

CHAPTER III

RESEARCH METHODOLOGY

After revealing a number of theories related to the study, which are COVID-19 pandemic, online learning, connectivism, perception, and teaching English in urban and rural areas, the next step is discussing the research methodology used in the study. It provides a description of the way the study is carried out and how the data are collected and analyzed. This chapter covers research design, the subject of the study, data collection, and data analysis. Firstly, the research design discusses the method employed in this study. Then, the subject of the study elaborates on the subjects involved in the research. After that, data collection emphasizes the technique that was used in collecting data. Lastly, data analysis explains the procedure of analyzing the data.

3.1 Research Design

As the COVID-19 pandemic began in early March 2020, the Indonesian government began to implement distance learning at all levels of education. Distance learning is used not only in high schools and universities, but also at lower levels of education, such as kindergarten. As a result, the study of distance learning in Indonesia becomes interesting because all elements of school are involved in this teaching method and require adjustment in a short period of time.

A descriptive qualitative research design was employed in this research because it was suitable for the purposes of this research, which is to investigate the distance learning conducted during the pandemic in urban and rural areas. According to Monsen et al. (2007), descriptive qualitative research is effective in gathering data to support planning hypotheses and suggesting associations.

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This is in line with the statement of Malik and Hamied (2014), saying that qualitative research allows researchers to identify issues from the participants' perspective and to understand the meaning and interpretations given to behavior, events, or objects. In addition, the qualitative research methodologies are best suited when the research aims at getting in-depth understanding of the issues (Malik and Hamied, 2014). Those statements are also supported by Monsen & Horn (2008), who state that descriptive qualitative is an effective way to gain information used in planning hypotheses and suggesting association. In addition, descriptive qualitative provides comprehensive and integrated data from various sources to get a broad understanding of individual participants, including their opinions, perspectives, and attitudes (Nassaji, 2015).

3.2 Sites and Participants

The research focused on the application of online learning during the COVID-19 pandemic in Indonesian senior high schools. In collecting interview data, the study involved two teachers teaching in schools in urban and rural areas. In addition, 669 students throughout Indonesia are also involved.

The first and second research questions were responded to through the interview with with two English teachers from two senior high schools representing an urban area and a rural area. The senior high school in the urban area was located in Bandung City, West Java, and the one in the rural area was in Plered District, Purwakarta Regency, West Java. Both schools were public senior high schools. However, the difference was on the characteristics of the schools and their students. The urban school was a favourite school, even in a city as big as Bandung. It was located in the center of the city, and most of the students came from prosperous families. On the other hand, the rural school was a new school, and most of its students was students who were not accepted by

their first choice schools. In addition, most of the students came from underprivileged family.

Those schools were chosen because both schools represent the condition of schools in the urban area and rural area respectively. In addition, since present research tried to eliminate other factors aside of urban and rural areas, teachers with similar characteristics were chosen. Both teachers came from the same generation, which was the Generation Y. Gen Y (born between 1982 and 1999) are defined as digital natives whose signature products are tablets and smartphones (Linnes & Metcalf, 2017). Furthermore, both of them got their master's degree in English Education from the same university. The teachers representing both schools had expressed their interest in contributing to this research.

The first teacher got her master's degree in English education from a state university in Bandung. She had been teaching English since 2015 in Junior High Schools, Senior High Schools, and English courses. In this research, this teacher is referred by the pseudonym Vini. She came from Bandung City, which is the capital of West Java Province. The second teacher also got her master's degree in English education from the same university as Vini. She had been teaching English in Junior High Schools, Senior High Schools, and English courses. In this research, this teacher is referred to by the pseudonym Asih. She came from Plered District, which was located in Purwakarta Regency.

