CHAPTER III

RESEARCH METHODOLOGY

Research method was a method used in a study. The research method in this study was a mixed method. The researcher used a convergent mixed method design. The researcher used a convergent mixed method design because the data collection will be carried out in one phase.
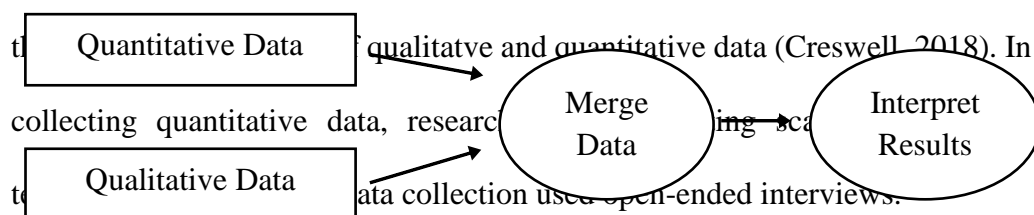
A. Research Design

In this study, researcher explored the teachers' perceptions and preparation in teaching English during the COVID-19 outbreak. So, researcher used mixed methods and convergent mixed method design. Mixed method research is an approach to integrates both qualitative and quantitative forms of research to understand the problems of the study (Creswell, 2018). This approach was carried out in combination with the aim of providing a better understanding of the research problems and questions than if done separately or individually. Mixed method research uses quantitative and qualitative methods together in a study in order to obtain valid, reliable, objective, and comprehensive data.

There were six mixed method research designs, namely the convergent parallel designs, the explanatory sequential design, the exploratory sequential design, the embedded design, the transformative design, and the multiphase design (Creswell, 2018). The convergent parallel designs are a way of collecting quantitative and qualitative data and then using them together to be used in understanding research problems. The explanatory sequential design is a data collection method that begins with quantitative data collection and then

continues with qualitative data collection to help analyze the data obtained quantitatively, so that the results of research with this design are to explain a general picture (generalization). The exploratory sequential design is a data collection that begins with the collection of qualitative data and then continues with the collection of quantitative data. The purpose of collecting qualitative data in the first stage is to explore the existing phenomena first, then the second stage is collecting quantitative data to explain a relationship between variables found in qualitative data. The embedded design is data collection carried out by starting with quantitative and qualitative data together or sequentially where one form of data plays a supporting role for other data. The transformative design is a research model that uses one of the four previous models designed using a transformative framework or lens. The multiphase design is a research model based on convergent, explanatory, explonatory, and embedded. The point is if this study is carried out through a series of stages or separate research which has a program of research objectives. The design used in this study is a convergent mixed methods design. Researcher collects quantitative and qualitative data in one phase. The following is the design of the convergent mixed method design.

The researcher used this design and method because mixed methods allow the researcher to explain quantitative results with a qualitative follow-up data. The researcher can develop more complete in understanding the result of study th... qualitatve and quantitative data (Creswell, 2018). In collecting quantitative data, researc... ...ing sca... to... ...ata collection used open-ended interviews.

Quantitative Data

Qualitative Data

Merge Data

Interpret Results

Picture 3.1 The design of the convergent mixed methods design (Creswell,

2018, p. 342).

B. The Subject of The Study

Choosing the subject of the study was an essential part that researchers must consider in dividing the research population. The researcher used a simple random sampling design in probability sampling in selecting research subjects in this study. Probability sampling is a sampling method which gives the probability that our sample is representative of the population and simple random sampling is a research subject which each element in the population has an equal opportunity to become a research subject (Singh, 2006). The subject of this study were 30 English teachers of junior high school in Sintang.

C. Data Collection Technique

The researcher collected data to answers the research questions of this study. Data collection techniques were the most important step in research, because the main purpose of research is to obtain data using a certain tool. Data collection techniques used in this study are as follows:

1. Questionnaire

The researcher used a questionnaire to collect quantitative data and open-ended interviews to collect qualitative data. The rating scale

questionnaire was used to answer the first question in this study about teacher perceptions. The questionnaire consisted of questions or statements that were asked individually to ask about opinions or facts, attitudes or preferences of respondents (Singh, 2006).

2. Interview

Open interviews were used to collect qualitative data. Open interviews are a way to gather information using open-ended questions. Data from this open interview was used to answer the second question in this study, namely how do teachers prepare for teaching during the COVID-19 outbreak. Open interviews were used to collect qualitative data. Data from this open interview was used to answer the second question in this study, namely how do teachers prepare learning activity during the COVID-19 outbreak. Respondent answered the same question. The researcher used the interview guideline as a guide in asking questions.

