CHAPTER III

RESEARCH METHOD

3.1. Participants

A private elementary school founded in 2005 and under the auspices of the Mondial Foundation, is located on Jl. Temple Golf Boulevard No. 2, Graha Candi Golf, Semarang. Mondial Junior High School's education system does not only give attention to the academic achievements of the students but also highlights the students' ability to display good moral values in their daily lives. Consequently, character education has an impact in our daily educational practices. English as well as Indonesian are used as the media of instruction. Subjects that are 'Indonesian specific', such as the Indonesian Language, Civics, Religion, and Social Science are taught in Indonesian. Subjects that have the potential to be pursued when students attend higher education, such as Science and Mathematics, at universities in Indonesia or overseas are taught both in English and in Indonesian. In this way, our graduates are expected to be able to take part in the national examinations as well as pursue their tertiary/ university education without difficulties. This is especially true since the Indonesian Ministry of Tertiary Education has decided that starting in 2016 all universities in Indonesia are supposed to implement the bilingual educational system. To achieve the purpose,

reference books that are nationally and internationally published are used in Mondial Junior High School.

The researchers selected Mondial Middle School as their research location due to its suitability and interesting background, particularly the use of two languages in the same subject. In SMP Mondial also, a policy of teaching two subjects (Biologi and Biology) using two different languages is implemented, and participation in this policy is mandatory for all students. The study focused on several grade VIII students from SMP Mondial Semarang, with a total of five participants included in the research. Each student had a different language learning background, with most of them starting English lessons in kindergarten, resulting in approximately 8-9 years of English learning experience. However, their family backgrounds varied, with two students coming from families who used English as their daily language, while the rest used Indonesian at home. Additionally, at Mondial Junior High School, English was the primary language of communication with friends and teachers, indicating a considerable level of English fluency among the participants. The students communicated using different languages in their daily lives, employing one language at school and another at home or within their communities. This language variation presents challenges and complexity in their language preferences and experiences in biology education, underscoring the importance of considering individual language backgrounds and choices in fostering an inclusive learning environment.

The study explores the participants' usage of distinct languages in their day-to-day communication, wherein they adopt one language at school and another at home. This linguistic diversity introduces difficulties in biology classes, where both English and Indonesian are employed for instruction. Consequently, students may encounter obstacles in comprehending certain terms or concepts, depending on the language used during teaching. The presence of varied languages further complicates their learning experiences, prompting the research to delve into how students manage and perceive these linguistic challenges in their biology education.

In biology education, students face challenges, and their language preferences can be influenced by multiple social factors, such as cultural background, peer influence, family language use, language policy at school, teacher's language use, language proficiency, societal attitudes, and language exposure. These factors interact in unique ways for each student, leading to diverse language choices and preferences in the classroom. Understanding these social influences can help educators create an inclusive learning environment that respects and accommodates students' individual language backgrounds and preferences. Several social factors that can influence biology education:

1. Cultural Background: Students' cultural background plays a significant role in shaping their language preferences. Some students may have a strong attachment to their native language, reflecting cultural identity and

heritage. In such cases, students may prefer using Indonesian to connect with their cultural roots and express themselves more effectively.

2. Peer Influence: Peer interactions can also influence language preferences. If a student's social group predominantly uses a particular language, they may feel more inclined to adopt that language to fit in and feel accepted. Peer pressure or the desire to conform to the language choices of friends can impact students' language preferences in the classroom.

3. Family Language Use: The language spoken at home and within the family can influence students' language preferences. If a student's family predominantly uses one language over another, the student may naturally lean towards using that language in various contexts, including their biology classes.

4. Language Policy at School: The language policy adopted by the educational institution can influence students' language choices. If the school promotes bilingual instruction or explicitly encourages the use of both Indonesian and English in biology classes, students may feel more comfortable and motivated to utilize both languages.

5. Teacher's Language Use: The language used by the teacher during instruction can also influence students' language preferences. If the teacher primarily uses one language, students may follow suit to align with the instructional language and facilitate comprehension.