To obtain data for the third research questions, questionnaires were filled in by 669 high school students participating in this research. They came from various cities and regencies in Indonesia, which were Aceh, West Aceh, Bengkalis, Dumai, Indragiri Hilir, Indragiri Hulu, Rokan Hilir, Pangkalpinang, Lahat, South Tangerang, Bekasi, Cimahi, Indramayu, Karawang, Bandung City, Bogor City, Cirebon City, Tasikmalaya City, Majalengka, Purwakarta, Sumedang, West Lombok, and Keerom.

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3.3 Data Collection

There were two kinds of data collected in this research, which were interview data and questionnaire. The interview data in this research were used to gain an understanding of the implementation of online learning during the COVID-19 in urban and rural areas as well as aspects considered as challenges and solutions in that implementation. On the other hand, the questionnaire data were used to investigate the perception of students in urban areas and rural areas in the implementation of online learning during the COVID-19 pandemic.

Initially, observation was planned to be used in this research to collect the data for the first research question related to the implementation of online learning during the COVID-19 pandemic. However, since the face-to-face learning had begun again, it was not possible to be conducted. Therefore, in-depth interviews, which are a process of gaining the information for the specific goal of the study by proposing some questions to the respondent by the interviewer (Nazir, 2006), were used instead. In-depth interviews can also serve as good instruments to gain deep information about the issues arising from the informant (Nasution, 2003). Since this research aims at investigating the implementation of online learning during the COVID-19 pandemic as well as aspects considered as challenges and solutions by teachers, in-depth interviews were employed to gain deep information about the aforementioned issues.

The interviews were conducted once for each interviewee. Each interview consists of two parts. The first part of the interview was used to investigate the first research question while the second part of the interview was used to investigate the second question. The interview that was used in this research was a semi-structured form with open-ended questions. This type of interview was

used because it let the researcher take control of the interview (Nunan, 1992). Additionally, it allowed in-depth information about the data to be obtained (Cohen, Manion, & Morrison, 2007). Therefore, in this research, the participants were allowed to give their answers freely without being limited to any specified alternative answer. In addition, the interviewees were expected to be able to give a complete and deep explanation in answering the questions.

To collect data that are required to answer the first question, connectivism was used as the underlying theory to find out how online learning was conducted in urban areas and rural areas. This theory was used because this theory included technology in the process of learning in the digital age (Siemens, 2005). In addition, this theory was developed to complete the three previous theories: behaviorism, cognitivism, and constructivism.

Therefore, the connectivism guidelines developed by Al-Shehri (2011) were employed to accommodate the needs of obtaining data regarding learning that take place within technology, especially during the pandemic, which forced learning to be conducted remotely. These guidelines could be used because it employed connectivism, which offers a promising initial lens to conceptualize learning in this digital age using its various qualities ranging from face-to-face to online learning, as its underlying theory. These guidelines include several points, which are related to diversity, social media, learning inside and outside the classroom, connections, contextual knowledge, and information organization.

However, since the focus of this research was slightly different from Al-Shehri's research, which focused on network-based language learning using social media, the guidelines in this research were modified to make it relevant to the focus of this research, which is the implementation of online learning during an emergency such as the COVID-19 pandemic. The guidelines that were used in the first part of the interviews are as follows.

Table 1*Connectivism Guidelines*

No.	Principles of Connectivism	Justification	Guidelines
1.	Learning and knowledge rest in the diversity of opinions.	<ul style="list-style-type: none">• Students come from different backgrounds.• Students are already connected to different networks.	<ul style="list-style-type: none">• Students are encouraged to do debate and discussions in the online classroom.
			<ul style="list-style-type: none">• Diversity of students' backgrounds and contexts and uploaded materials are highlighted in the discussions.
			<ul style="list-style-type: none">• Different sources of information are used.
2.	The capacity to know more is more critical than what is currently known.	Students need to be familiar with the best tools/sources of the needed information.	<ul style="list-style-type: none">• Social networking and social media are used.
			<ul style="list-style-type: none">• Students are taught how to use social media.
3.	Learning may reside in non-human appliances.	<ul style="list-style-type: none">• Students need to seek knowledge from sources other than the	<ul style="list-style-type: none">• Students are encouraged to find information from multiple sources.