The technique of taking respondents to get interview data was purposive sampling. "The purposive sampling is selected by some arbitrary method because it is known to be representative of the total population, or it is known that it will produce well matched groups" (Singh, 2006, p. 85). The purpose of taking respondents by purposive sampling was the representation of the population for interview data. Respondents who will be interviewed are 6 teachers. Three teachers were from schools in the city that was easy to access internet and three teachers were from suburban schools that have limited network to access internet. The purpose of this respondent selection

is to find out whether there was a difference in teaching preparation from teachers who are in the city and in the suburbs where internet access is limited.

D. Instrumentation

The research instrument used in this study was a Likert scale and interview guidelines. There were five alternative answers in the Likert scale of the questionnaire. There were ten questions in the interview guideline.

1. Likert Scale

The researcher used a Likert scale questionnaire to measure the teacher's perception whether it was positive or negative. To measure a person's perception, attitude, or opinion about social events or phenomena, a Likert scale can be used (Sudaryono, 2018). Each respondent answered the statements by choosing alternative answer. The steps in preparing the Likert scale questionnaire were as arrange the questions, and make scoring.

Table 3.1 Score of Likert Scale Category (Somantri & Muhidin, 2006 p.38)

Alternative Answer	Score Positif Items	Score Negative Items
Strongly Agree (SA)	5	1
Agree (A)	4	2
Neither (N)	3	3
Disagree (D)	2	4
Strongly Disagree (SD)	1	5

Table 3.2 Instrument grid

No.	Variable	Indicator	No. Item	Amount
1	Teachers' perception during COVID-19 Outbreak	Feeling	1, 2*, 3*, 4**	4
		Knowledge	5, 6*	2

		Understanding	7, 8*, 9	3
2	Teachers' perception in teaching and teaching preparation during COVID-19 outbreak	Motivation	10, 11*	2
		Objectives	12**, 13, 14*	3
		Preparation	15, 16*, 17	3
		Experience	18*, 19*, 20, 21	4
		Method	22, 23*	2
		Evaluation	24, 25	2
		Total		25

*Negative Item   **execute

This instrument grid was developed based on the description in the theoretical study. The questionnaire sheet used in this study is a closed questionnaire because respondents only choose the answers that are already available. The researcher chose a closed questionnaire in order to get an answer that was in accordance with the focus of the research, namely the teacher's perception whether it was positive or negative. The researcher used 23 valid items after validity test and reliability test result.

2. Interview Guideline

This interview guideline was used by the researcher as a guideline in giving interviews. The purpose of this interview guideline was for researchers to get answers that are appropriate and according to the focus of the interview open-ended questions were used in this interview guideline. Open-ended questions were used so that respondents feel free to provide answers and the information obtained was not limited because if researchers use closed

questions, they will only get limited information and answer basic questions (Popping, 2015).

Table 3.3 The purpose of the questions in interview guideline

Question Number	Purpose
1, 2	To get clarification on teacher perceptions during the COVID-19 outbreak
3, 4	To get an explanation of the teacher preparation in preparing learning materials and sources of learning materials
5, 6, 7	To get an explanation of teacher preparation in preparing the methods used in teaching during the COVID-19 outbreak
8, 9	To get an explanation about teacher preparation in evaluating learning during the COVID-19 outbreak

E. Data Analysis

Raw data was meaningless if it is not analyzed properly. Data analysis means making raw data meaningful to describe some of the results found (Singh, 2006). After collecting the data, the researcher conducted data analysis to get accurate results from the data that had been collected. Data analysis in the convergent mixed methods design consisted of three phases (Creswell, 2018). There were quantitative data analysis, qualitative data analysis and display the data using joint dislay method.

1. Quantitative Data Analysis

Analyzing quantitative data from the results of a scale rating questionnaire. The researcher calculated the score of the respondents' answers. The next step was analyzing the questionnaire. The analyzing responses from the questionnaire was as follows: calculated the score of each indicator, after that calculated the percentage of answers from each indicator. Next step wass quantitative data analysis used quantitative descriptive analysis to explain the distribution of the data frequency. This study used IBM SPSS Statistics 25 software. The analysis obtained from this application is the mean, median, mode (*modus*), standard deviation, maximum value and minimum value. The data results presented in the form of frequency tables and pie charts. After obtaining the percentage results for each indicators, then the researcher made conclusions on the results of the study in quantitative data.

