Chapter Three

Research Methodology

This chapter elucidates the methodology of the research. It includes research design, research setting, research population, sample, and sampling technique, data gathering method, data gathering procedure, and data analysis. The research design section explains the research methodology and design used in the paper. The research setting section includes the place and the target time of conducting the research. The research population and sample section consist the population, target population, the number of sample, and the sampling technique.

Research Design

There are three purposes of the study such as to know the level of students' participation, to identify their learning achievement and to find out the correlation between student participation and learning achievement. This study used quantitative research because this study tries to find the trends' perception on how students consider an issue related to the students' classroom participation. Besides, this study needs to collect a numeric data from substantial number of people to connect the variables using statistic. As mentioned by Deslandes and Bertrand (2005), one of the purposes of quantitative research is to analyze trends or to link variables using statistical and describing a research matter through a description of trends.

The research design of the study is correlational research design. The researcher used correlational design to quantify the connection between two or more variables. Besides, the researcher wanted to know the relationship among variables. Correlational research design provides the statistic test to depict the

level of association among variables (Creswell, 2012). Type of correlational design used in this study is explanatory correlational design. The researcher intended to identify the degree of association among variable in this study. The study aims to determine whether the changes of one variable might affect the other variable and to see the correlation between them. According to Creswell (2012),"Explanatory research design is a correlational design in which the researcher interested in the extent to which two variables (or more) co-vary, that is, where changes in one variable are reflected in changes in the other" (p. 340).

Research Setting

The research was conducted in an English Language Education Department at one private university in Yogyakarta. There were three reasons why the researcher chose this private university in Yogyakarta as the research setting. Firstly, the researcher wanted to find out how the student participates in the classroom since the curriculum in that university was focused on the student-centered learning. The student-centered learning offered more chance for the student to participate actively in classroom activity. A teacher would provide various approach just to make the student felt enjoy to participate in class. So, the researcher decided to take the data from one private university in Yogyakarta. Secondly, there was no studies which discussed about the correlation between the students' participation and their learning achievement in one private university in Yogyakarta. Thirdly, the place was accessible to conduct a research since the researcher had experienced of being the student in that university. Thus, the researcher decided to choose an English Language Education Department at one private university in Yogyakarta as the setting of the study.

The study was conducted on May 2018. It took two weeks to collect and analyzed the data. It was appropriate to carry the research in May because the students were in the middle of semester which ease the researcher to collect the data. In addition, the questionnaire was distributed to the respondents effectively on May, 2018.

Research Population and Sampling

The researcher decided the population of the research through calculating the total population and picking a sample based on the formula. In this part, the researcher explains the research population and sampling. The researcher also presents some theories from experts. The explanations are presented below:

Research Population. The researcher collected the data from certain population to gain precise result. The population for this research was 385 students in English Language Education Department at one private university in Yogyakarta. The total number of target population in the six semester classes was 118 students. The researcher chose the students in the sixth semester because they experienced many types of students' classroom participation since they had been studying at an English Language Education Department in one private university for two and half years. The researcher focused on examining the students in the sixth semesters to acquire a clear justification of students' participation. Therefore, the study took a specific population to gather the data in order to obtain an accurate data.

Research Sample. After selecting the number of target population, it revealed that the sample was 95 students. The sample was taken from the random table proposed by Cohen, Manion, and Morrison (2011) in which if the population size is 118 students while permitting for a 5% error rate at 95 confidence level, 95 students would be the sample of the research. From the tables of total sampling with 118 total number of target population, 95 students are chosen as the sample of the study. At first, the researcher spread the questionnaire to the four classes of student batch 2015. The number of questionnaire returned to the researcher was 92 sheets because not all students attend the class. In fact, there were three students from batch 2014 who fill out the questionnaire. So, the researcher took another way to fulfill the intended sample through distributing the questionnaire via online media to the six students. Finally, the total respondent of the research were 95 students.

Simple random sampling is the sampling technique used in this research. The researcher wanted to give an equal opportunity of being nominated for the member of the target population as the sample of the study. According to Cohen, Manion, and Morrison (2011), simple random sampling is the similar number of every member in the population under study to be selected, and it is not affected by the choice of other members of the populations.