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		<p>teacher to promote student-centredness.</p> <ul style="list-style-type: none"> • Learning occurs inside and outside the classroom. 	<ul style="list-style-type: none"> • Students are asked to study outside school hours.
4.	<p>Nurturing and maintaining connections is needed to facilitate learning.</p>	<ul style="list-style-type: none"> • Students need other “external” networks and connections with similar interests. 	<ul style="list-style-type: none"> • Students are encouraged to connect with other people outside the school to learn more.
5.	<p>Information is rapidly changing and increasing. Thus, students need to abandon old and unimportant information and learn new and important information.</p>	<ul style="list-style-type: none"> • Contextual knowledge is constantly changing and varying from time to time and from one location to the other. 	<ul style="list-style-type: none"> • Students are given up-to-date information.
6.	<p>Knowledge in a database needs to be connected to the right people in the right context.</p>	<ul style="list-style-type: none"> • Students need to verify appropriate sources of information, e.g., people vs. online resources. • Students need to have the skill to organize 	<ul style="list-style-type: none"> • Students are encouraged to find the fact of the materials given by teachers. • Students are asked to organize information according to priorities.

		information according to its priorities.	
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The first principle, the diversity in learning and knowledge, covered the use of debate, the diversity of students' backgrounds, and the diversity of sources of information. The second principle, the capacity to know more, discussed the use of social media and the teaching of how to use social media. The third principle, learning in non-human appliances, consisted of the encouragement to find information from multiple sources and the encouragement to study outside school hours. The fourth principle, nurturing and maintaining connections, discussed the encouragement to connect with other people inside and outside the school to learn more. The fifth principle, the need to learn new and important information, demanded teachers to give up-to-date information to the students and to encourage them to find a new piece of information. The last principle, the need to connect knowledge to the right people in the right context, demanded students to find the fact of the materials given by teachers and to organize information according to priorities.

After designing the guidelines to be used for the interviews, twelve questions regarding the implementation of online learning during the COVID-19 pandemic in both urban and rural areas were generated. Those questions were divided into six aspects: the diversity in learning and knowledge, the capacity to know more, learning in non-human appliances, nurturing and maintaining connections, the need to learn new and important information, and the need to connect knowledge to the right people in the right context. Since those interview questions were made in English, they were first translated into Bahasa Indonesia to avoid disambiguation or lack of understanding.

Interviews were also conducted to gain data to answer the second research question in regards to the challenges encountered by the teachers. The interview questions that were used in this research were adapted from the research by Atmojo and Nugroho (2020), which focused on aspects considered challenging by the teachers in carrying out online EFL learning, the roots of those challenges, and the solution that the teachers came up with to address those challenges.

Before the interview session was conducted, the interview questions were first consulted and validated in a focus group discussion, in which five master's degree students and one doctor who acted as a supervisor gave inputs and advice. By going through this stage, the interview questions could have their validity and reliability improved.

The interview session was conducted with all of the involved teachers. The interview focused on the preparation carried out to conduct online learning in this emergency and the aspects considered as challenges and solutions they faced. In addition, the strategies to cope with those aspects were investigated as well. Due to the pandemic, the interview was not done face-to-face. Instead, it was done through WhatsApp chats and voice notes. To provide more clarity, the interview was conducted using Bahasa Indonesia. The interview was recorded, transcribed, and translated into English.

In this research, questionnaires were also used to answer the third research question regarding students' perceptions of online learning during the pandemic. A questionnaire is a set of questions that are asked to people in order to gather statistically useful information on a specific topic (Roopa & Rani, 2017).

The questionnaire was adapted from the research conducted by Agung et al. (2020). Although the questionnaire was not displayed in their research paper, they sent the questionnaire when asked via email. Since their questionnaire was intended for college students whose major was English Education, this

questionnaire was then adjusted for Senior High School students. This questionnaire covered students' perception of their participation, accessibility, material and assignment delivery, and online learning platform, totaling 19 questions.