1. Mean

The mean is the average value of a group of data. The mean is obtained from adding up all the scores (total score) then divided by the number of subjects/sample (Sudayono, 2018).

$$M_t = \frac{\sum X_t}{N}$$

Mt = mean

$\sum x_t$ = total score

N = number of subjects/sample

2. Median

The middle value of the frequency distribution of the top and bottom data in the data group is the median (Bungin, 2013).

$$\text{Median} = \text{Bb} + \left[\frac{1/2\ N - \text{cfb}}{\text{fd}} \right] i$$

Bb = lower limit of median class

N = Number of frequencies

cfb = cumulative frequency of the bottom of the median class

fd = median class interval frequency

i = interval width

3. Mode (*Modus*)

Modus is the largest frequency value from a group of data that has been collected (Bungin, 2013).

$$\text{Modus (Mo)} = \text{L} + \left[\frac{\text{fka}}{\text{fka} + \text{fkb}} \right] i$$

Mo = Mode (*Modus)*

L = Lower limit of modus class interval

fka = frequency above modus class frequency

fkb = frequency below modus frequency

i = large interval

4. Standar Deviation

Standard deviation is used to describe the variability in a distribution (Bungin, 2013). The standard deviation was used to see whether the data frequency distribution is positive or negative.

$$SD = \sqrt{\frac{\Sigma x^2}{N}}$$

SD = Standar Deviasi

x^2 = The number of deviations from the mean squared

N = number of subjects/sample

5. Data tendency category

The data categorized per indicators using the very high, high, enough, low and very low categories. This categorization scale was based on Anas Sudijono (as cited in Amalia, 2016). This categorization compares the standard deviation and the average score.

Table. 3.4 scale of categorizing criteria (Anas Sudijono, 2009 p.329)

No	Formula	Category
1	$X \geq Mi + 1,5\ SDi$	Very High
2	$Mi + 0,5\ SDi \leq X < Mi + 1,5\ SDi$	High
3	$Mi - 0,5\ SDi \leq X < Mi + 0,5\ SDi$	Enough
4	$Mi - 1,5\ SDi \leq X < Mi - 0,5\ SDi$	Low
5	$X < Mi - 1,5\ SDi$	Very Low

X = the score obtained

Mi = 1/2 (maximum score + minimum score)

SDi = 1/6 (maximum score - minimum score)

Minimum Score = total items x lowest scoring scale

Maximum Score = total items x highest scoring scale

6. Overall Perception of Respondents

Table 3.5 Scale category (Somantri & Muhidin, 2011 p.42.)

No	Formula	Category
1	Quartil 3 ≤ x ≤ Total Maximal Score	Very Positive
2	Median ≤ x < Quartil 3	Positive
3	Quartil 1 ≤ x < Median	Negative
4	Total Minimum Score ≤ x <Quartil 1	Very Negative

Total Maximal Score = maximal score x total subjects/samples

Total Minimum Score = minimum score x total subjects/samples

Median = (Total maximal score + total minimum score) : 2

Quartil 1 = (total score minimum + median) : 2

Quartil 3 = (total maximum score + median) : 2

After calculating the percentage of teachers' perceptions, the researcher then made statistical results using a pie pie chart.

2. Qualitative Data Analysis

The next step was to analyze qualitative data, namely the results of interviews. Data analysis was an important process for interpreting data collection into meaningful data to answer research questions. In terms of describing textual data, qualitative analysis tended to be inductive in nature, where researchers were asked to identify the steps in elaborating the data. The stages of data processing and data analysis according to Moleong (as cited in Purwandini) which are carried out include:

1. Collecting data obtained from interviews.

2. Make a transcript of the results of the interview, then write a transcript of the results of the interviews.

3. Presenting a summary of the data from the transcript in the form of a matrix or table.

4. Analysis of data from interviews using content analysis methods using a matrix or table containing summary data from interviews.

3. Joint Display Method

The last step was to integrate the results obtained by displaying them using the joint display method. In this procedure, two data are combined using tables or pie charts and explained using descriptions. The basic idea of the researcher for the joint display of the two data is to effectively combine them in one visual then interpret and describe the display (Cresswell, 2018). The last step described findings and elaborated in the form of pie pie chart and statistical using description.

F. Measuring The Quality Of The Instruments

The research instrument is very important because it will be used to collect data in the field (Bungin, 2013). This study used an abstract variable, namely perception. This variable was difficult to visualize, because this variable comes from a concept, it is necessary to clarify its form so that it can be measured and used operationally. Therefore, validity and reliability tests were needed, in order to maximize the quality of measuring instruments and minimize measurement errors.

