CHAPTER III
RESEARCH METHOD

This chapter explains the research methodology of the research to find out the answer to the research questions previously mentioned in chapter one. It deals with the explanation of the research design, research setting and participants, data collection technique, and data analysis technique.

3.1. Research Design

This research employed a qualitative study, more precisely a case study in an international program of science education. Maliek and Hamied (2014) claimed that qualitative research methodologies are best suited when the research aims at getting an in-depth understanding of the issues and phenomena. The rationale for choosing this design is that this study attempts to figure out the phenomenon of translanguaging practices in a specific study program, namely an international study program of science education study at a major state university in Bandung, Indonesia. According to Cresswell (2017), a case study is a natural approach of finding and understanding social phenomena. The natural situation of translanguaging practice in an international science education program at a state university would be the focus of the study in this case.

Qualitative research intends to explore the complex set of factors surrounding the central phenomenon and present the varied perspectives or meanings that participants hold (Creswell, 2008). Furthermore, qualitative research can also be described as an effective model that occurs in a natural site that enables the researcher to develop a level of detail from being highly involved in the actual experiences (Creswell, 2003).

3.2.Research Setting and Participants

This study was conducted at an international program of science education of a state university in Bandung, Indonesia. There are several reasons why the researcher selected the EMI program from this university as the context of the study.

First of all, one of the main reasons for choosing the EMI program at this university is because the science education program has received an A accreditation. This accreditation shows that the program has passed a rigorous assessment process and meets high standards of educational quality. With the A accreditation status, this science education EMI program is recognized and appreciated both at the national and international levels, reflecting the university's commitment to providing high-quality education.

Second, the researcher chose the EMI science education program because of the uniqueness and relevance of the program. The EMI program was founded in 2009, where the teaching approach uses English as the main medium in conveying science material. This phenomenon attracts my attention to get more in depth comprehension about the impacts and challenges faced by students and teachers in this multilingual learning context. Therefore, this research can provide valuable insights for the development and improvement of the EMI program and make a positive contribution to improving the quality of education at the university level.

Third, the selection of this university as a research context was also based on its reputation as a leading university in Indonesia with a focus on education. As a strong education-based university, EMI approach of the international science education program of this university is an interesting area to be explored and analyzed in depth. The medium of instruction of this program is English. Textbooks, teaching aids, and classroom signs are all written in English. However, because both students and teachers mostly are fluent in Indonesian, which is their first language, the classroom language instruction is frequently a fluid and natural combination of Indonesian and English.

Regarding the participants, this study involves 22 (twenty-two) students and 2 (two) content lecturers. The students are first-year students enrolled in the 2022-

2023 academic year within the age group 18-21 years old. The reason why the researcher chose first year students was due to the fact that they were still in the adjustment period with teaching and learning process of the EMI program so it was assumed that the challenges and affordances of the students towards translanguaging practice and the EMI program would be more visible. According to preliminary observations with the lecturer, the students' English competence varied due to their diverse ethnic backgrounds, family languages, and prior learning experiences. Creswell (2012: p.206) described subject selection as purposeful or purposive sampling in which researchers intentionally select individuals and sites to learn or understand the central phenomenon. Based on those considerations, the university is identified as the research site, with the students and lecturers serving as research participants. The sites and participants are expected to provide a rich data source to support in achieving the goal of this study.

3.3. Data Collection Techniques

This study employs several data collection techniques to enrich the data gathered from the field. Three types of data collection techniques employed in this research are observations, interviews and questionnaires. The followings are the detail explanation of the data collection techniques.

3.3.1. Classroom Observation

Observation is commonly defined as the activities to see the real situation of certain objects that the researcher focuses on. In observation, the researcher takes some notes and analyses every single activity that happens at the research setting in a specific time. According to Hamied (2017), the main emphasis of doing observation is understanding the research setting in which the participants live or do their activities naturally without altering or manipulating them. In connection to this, the researcher will observe the teaching and learning process in the EMI class of the chosen university. In this case, this research investigated how the translanguaging practice enacted by lecturers and students in their daily teaching and learning process. The research also analyzed the benefits of the translanguaging

itself and students' perceptions about the implementation of EMI and translanguaging practice as the whole package. There would be a recording session of the teaching process to capture the whole picture of what is happening in the classroom during the teaching and learning process. The recording process is accomplished in 7 meetings in total with two lecturers (4 meetings for Earth & Space Science subject and 3 meetings for Physical Chemistry subject). The process is completed in approximately within 6 (six) weeks. Additionally, since the recording tools might not be sensitive enough to capture the sound, an audio recorder utilized to capture any voice produced by the lecturer during the classes. In order to perform the analysis as thoroughly as possible, the audio captured was synchronized with the videos that were obtained from the camera recording process.

3.3.2. Questionnaire

The second stage of data collection technique is questionnaire. In this case, a questionnaire will be employed to all the 22 (twenty-two) participating students. The questionnaire will be initiated by the section of students' general information. Moreover, the questionnaire contained multiple choice questions about EMI Implementation and the translanguaging practice they have experienced. The questionnaire was filled out by the participating students to find out information that is technical in nature and requires short and definite answers.