Data Collection Methods

The data collection method of the research was a survey using questionnaire and score documentation. The questionnaire was used to ascertain the students' participation whereas the score was documented to know the students' learning achievement. The researcher used questionnaires to collect

review information in the form of numerical data. Wilson and McLean as cited in Cohen (2011) mentioned that the questionnaire as a broadly used method for gathering survey statistics without the existence of the researcher which offer numerical data. The researcher distributed the questionnaire directly to the students in order to provide more precise data. The researcher asked the students to fill the questionnaire based on their experiences, because the result of the questionnaire was connected to the GPA score.

Research Instruments

In gathering the data, the researcher used two instruments. The instruments are questionnaire and score documentation. In this part, the researcher explains the two instruments used in this research. The explanations are presented below:

Questionnaires. One of the research instruments that can be presented in a tabular form is a questionnaire. Taylor-Powell (1998) acknowledged a questionnaire as a device to draw out information that can be tabulated and discussed. The researcher employed questionnaire to obtain the information about students' opinion. After collecting the data, the result of the questionnaire would be appeared in a form of table.

The questionnaire of the research was adapted from a doctoral dissertation in communications studies journal, page 344, 2009, entitled, "Students' Classroom Engagement: Rethinking Participating Grades and Student Silence" by Kevin R. Meyer. One of the reasons why the researcher decided to adapt Meyers' questionnaires was because it had the same topic discussed which was related to the students' classroom participation. It also had a number of statements which ease the researcher to either use it all or just pick some statements. There were 85

total items in the Meyer's questionnaire. From 85 total items of the Meyers' questionnaire, the researcher only took 19 items that was suitable to the research. The researcher divided 19 items to five categories such as the demographic information, activities in classroom participation, frequency of classroom participation, characteristic of students' classroom participation, and factors of classroom participation (see Appendix 1).

There were 19 total of statements that were translated into Indonesian language to ease the respondents in understanding the questionnaire. The researcher decided to use Indonesian language, because English language is the foreign language for students in one private university in Yogyakarta. The statements were presented in a form of Indonesia language without any change on the content. Thus, by using Indonesia language in 19 statements of the questionnaire, it helped the students to avoid misinterpreting within understanding the questions.

The researcher used structured-questionnaires to ease the respondents in answering the questions directly with provided response. Structured questionnaire allows the respondent to focus directly on the question (Cohen, 2011). Types of response used in the questionnaire was likert scale. Likert scale was used for questionnaire item number 1 up to 19. It aimed to ease the respondents in choosing one of several rank selection. Based on Dittrich et al. (2005), likert scale is aimed to examine the respondents' point of view through responding to some categorical scales. Thus, the researcher used a questionnaire in which the respondent focused on choosing the available answer rather than developing the answer.

The questionnaire has 19 total statements used to identify the activities in classroom participation, the frequency of classroom participation, the characteristic of students' classroom participation, and the factors of classroom participation. There were five categories in the questionnaire as seen in the table below:

Table 3.1

Questionnaire items

Part	Categories	Number of items
One	Demographic information	Q1, Q2, and Q3
Two	Activities in classroom participation	Q1, Q2, and Q3
Three	Frequency of classroom participation	Q4, Q5, Q6, Q7, and Q8
Four	Characteristic of students' classroom participation	Q9, Q10, Q11, Q12, Q13, and Q14.
Five	Factors of classroom participation	Q15, Q16, Q17, Q18, and Q19

There were five parts in the questionnaire. All of the five parts used likert scale in which the student asked to give checklist in the questionnaire. The first part was related to the demographic information such as name, students' number, and class whereas the respondents wrote their identity. The second part aimed to know the students' activities in classroom participation. The third part is used to know the frequency of classroom participation. The fourth part was about the characteristic of students' classroom participation. The fifth part was aimed to know the factors of classroom participation.

Questionnaire item 1 up to 19 had four selection scales such as strongly disagree, disagree, agree, and strongly agree. The respondents were asked to

choose one answer from several choices in a form of scale as shown in the

following table:

Table 3.2	
Scoring of Likert scale	
Scale	**Score**
Strongly Disagree	1
Disagree	2
Agree	3
Strongly Agree	4

Score documentation. Besides adopting questionnaire, the researcher also

used the students' grade point average (GPA) in sixth semester to gather the data.

In order to get the GPA score, the researcher asked permission to the academic

information system. GPA is also known as the achievement index that is obtained

to support the data of the study. According to Online websites of Indonesian-

English Dictionary, score represents "a number or letter indicating quality

(especially of a student's performance)". Merriam-Webster online dictionary on

website also defined documentation as an action or instrument or authentication

with documents. Thus, the academic score was employed as the instrument to

measure the learning achievement of each students.

