabulary knowledge score levels based on Nation (2012).

Based on the table, the meaning of word family in the table is first the research shown the word give evidence, students reading know the one word represents the word family lists, and the word in the test makes word-building when every word representative in the family of word. Then, in the learning procedures have means the next step in learning if the students get the level. The mean of level high frequency is the score of vocabulary was 1000-2000 word family lists that have mean in the next learning procedure for readers more be deliberate to reading in activity teaching and learning. The level of mid-frequency is the score of vocabulary is 3000-9000 word family lists that have means in leaning procedure readers can deliberate to reading in activity teaching and learning. The last, level low frequency was the score of vocabulary was 10.000-14.000 word family lists that have means in

readers have side knowledge in the area of study. Thus, the table can give knowledge about how much vocabulary knowledge for students.

The data from students' reading comprehension level and their vocabulary knowledge were used to know the normality of the data and assess the correlation. Based on Das and Imon (2016), to know the normality of the data, the researcher must assess the normality data. Researcher had used Kolmogorov-Smirnov to look for value (sig.) about data if normal data had a significance value of 0.05 (sig. > 0.05). However, the normality data aimed to ensure if the data were already normal to be calculated from two data.

The last question was around what the correlation between students' reading comprehension and students' vocabulary knowledge. The application of correlational calculation data was SPSS 2.0. Researcher used SPSS 2.0 for calculating and proving the correlation between both reading comprehension and vocabulary knowledge. After that, the grade of students' reading comprehension and vocabulary knowledge were matched in one of scale to know it was correlation use correlational in SPSS 2.0. Then the researcher get the score range data in students' reading comprehension level and students' vocabulary knowledge. Researcher would conclude the inferential statistics data using Pearson Product Moment Correlation. The score range was provided from data analysis of inferential data used SPSS 2.0 to calculate the data. According to Cohen, Manion, and Morrison (2011), the researcher used H alternative that had meaning a statistically the significance positive correlation between students

reading comprehension level and students vocabulary knowledge at English Language Education Department of Private University in Yogyakarta

Therefore, the researcher should research at ELED of PUY using correlational design to prove the hypothesis. In the last step, when the researcher gets the data from two variables then researcher was assessed correlational point using SPSS 2.0 to know major or minor grade correlational. The grade of correlational had been given by Cohen, Manion, and Morrison (2011), there are:

Range	Score
Low	0.20 – 0.35
Moderate	0.36- 0.65
High	0.66- 0.85
Very high	0.86- 1.00

Table 3.3 the correlational grade from Cohen, Manion, and Morrison (2011)

Based on the table, the data could be either positive or negative correlation. Cresswell (2012) indicated a “1” correlation coefficient and move in a same direction between two variables shows the positive correlation. This depends on the result if the score has the same indication to positive score that have mean of the score in positive correlation. Then according to Cresswell (2012) said if the score less than “1” for correlation coefficient, the score can move between two variable and in the opposite direction was negative correlation. The score can became negative

correlation if the score have different result, as the score variable 'y' less than variable 'x', so the result of correlation is negative correlation. Thus, the result of study is researcher to know based on the score that have been calculated.