CHAPTER III
METHODOLOGY OF RESEARCH

A. Place and Time of Research

In this research, the researcher determined place at State Junior High School One Rajeg in Tangerang, Banten. The place was chosen by researcher, because this place is a favorite school, there are many students who want to enter this school, all teachers are of good quality, almost all are undergraduate (S1) and some are already undergraduate (S2) and most importantly because this school has started actively using WhatsApp media during the online learning process taken.

The distribution of questionnaire carried out in June 2021 until the end. The researcher distributed the first questionnaire to the respondents to test the validity of the questionnaire. After obtaining the first data, it is tested for validity and reliability. Then, the researcher distributed for the second questionnaire from the question items from the validity and reliable test results.

Tabel. 1

Timeline of research

Month	June	
Date	20	26
Carried out data for validation	✓	
Carried out data after validation		✓

B. Research Method

In common, research is the notion of inquiring into, or investigating something in a systematic manner[36]. In occasionally describe research as a scientifi`c and systematic search for relevant information on a particular topic.[37] The research methods are the strategic or technique, processes utilized in research. It is very important to help in every research, to explore the phenomena that occur, to provide solutions to the problems that occur.

The appropriate method quite needed for this research and give more specifically data is quantitative. Quantitative study was tested hypotheses or solved problems on the basis of theoretical education by measuring using statistical data.[38] Quantitative research is an approach for testing objective theories by examining the relationship among variables.[39] Quantitative research is a study to provide direction for the research questions or hypotheses. Quantitative study begins with a problem statement and the formation of a hypothesis, a literature review, and a quantitative data analysis. So, the researcher must enclose all of the discussion in chapter II clearly.

The type of research method used in this research is correlational study. The correlational design in which investigators is used the correlational statistic to describe and measure the degree or association (or relationship) between two or more variables or sets of scores. Correlation study is the relationship of two or more variables,

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[36] Sharan B. Merriam dan Elizabeth J. Tisdell, *Qualitative Research*, (San Francisco: Jossey-Bass), 2016,3.

[37] C.R.Kothari, *Research Methodology*, (New Age International) , 2004, 1.

[38] Nurul Zuriah, *Metodologi Penelitian Sosial dan Pendidikan Teori dan Aplikasi* (Jakarta: PT.Bumi Aksara, 2007), 101.

[39] John W. Creswell and John David Creswell, *Research Design Qualitative, Quantitative, and Mix Methods Approaches* (California: SAGE, 2018), 41.

the extent to which variations in one variable are related to variations in other variables. Correlation studies, which aim to test the hypothesis, are carried out by measuring a number of variables and calculating the correlation coefficient between these variables, in order to determine which variables are correlated.[40] Leely and Ormrod in journal of felt that it is crucial to observe the extent to which a researcher discovers statistical correlation between two characteristics depending on some degree of how well those characteristics have been calculated.[41]

The determination of the quantitative research method with the correlation study approach is based on the suitability of the title shown to find out how the relationship between the use of the WhatsApp group (independent variable) and student achievement (the dependent variable) in Reading Comprehension learning seen from student perceptions.

C. Population and Sample

1. Population and Sample

Population is the total collection of element about which we wish to make some inference. A population element is the subject on which the measurement is being taken.[42] In this case the population is a generalization area consisting of: objects / subjects that have a certain quantity and characteristics that are determined by the researcher to be studied and draw conclusions. The population of this study was all students of class VII at SMPN 1

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[40] Salim dan Hadir, *Penelitian Pendidikan* (Jakarta: Kencana, 2019), 53.
[41] Carrie Williams, "Research Methods", *Journal of Business & Economic Research*, Vol.V, No.3, (2007),67.
[42] Sugiyono, *Metode Penelitian Pendidikan*, (Bandung: ALFABETA, 2019), 145.

Rajeg. The population selection is based on the following considerations:

a. The location of the school is easy to reach by researchers

b. SMPN 1 Rajeg has used WhatsApp for learning English

c. Population criteria allow for carrying out research

The sample is part of the population that has certain characteristics in accordance with the circumstances under study. The sampling technique used was proportionate stratified random sampling. This technique is used when the population has members / elements that are not homogeneous and proportionally stratified.

It is often suggested that one should include at least 30 subjects in a sample since this number permits the use of large sample statistics. In experimental research, one should select a sample that will permit at least 30 in each group. Descriptive research typically uses larger samples; it is sometimes suggested that one should select 10-20 per cent of the accessible population for the sample.[43] Suharsimi Arikunto stated that if the subject is lacking of 100, it is better to take all, so the research is a population study. Furthermore, if the subject is large (more than 100 people) can use the sample. According to her, samples have taken between 10% - 15% to 20% - 25% or even more than 25% of the existing number.[44]

In taking the sample researchers used 10%. Based on student data at SMP N 1 Rajeg the total amount is known VII grade is

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[43] Yogesh Kumai Singh, Fundamental of Research Methodology and Statistic (New Delhi: New Age International, 2006), 94.