Data Collection Procedure

This section provides information about the procedures on how the

researcher collected the data. The data is collected within a week. Before

spreading the questionnaire, the researcher asked permission to the teacher to distribute the questionnaires in the beginning of the teaching and learning process. At first, the researcher gave some instructions on how to fill the questionnaire and what the purpose of the questionnaire is. Then, the researcher started to distribute the questionnaire to the students. After they completed the questionnaire, the researcher collected all the questionnaire sheets.

Initially, the researcher targeted to take the data to the 95 students in four classes. The number of questionnaire sheet returned to the researcher was 92. It turns out that there were 3 students batch 2014 who fill out the questionnaire. So, the researcher decided to distribute the questionnaire to the six students of batch 2015 who did not come to the class. Finally, all of the 95 students had fill out the questionnaire.

Validity and reliability of data. One of the ways to measure whether the instrument of the study can be trustworthy or not is by doing validity test. Black and Champion (1976) defined validity as "The property of a measure that allows the researcher to say that the instrument measures what he says it measures". The researcher did expert judgment to identify the validity of the data. The researcher asked two teachers related to the field to measure the questionnaire by giving a range score. It aimed to know whether or not the statement of the questionnaire is appropriate to the research question.

In order to avoid misinterpretation about the statements that were translated into Indonesian language, the researcher asked the supervisor to re-check the statements. The result shows the statements number 14, 15, and 16 needed to be modified from negative statement into positive statement. In addition, the

researcher did piloting to five respondents before distributing the questionnaire to ensure that the questionnaire can be well-understood. After piloting, it showed that the statement had been understood by all of the respondent.

Reliability. A data is considered reliable if the respondent's answer is consistent from time to time. Reliability proves the data information of one's research into real context. Sugiharto and Situnjak (2006) defined reliability as an instrument of the research to justify that the collected information can unfold the information in the reality field. This study used the result of the Cronbach's Alpha to examine the reliability instrument. The Cronbach's Alpha is "the correlation of each item with the sum of all the other relevant items for multi-item scales to measure amongst item" (Cohen & Manion, 2011). In accordance with Manion and Morrison (2011), the item is considered reliable if the score fulfilled is more than 0.7 as shown in the following table:

Table 3.3

Criteria of Cronbach's Alpha

Cronbach's Alpha	Criteria
>0.90	Very highly reliable
0.80-0.89	Highly reliable
0.70-0.79	Reliable
0.60-0.69	Low reliable
<0.60	Unacceptably reliable

There were 19 total items of questionnaire that was distributed to 95 respondents. After analyzing the reliability of the data using SPSS, the first result of the reliability test showed that the value is 0.627 which count as low reliable as shown in the table below:

Table 3.4

Reliability Statistics

Cronbach's Alpha	N of Items
.627	19

There was an item that was higher than the Cronbach's Alpha score which means the item is not reliable (see appendix 3). To make it reliable, the item that has higher Cronbach's Alpha score compared to the total items must be deleted. It can be inferred that item number 4, 13, 16, 18 must be deleted, because those statements were higher than the total item of Cronbah's Alpha score. After

deleting the three statements, the reliability score rose up to 0.718 which means

all of the 15 item were reliable as seen in the following table.

Table 3.5 *The Final Value of Reliability Statistics*

Cronbach's Alpha	N of Items
.718	15

Data Analysis

The descriptive and inferential analysis were applied to analyze the data of

the research. Both data analysis types were used specifically for quantitative

research design. Descriptive analysis was employed to analyze the first and

second research question related to the students' classroom participation and

learning achievement. According to Cohen et al.(2011), descriptive statistic is

often used to find the frequencies, percentages, and forms of graphical

presentation. The third research question was analyzed using inferential analysis

to know the correlation between students' classroom participation and their

learning achievement.

The researcher wanted to find the correlation among two variables

concerning the student participation and their learning achievement through

Pearson product moment via SPSS version 22.0. Pearson product moment was the

statistical analysis employed to analyze the data in this study. Pearson product

moment aims to measure the statistical analysis through product moment

correlation coefficient to find out the connection among two variables if the

association is linear (Creswell, 2012, pp. 337-360). Correlating two variables to seek its relationship is also called as bivariate correlation.