Before the questionnaires were distributed, the questionnaire questions were first consulted and validated in a focus group discussion, in which five master's degree students and one doctor who acted as a supervisor gave inputs and advice. By going through this stage, the questionnaire questions could have their validity and reliability improved.

The questionnaire was translated into Bahasa Indonesia, was made using Google Form, and was distributed through social media, such as Twitter, Facebook, Instagram, and WhatsApp to obtain data from various parts of Indonesia. In addition, some high school teachers had also expressed their willingness to contribute to this research by sharing this questionnaire with their students.

3.4 Data Analysis

Data analysis is the most difficult step of qualitative research and the one that receives the least attention in the literature (Thorne, 2000). Data analysis that is done in a systematic manner can be shared with others in a transparent manner (Malterud, 2001; Sandelowski, 1995) using a systematic organization, synthesis of research data, and the testing of a research hypothesis using those data (Polit and Hungler, 1999).

The data analysis was conducted in two stages, namely data analysis of the interview data, and data analysis of the questionnaire data. The interview data were analyzed using descriptive qualitative analysis and the questionnaire data

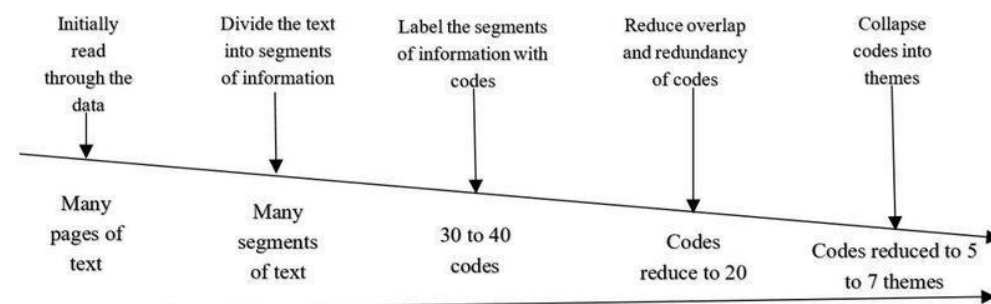
were analyzed using quantitative analysis. The analysis for each set of data is explained below.

3.4.1 Interview Data

Thematic analysis was done to analyze the interview data. An iterative process of reducing the database to a small set of themes or categories was done in the procedures of conducting thematic analysis (Creswell, 2013). Three steps in doing thematic analysis are open coding, axial coding, and selective coding (Creswell, 2014). The coding steps can be seen in Figure 1 below.

Figure 1

Coding System (Creswell, 2014)



According to Creswell (2014), open coding is the first step of conducting thematic analysis. In this stage, the data were ‘fractured’ or ‘broken open’, hence the term “open” in open coding was used. In this stage, the data were broken down into discreet parts, carefully examined, and had their similarities and differences compared (Malik and Hamied, 2014). Open coding was done by examining the transcripts by line, sentence, or paragraph (Hamied, 2017). Furthermore, those phenomena were named and categorized. In this research, the open coding was done manually. The data were labeled using codes obtained

from words that frequently appeared in the interviews. In this research, the coding was done manually.

Axial coding is a process of linking categories that have emerged in open coding to their sub-categories (Malik and Hamied, 2014). In addition, axial coding was conducted to recombine and synthesize descriptive codes based on their interrelationships (Creswell, 2014). In this research, the codes obtained in open coding were then synthesized and combined into axial codes according to their respective sub-categories related to the literature review in Chapter 2. Table 2 below illustrates the transition between open coding to axial coding.