[44] Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik* (Jakarta: PT Rineka Cipta, 2010), 112.

310 students. Then the researcher will take a sample of 10% of the total population there is 310 x 10% = 31 students who will be sample.

D. Research Variable

1. Concept Definition

A concept is a generally accepted collection of meanings or characteristics associated with certain events, objects, conditions, situations, and behaviors. There are some variables, Students' Perception, WhatsApp group, Online Learning, and Reading Comprehension, that would be researched in this research. Students' perception is a process of students' understanding of the stimulus obtained through the five senses, then interpreted. Online learning is learning that uses several learning applications and social networks. Online learning is learning that is done without face-to-face, but through an available platform. WhatsApp group is one of the WhatsApp features. WhatsApp group includes media social platform that can help in online learning. Reading comprehension is one of the English skills that must be haven by students.

Departing from various explanations for each variable, the researcher will examine students' perceptions of the use of WhatsApp groups in online reading comprehension learning and to find the correlation between the uses of WhatsApp group with students' achievement.

2. Operasional Definition

Operasional definition is specifies precisely how a concept will be measured – the operations it will perform. It is process

whereby researchers specify empirical concepts that can be taken as indicators of the attributes of a concept.

a. Students' Perception on the use of WhatsApp in online reading comprehension learning

Students' perception in this research is not only to search their perception and students' achievement. How the students' perception include students' attitude as a determiner the relation between the uses of WhatsApp group towards students' achievement.

b. Online learning that used in reading comprehension

The researcher looked for the answer from questionnaire that given to students about is the reading comprehension could be learned through online learning. Do students like online learning, do students find it easy to learn reading comprehension through the application.

c. The use of WhatsApp toward Students achievement

In this research will be find the correlation between the use of WhatsApp group toward students achievement. The researcher gives the some question to answers through questionnaire. T hen will be measured to find the correlation.

E. Instrument and Collecting Data

Instrument for this research is using Questionnaire. Questionnaire is a data collection technique which is done by giving a set of questions or written statements to the respondent to answer. Later the respondent will be answers the questions through the Google form. Questionnaire is a set list of questions that several students who are the subjects of research are asked in order to collect information needed. For this reason, this study uses a quantitative

approach, this is in accordance with the opinion of which states that quantitative research is an approach to testing objective theory by testing the relationship between variables. These variables, in turn, can be measured using instruments, so that the total data can be analyzed using statistical procedures.

Questionnaire is a form that participants in study complete and return to the researcher. The questionnaire is a survey to find general information. To collect data with questionnaire, this research used online system. The online system will be use Google Form to obtain data or information. This is done cause economies, more flexible and easier.

Tabel. 2

Research Instrument Grid

No	Variable	Aspects	Indicators	Total of Grains	SA	A	SA	D	SD
1.	Online Learning	Perceive usefulness	1. The quality of learning activity was excellent	3 2					
			2. The feedback provided by the teacher is useful	2					

			3. More appropriat e to use in understand ing reading when taken a learn/studi ed						
		Easiness of online learning	4. Easy to understand in every discussion during online learning 5. It can use everywher e and every time	2 3					
		Compared to online learning and offline	6. The course the same as if it was on	1 1					

		learning	school.						
			7. Offline learning makes it easier to understand the subject matter.	1					
			8. Online learning easier to understand the subject matter.						
		Students' Attitudes	9. Comfortable during online learning	3					
		Students' Achievement	10. Good results	2					
2	WhatsApp	Frequency	11. Using	2					

		of using whatsapp	whatsapp between 1 hour until 2 hours in everyday	2					
			12. Using whatsapp more than 2 hours in everyday						
		Preference on WhatsApp use	13. Prefer to use WhatsApp in English learning	2					
			14. Whatsapp cheaper than another media/application	1					
			15. All of features can used	1					

		to all of English skill						
3.	Reading Comprehension	The implementation	16. Prefer learn reading use WhatsApp group	2					
		The use of strategy	17. Kinds of strategy	2					

Perception measurement can be done by using a Likert scale, it is means use questionnaire to collect the data.[45] Likert scale is a scale can be used to measure attitudes, opinions, and perceptions of a person or group of people about a symptom or phenomenon. In researching perception someone against an object or events, then using a Likert scale 1- 5, namely by choice 1) Strongly Agree (SA) scores 5, 2) Agree (A) get a score of 4, 3) Simply Agree (SA) obtained a score of 3, 4) Disagree (D) obtained a score of 2, and 5) Very Poor Agree (VPA) to get a score of 1. From acquisition of respondents' answers regarding perceptions being researched, then the next one will be perceptual measurements were taken. According to Azwar perception measurement criteria consisting of, 1) positive perception if the total value of the perception score is obtained from respondents ≥ from the total mean, and 2) the perception is stated negative if the total score obtained from respondents <total mean.