1. Validity test

Validity test was used to measure each item/item of the research instrument. this is done to test how appropriate/valid the instrument can measure the research variables to be measured (Bungin, 2013). Research instrument validity can be measured using the Product Moment Correlation Coefficient from Karl Pearson.

$$r_{xy} = \frac{N\sum X_i Y_i - \sum X_i . \sum Y_i}{\sqrt{\left[N\sum X_i^2 - \left(\sum X_i\right)^2\right]\left[N\sum Y_i^2 - \left(\sum Y_i\right)^2\right]}}$$

N = Total subjects/samples

Xi = Number item i

Σxi = total score item i

Xi² = Quadrate score item i

ΣXi² = total quadrate score item i

ΣY = Total score from every subjects/samples

Yi² = quadrate total score from every subjects/samples

ΣYi² = total quadrate total score from every subjects/samples

ΣxiYi = total multiple from total score item i with total score every subjects/samples

In this study, the researcher used IBM SPSS Statistics 25 to test the validity and reliability of the questionnaire. The result were two items not valid and 23 items valid. The instrument was valid when r hitung > r table. The number for r table was 0.361 because the total participants (N) were 30. So, based on the result, the researcher used 23 items after executed two items (not valid items).

Table 3.6 Validity Test Result

No.	r hitung	r table	Result
Item 1	0.442	0.361	valid
Item 2	0.396	0.361	valid
Item 3	0.516	0.361	valid
Item 4	0.265	0.361	Not valid
Item 5	0.491	0.361	valid
Item 6	0.372	0.361	valid
Item 7	0.549	0.361	valid
Item 8	0.728	0.361	valid
Item 9	0.599	0.361	valid
Item 10	0.440	0.361	valid
Item 11	0.491	0.361	valid
Item 12	0.053	0.361	Not valid
Item 13	0.542	0.361	valid
Item 14	0.701	0.361	valid
Item 15	0.549	0.361	valid
Item 16	0.358	0.361	valid
Item 17	0.728	0.361	valid
Item 18	0.540	0.361	valid
Item 19	0.545	0.361	valid
Item 20	0.672	0.361	valid
Item 21	0.507	0.361	valid
Item 22	0.666	0.361	valid
Item 23	0.463	0.361	valid
Item 24	0.440	0.361	valid
Item 25	0.599	0.361	valid

2. Reliability Test

Measure the consistency of the research instrument is Reliability test. A research instrument is called reliable if the measurement is consistent and accurate (Somantri & Muhidin, 2006). Instrument that can be used repeatedly with consistent results is the reliable instrument. The formula used to test the reliability of the instrument in this study is the Cronbach Alpha Coefficient.

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1 - \frac{\sum \sigma_i^2}{\sigma_t^2}\right] \qquad \sigma^2 = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{N}$$

r11 = Instrument reliability

k = total items

$\Sigma\sigma^2 i$ = total items varian

$\sigma^2 i$ = total varians

N = total subjects/samples

After the researcher analyzed the reliability of the questionnaire on IBM SPSS Statistics 25 application, the researcher interpreted the Cornbach's score. The item was reliable if the Cornbach's Alpha score > r table. The number of r table is 0.361.

Table 3.7 Reliability Test Result

No.	Cornbach's Alpha if Item deleted	r table	Result
Item 1	0.874	0.361	reliable
Item 2	0.876	0.361	reliable
Item 3	0.873	0.361	reliable
Item 4	0.879	0.361	reliable
Item 5	0.874	0.361	reliable
Item 6	0.876	0.361	reliable

Item 7	0.874	0.361	reliable
Item 8	0.867	0.361	reliable
Item 9	0.870	0.361	reliable
Item 10	0.878	0.361	reliable
Item 11	0.874	0.361	reliable
Item 12	0.885	0.361	reliable
Item 13	0.873	0.361	reliable
Item 14	0.868	0.361	reliable
Item 15	0.874	0.361	reliable
Item 16	0.877	0.361	reliable
Item 17	0.867	0.361	reliable
Item 18	0.872	0.361	reliable
Item 19	0.874	0.361	reliable
Item 20	0.869	0.361	reliable
Item 21	0.876	0.361	reliable
Item 22	0.869	0.361	reliable
Item 23	0.877	0.361	reliable
Item 24	0.878	0.361	reliable
Item 25	0.870	0.361	reliable