Table 2

Transition between Open Coding to Axial Coding

Open codes	Axial codes		Examples
	Categories	Properties	
Delivering materials, conducting questions and answers session	Teaching activities	Aspects related to teaching activities conducted by the teachers during online learning	<i>“...I directly <u>moved on to the materials...</u>”</i>
Google Classroom, LMS, Quizziz	Web-based learning platforms	Online learning platforms accessed in browsers used by teachers and students during online learning	<i>“...learning online on the <u>school website and GCR...</u>”</i>
Tardiness, laziness, poverty	Challenges arising from students' side	Challenges that arose during online learning that came from the students	<i>“...some students come from families who are not financially healthy...”</i>

In the table above, the open codes were categorized and put in broader conceptual codes, also known as axial codes. Following Charmaz in Damayanti

(2019), to help preserve the meaning embedded in the transcript, codes in the same categories were put together and labeled using gerunds or noun phrases.

In selective coding, the focused codes were merged into broader conceptual codes (Damayanti, 2019). By doing so, the themes can be obtained from the concepts of the coding (Hamied, 2017). According to Malik and Hamied (2014), selective coding is selecting the themes, or core categories, by concentrating on the basic social process in the data, raising the level of abstraction, and elaborating those themes. In this research, after conducting the axial coding, the axial codes were once again escalated to broader themes in selective coding. The example of the transition of open codes to themes can be seen in Table 3.

Table 3

Transition of Open Codes to Themes

Open Codes	Axial Codes	Selective Codes	Themes
Delivering materials, conducting questions and answers session	Teaching activities	Conducting teaching-learning process	The implementation of emergency online learning
Collecting the materials, tailoring the materials	Preparing the materials		
Google Classroom, LMS, Quizziz	Web-based learning platforms	Platforms used in emergency online learning during the	
Zoom, Google Meet	Video conference apps		

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YouTube, WhatsApp, Facebook, Instagram	Social media	COVID-19 pandemic	
Tardiness, laziness, poverty	Challenges arising from students' side	Challenges found by teachers	Aspects considered as challenges and solutions found in emergency online learning
Time limitation, teaching system proposed by the school	Challenges arising from the school's side		
Lending tablets to students, making a phone call to the students	Strategies to overcome the aspects considered as challenges and solutions	Strategies used by teachers	

In Table 3 above, it can be seen that the categories generated in axial coding were put into two broad themes: the implementation of emergency online learning and aspects considered as challenging by in emergency online learning.

3.4.2 Questionnaire Data

The first task in analyzing the questionnaire data was classifying whether the respondents came from urban or rural areas. According to Weeks (2010), an urban area is an area whose natural environment is transformed into a built environment, while a rural area is an area whose people's lives are organized around agricultural activities (Weeks, 2010). By looking at the employment data of each region where the respondents come from on Indonesia Statistics' website, those regions could be classified to either the urban area or rural area. Then, the

data were calculated using the Pivot Table feature in Microsoft Excel 2013 and made into a table as follows.

Table 4

Table of Data

No.	Areas	Number	Percentage
A. Urban areas			
1.	Urban area 1		
2.	Urban area 2		
Subtotal:			Subtotal:
B. Rural areas			
1.	Rural area 1		
2.	Rural area 2		
Subtotal:			Subtotal:
Total:			Total:

After that, the answers to each question in the questionnaire were calculated using the Pivot Table feature in Microsoft Excel 2013. The data were then made into a table as follows.

Table 5

Questionnaire Answers

No.	Questions	Answers	Urban Areas		Rural Areas		All Areas	
			n	n	n	%	n	%
1.	Question 1	Option 1						
		Option 2						
		Option 3						
		Option 4						
		Option 5						

After they were calculated, the data were then presented either in the forms of graph or diagram. It was because graphical presentation of questionnaire data greatly improves information perception, absorption, and retention (Stabina, 2005). The data were then linked to existing research and the conclusions were drawn to answer the third research question regarding students' perception on the implementation of online learning during the COVID-19 pandemic.

3.5 Concluding Remark

This chapter has presented and elaborated on the methodology of the study: research design, subject of the study, data collection, and data analysis. This qualitative research was conducted using the data from questionnaires and interviews. There were 669 students and two teachers involved in this research.