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[45] Sugiyono, *Metode Penelitian Pendidikan* (Bandung: ALFABETA, 2019),167.

1. **Testing the Validity and Reliability of the instrument**

   a. **Validity Test**

   Validity is the term used to measure the suitability of an empirical indicator with the conceptual definition of the construct that the indicator should measure. So, the validity test is a test that refers to the aspects of the accuracy and accuracy of the measurement results. In quantitative research validity is the extent to which any measuring instrument measures what it is intended to measure. [46] The validity test carried out in this study is the instrument validity test. The instrument validity test means the measuring instrument used to obtain data (measure) the validity level of the instrument. A valid instrument means an instrument that can be used to measure what should be measured. The factor that is sufficiently influential on the size of the correlation coefficient is the reliability of the instruments used in the measurement.[47]

   To test the validity of the instrument, the product moment correlation technical formula is used:

   $$r_{xy} = \frac{\Sigma_{xy}}{\sqrt{(\Sigma x^2)(\Sigma y^2)}}$$

   r_{xy}= The number of cross products (product of the moment) between the cell frequency (f) with x 'and y'.
   Σ_{xy}= the sum results in the variable x and the variable y.

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[46] Haradhan Mohajan, *Two Creiteria for Good Measurement in Research: Validity and Reliability* (Bangladesh: MPRA, 2017), 14.

[47] Salim dan Hadir, *Penelitian Pendidikan* (Jakarta: Kencana, 2019), 54.

$\sum x^2 =$ the number of variables x squared.
$\sum y^2 =$ the number of the variable y squared.

The validity test will be carried out in class VII SMPN 1 Rajeg with a total of 31 test samples. The reason the researcher chose class VIII as an object for validity testing, is because class VII has similar characteristics to the sample, namely using WhatsApp social media in learning. However, it has differences, namely from the class level and the length of time using WhatsApp.

Tabel.3

Validation

Variable	Question Items	rhitung	Rtabel	Condition	Conclusion
Online Learning	Item 1	0,5	0,355	rhitung>rtabel	Valid
	Item 2	0,304	0,355	rhitung<rtabel	No valid
	Item 3	0,462	0,355	rhitung>rtabel	Valid
	Item 4	0,107	0,355	rhitung<rtabel	No valid
	Item 5	0,352	0,355	rhitung<rtabel	No valid
	Item 6	0,591	0,355	rhitung>rtabel	Valid
	Item 7	0,213	0,355	rhitung<rtabel	No valid

	Item 8	0,507	0,355	rhitung>rtabel	Valid
	Item 9	0,596	0,355	rhitung>rtabel	Valid
	Item 10	0,509	0,355	rhitung>rtabel	Valid
	Item 11	0,757	0,355	rhitung>rtabel	Valid
	Item 12	0,495	0,355	rhitung>rtabel	Valid
	Item 13	0,499	0,355	rhitung>rtabel	Valid
	Item 14	0,168	0,355	rhitung<rtabel	No valid
	Item 15	0,309	0,355	rhitung<rtabel	No valid
	Item 16	0,623	0,355	rhitung>rtabel	Valid
	Item 17	0,62	0,355	rhitung>rtabel	Valid
	Item 18	0,764	0,355	rhitung>rtabel	Valid
	Item 19	0,718	0,355	rhitung>rtabel	Valid
	Item 20	0,61	0,355	rhitung>rtabel	Valid
WhatsApp	Item 21	0,596	0,355	rhitung>rtabel	Valid

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	Item 22	0,501	0,355	rhitung>rtabel	Valid
	Item 23	0,288	0,355	rhitung<rtabel	No valid
	Item 24	0,735	0,355	rhitung>rtabel	Valid
	Item 25	0,443	0,355	rhitung>rtabel	Valid
	Item 26	0,332	0,355	rhitung<rtabel	No valid
	Item 27	0,58	0,355	rhitung>rtabel	Valid
Reading Comprehension	Item 28	0,447	0,355	rhitung>rtabel	Valid
	Item 29	0,171	0,355	rhitung<rtabel	No valid
	Item 30	0,328	0,355	rhitung<rtabel	No valid
	Item 31	0,347	0,355	rhitung<rtabel	No valid

In the table above, it can be seen that there are several valid and invalid ones. Items no. 2,4,5,7,14,15,23,26,29,30,31 are not valid because the correlation between these items and the total score is below

the ${r}$ table. So that the questions used are only valid ones.