The students' classroom participation. Descriptive statistic was the data analysis used to analyze the first research question about classroom participation. This kind of statistic is intended to find out the frequencies, dispersal, central tendency of the data including means, modes, medians, and many more. The mean value can be obtained through analyzing the data in SPSS 22.0. The researcher used Supranto's formula (2000) to determine the value of the students' classroom participation as seen in the following table:

Table 3.6 *Supranto's Formula*
$$C = \frac{Xn - X1}{K}$$

C = Range prediction

K = Total category

Xn = Maximum

X1 = Minimum

The researcher classified the value of students' classroom participation into three categories. To get the value, the researcher added the range score from Supranto's formula to the minimum score of the data which then resulting the three categories for classroom participation. The categories are presented in the table below:

Table 3.7 *Categories of The Students' Classroom Participation*

Value	Category
46.6 – 63.0	High
29.8 – 46.5	Moderate
13.0 – 29.7	Low

From the table above, it can be inferred that if the mean score is 46.6-63.0, it includes to the highest level of students' classroom participation. Otherwise, if the mean score is 29.8-46.5, it means that the level of students' classroom participation is reputed as moderate. Then, the level of classroom participation is categorized as the lowest if the mean score gained 13.0-29.7.

To grasp which item of questionnaire is belonged into high or low category of classroom participation, the researcher made a category for classroom participation using Supranto's formula. The categories are presented in the following table.

Table 3.8

Categories of the frequency of classroom participation	
Value	**Category**
3.01 – 4.00	High
2.01 – 3.00	Moderate
1.00 – 2.00	Low

The categories above were divided according to the scale options in the questionnaire. There are 4 scale options in the questionnaire that has different score (see table 3.2).

Learning Achievement. In determining the level of students' learning achievement, the researcher analyzed the data using descriptive statistic. Here, the researcher used the same way as performed in dividing the category of classroom participation above. The category of learning achievement score was obtained from the book of *Panduan Akademik* in English Language Education Department of one private university in Yogyakarta on 2013-2014. The category of learning achievement is presented below:

Table 3.9

Category of Students' Learning Achievement

Value	Category
3.51 – 4.00	Very High / Cumlaude
2.76 – 3.50	High / Very Satisfy
2.00 – 2.75	Moderate / Satisfy
Less than 2.00	Low

The correlation between students' classroom participation and learning achievement. Inferential analysis was the data analysis used to analyze the last research question concerning on the correlation between students' classroom participation and learning achievement. In addition, Pearson product moment (r) was the data analysis used to investigate whether students' classroom participation and learning achievement has a correlation or not. A research by Creswell (2012) illustrated the Pearson product coefficient (r) had a range values from +1 to -1 in which if the value is -1.0, means there is no any association among variable while if the value is more than +1.0, means that there is a positive association among two variables.

Before analyzing the data using inferential statistic to find the answer for the last research question, the researcher administered an assumption test to prove

the hypothesis of the research. One of the methods to test the hypothesis of the research is to do the normality test in SPSS 22.0. It aimed to see whether the data is normal or otherwise. Cohen et al. (2011) claimed one of the purposes of normality test is to decide whether the data distribution is normal or otherwise. The data considered normal if the value of significance was greater than 0.05.

Normality. Normality test was used to prove whether the data has normal data distribution or otherwise. The normality value can be seen in the skewness score in descriptive statistic. The data considered normal if the range score of the skewness value is amongst -1 and +1.

Hypotheses testing. To testify whether there is a correlation or not, hypothesis testing was used to examine each variable in the research. The researcher used SPSS version 22.0 and Pearson Product Moment Correlation (r) in examining the hypothesis. First, the researcher inputted the data into SPSS which resulting the level of significance. The score of significance (r value) must be greater than the level of significance (r-table) to prove that there was a correlation between two variables. The null hypothesis can be approved if the sig value (r-value) $\geq$ 0.05. in contrast, it can be declined if the sig (r-value) <0.05.

Subsequently, to examine the degree of association, the researcher made a category of correlation criteria into four categories based on Cohen et al. (2011). The criteria are presented as follows:

Table 3.10

Correlation Criteria

Coefficient of Correlation (r)	Categories
0.86 - above	Very Strong
0.66 – 0.85	Strong
0.36 – 0.65	Weak
0.20 – 0.35	Very Weak