3.3.3. Interview

An interview is a typical method of gathering information by having conversations with the source of information. An interview is a meaningful interaction between a researcher and participants who volunteer to take part in the research in order to obtain detailed information. Hamied (2017). In this case, the researcher conducted a semi-structured in-depth interview with two lecturers and the chosen five students from the 22 (twenty-two) students that has already filled the questionnaire to confirm the information gathered through observation and interview. Of the five students, two of them showed fairly good English skills, while the other three students had English skills that could be categorized as

ordinary. The selection of these students was carried out based on the observations of the researcher during class observations, especially when students presented the results of their laboratory research, as well as through an analysis of the questionnaires filled out by the students. To minimize bias, the researcher also discussed with one of the lecturers who participated in this study. This is completed to ensure that the selection of students to be interviewed reflects a fair and accurate range of backgrounds and English proficiency levels.

The interview focused on the students and lecturers' perception about the implementation of EMI and its relation with the translanguaging practice. The researcher posed several open-ended questions (See Appendix 2) to the research participants, and they asked to respond based on their prior experiences in EMI teaching and learning process.

3.4. Data Analysis Techniques

The data from the observations, questionnaire and interviews were analyzed qualitatively for content following the procedures advised by Miles and Huberman (2014). Mile and Huberman (2014) propose three major components of data analysis in qualitative research (Hamied, 2017). The first step is to reduce the amount of data. This was done consecutively when all data has been collected. The researcher edits, segments, and summarizes data at this step before classifying it into some categories. The second step is data display. The researcher organizes, compares, and assembles information obtained from various sources at this phase. The final step is to draw and verify conclusions. This requires the researcher to interpret the findings of his research. The interpretation should be validated by reviewing the entire data collection, analysis, and comparison process with other similar studies and theories.

The content analysis began with defining codes to identify participant perspectives especially connected to reflection, and then combining them to form categories based on the research questions. These topics include how EMI lecturers and students enact the translanguaging practice, as well as their perceptions of the translanguaging practice and EMI implementation, including benefits and

problems. These categories will also serve as subheadings in Results and Discussion section of the paper.

The actual processes of analyzing the data are presented as follows:

3.4.1. Data analysis Process of Classroom Observation

The process of analyzing data from the results of class observations is carried out in several structured steps. First, an analysis of the recorded data of interactions in the classroom was carried out, which began by observing and conducting video and audio recordings of the interactions in the classroom. Second, the process was continued by transcribing 6 (six) class observation meetings from two courses, namely "Earth and Space Science" and "Physical Chemistry". To ensure the efficiency of data analysis, the researcher also recorded field notes during the observation process. These records help identify relevant interactions that will be included in the translanguaging practice category.

Third, the researcher identifies utterances that can be categorized into translanguaging practices. After the transcription process is complete, the results of the transcription are shown to the observed lecturer for clarification. In this stage, the lecturer provides clarifications, especially related to technical terms in science that are in the transcription.

After the transcription process is complete and clarification is obtained, the data is analyzed by coding and categorizing based on the Translanguaging elements described by García (2014), namely Pedagogical Translanguaging, Identity and Power, Fluid Language Practice, Integrated Language Resources, and Sociopolitical Dimension (see Appendix C).

3.4.2. Data Analysis Process of Questionnaire and Interview

Questionnaires were distributed to 22 first-year students (21 female, 1 male) in an international science education program on translanguaging practices and EMI implementation. This questionnaire consists of 10 questions, which include 8 questions about challenges faced by science students in EMI, as well as 2 questions about perceptions of translanguaging practices.

Data from this questionnaire were analyzed through several steps. The first step is to calculate the total number of responses and the percentage of participants

who responded based on the options given in the statements in the questionnaire. Furthermore, the second step involves coding the answers and interpreting them according to the findings.

With these steps, a summary of students' general perceptions of the challenges faced in being a science student in an EMI environment was observed, as well as their views on the practice of translanguaging in that context. This analysis provides deeper insight into students' perspectives on the use of language in science learning.

Regarding the data analysis of the interview session, interview was conducted to answer research questions number 2 (two) and 3 (three) relating to perceptions of translanguaging practices and implementation of EMI. Specifically for students' perspectives, interviews were conducted to deepen understanding of the results of the questionnaire data that had been obtained.

The interview session involved 2 (two) participating lecturers, whose class was the object of classroom observation, and 5 (five) representative students. Interviews with students were conducted face to face in one session using English, in line with the characteristics of being international program students as requested by the lecturers. On the other hand, interviews with lecturers were conducted both synchronously and asynchronously, through several sessions which were adjusted to the time availability of the lecturers involved. The language used in interviews with lecturers is Bahasa Indonesia, in order to avoid concerns that might affect the quality and quantity of data collected (Mackey and Gass, 2016). The interview transcription presented in this study were already translated into English.

The transcript of the interview results presented in this study includes the use of names changed to pseudonyms to protect the identity of the participants (Creswell, 2014). In this way, the data obtained from interviews is expected to be more secure and confidential.