The questionnaire has distributed 20 questions.

b. **Realibility Test**

Reliability test means the ability to rely on (consistency)[48], or also known as the test performed to see the degree of stability, consistency, predictive power, and accuracy. The reliability test is carried out to see how the scores obtained by a person will be the same if the person is rechecked with the same test on different occasions.[49] The reliability test uses the Reliability Test with the Alpha Cronbach formula. The Alpha Cronbanch formula is used to measure the alignment of the data variants of the question items with the total variance. The following of Alpha formula;

$$r_{11} \ = \ \frac{k}{k-1} \ x \ \left\{ 1 - \frac{\sum S_i}{S_t} \right\}$$

Where:

rα = Cronbachk Alpha Reliability

k   = Number of questions

Si2 = Data variant of each question item

St2 = Total data variant

Reliability test will use the help of the SPSS application with the rules, if the value of r$\alpha \geq$ 0.374 then the overall data is reliable. However, if the reliability test using

[48] Ali Idris Soenarto, *Metodologi Penelitian dengan Aplikasi Statistika* (Depok: PT Taramedia Bakti Persada, 2015), 134.

[49] W. Lawrance Neuman, *Social Research Methods: Qualitative and QuantitativeApproaches* (Jakarta: PT Indeks, 2013), 234.

the Cronbach Alpha (rα) methodology shows a value (rα <0.374), the research instrument is not reliable.[50]

Table 4
Reliability
Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.905	.907	31

From the explanation above has showed that the data is reliability with number 0,905. Because of the value of cronbach's alpha is high from 0,374. So, the instrument can trusted and believed to use repeatedly.

F. Data Analyze

The data analysis method is a step used to answer the problem formulation in research. The aim is to get conclusions from the research results. The data analysis technique used in this research is quantitative correlation. Where correlation research aims to find out whether there is a relationship or influence between two or more variables.

1. Preliminary Analyze

Before entering into the classification calculation, first look for the calculation of the group average score (M) and the group standard deviation (SD) with the formula: Determining the Mean with the formula:

$$M = \sum fx/N$$

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[50] Ali Idris Soenarto, *Metodologi Penelitian dengan Aplikasi Statistika* (Semarang: Badan Penerbit Universitas Diponegoro, 2013), 156.

M= mean

N= total number

F= the frequency of the number of numbers in the variable x

After knowing the norm with the mean standard deviation, it is calculated using the percentage formula as follows:

$$P = \frac{f}{n} \; x \; 100\%$$

Information:

P = percentage

f = frequency

N = number of objects

To perform calculations with the formulas above, the researcher uses the help of the SPSS program (statistical product and service solutions) 16.0 for windows.

2. Normality Test

Normality test is done to test the normality of a data. Because parametric statistics require that the data for each variable to be analyzed must be normally distributed.[51] The Shapiro-Wilk Normality Test is a test conducted to determine the distribution of random data in a small sample. In two seminar papers conducted by Shapiro, Wilk in 1958 and Shapiro, Wilk, Chen in 1968, data simulations of no more than 50 samples were used. So it is recommended to use the Shapiro-Wilk test for data samples of less than 50 samples

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[51] Sudjana, Nana. *Penilaian Hasil Proses Belajar Mengajar* (Bandung: PT Remaja Rosdakarya, 2014), 171.

(N<50). In testing, a data is said to be normally distributed if the significance value is more than 0.05 (sig. > 0.05).[52]

3. Pearsons' Product Moment Correlation

Pearson's r is measure of the linear relationship between two interval or ratio variables, and can have a value between -1 and 1. It is the same measure as the point-biserial correlation; a measure of the relationship between a dichotomous (yes or no, male or female) and an interval/ratio variable.

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{\{n(\sum X)2\}\{n(\sum Y2) - (\sum Y)2\}}}$$

r = Pearson's correlation coefficient

n = number of paired scores

X = score of the first variable

Y = score of the second variable

XY = the product of the two paired scores

G. Statistical Hypothesis

Hypothesis testing is carried out to answer the predetermined hypothesis. Hypothesis testing in this study uses the t statistical test, which is a test conducted to determine the effect of individual independent variables in explaining the dependent variable1 with the condition that if the significance value in the coefficient table <0.05 then H0 is accepted. Conversely, if the significance value in the coefficient table> 0.05 then H0 is rejected.

The correlation coefficient is carried out to determine the level of the relationship between Variable X and Variable Y. If the

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[52] Shapiro and Chen, "A Comparative Study of Various Tests for Normality", *Journal of the American Statistical Association*, Vol.63, No.324, (1968), 1343-1372.

significance value of each variable is smaller than the alpha level (0.05) then it is correlated. Conversely, if the significance value of each variable is greater than the alpha level (0.05), it is correlated. To determine the level of correlation and the strength of the relationship between the social media utilization variable WhatsApp (variable x) and the learning information dissemination variable (variable y), it can be seen in the Table.