6. Language Proficiency: Students' proficiency levels in different languages can impact their preferences. Those who feel more competent in English

may prefer using it for complex or technical discussions, while students who feel more confident in Indonesian may opt for it in discussions related to culture or context-specific topics.

7. Language Exposure: The frequency of exposure to a particular language in various social settings can influence language preferences. Students who have more exposure to English through media, internet, or other interactions may feel more comfortable using it in different contexts, including their biology classes.

Overall, these social factors can interact and vary among students, leading to diverse language preferences and choices in their biology education. Understanding these factors can help educators create a supportive and inclusive learning environment that acknowledges and respects students' language backgrounds and preferences.

3.2. Research Design

The research design is a crucial component of any study, outlining the framework and methodology to achieve research objectives. Researchers carefully plan the design to ensure data collection, analysis, and interpretation align with the study's goals. The selection of research methods, data sources, sample size, and data analysis techniques depends on the nature of the research question. A well-structured research design enhances the validity and reliability of study

findings, providing a robust foundation for drawing meaningful conclusions and making evidence-based recommendations.

In conducting research, we need research design. Research design refers to the strategy to integrate the different components of research projects in a cohesive and cohesive way. Some experts have different opinions about what is meant by research design. Sherman and Webb (1988) assume that qualitative research is concerned with meaning as they appear to, or are achieved by persons in lived social situations. Meanwhile, Bogdan and Biklen (1982) state that qualitative research is descriptive in which the data is collected in the form of words or pictures rather than numbers. Data in the form of quotes from documents, field notes, and interviews or excerpts from videotapes, audiotapes, or electronic communications are used to present the findings of the study. This study used a qualitative method by collecting as much data and information as possible through interviews. Qualitative research involves collecting and analyzing non-numeric data (text, video or audio) to understand concepts, opinions or experiences. It can be used to gather in-depth insights on an issue or generate new ideas for research. Each research approach involves the use of one or more data collection methods. For example, "What do you think about learning one lesson with two languages?".

3.3. Technique of Data Collection

This study employs interviews as started by Moleong (2010, p.186), a method to gather students' perspectives . Interviews involve face-to-face verbal debriefing to collect information directly from participants. Esterberg's (Sugiyono (2012) classification divides interviews into structured, semi-structured, and unstructured types, with semi-structured interviews being used in this research. Data collection is a vital aspect of research, and researchers use various techniques such as surveys, interviews, observations, and document analysis based on their study's nature. The selection of the appropriate method is crucial for data accuracy and reliability, considering research objectives and data requirements. Related research by Turner et al. (2021) explores digital data collection methods, such as online surveys and mobile apps, discussing their advantages and challenges in enhancing efficiency and data quality in social science research.

3.4. Instrument

The semi-structured interview is a versatile qualitative research instrument that effectively combines open-ended and closed-ended questions to elicit detailed and insightful information from participants. Unlike structured interviews that follow a fixed set of predetermined questions, semi-structured interviews offer researchers the flexibility to explore emergent themes and adapt their approach

based on participants' responses. To ensure consistency, the researcher develops an interview guide with key topics and questions, but they can also deviate from it to delve deeper into participants' answers and explore new avenues of inquiry.

These interviews are particularly valuable for discovering previously unknown qualitative trends, exploring novel areas of research interest, and conducting phenomenographic studies. As part of qualitative data collection techniques, semi-structured interviews can be complemented by various sampling methods, such as purposive sampling, convenience sampling, quota sampling, and snowball sampling. Participants in the interviews, referred to as sample respondents, willingly participate in the questionnaire based on the research's sampling approach. The semi-structured interview process involves an interview guide developed from relevant topics, offering a more flexible approach than structured interviews. The goal is to facilitate open discussions where participants can express their opinions and ideas freely. In this particular study, the researcher utilized formal interviews, engaging in one-on-one conversations with participants to gain deeper insights into their perspectives, experiences, and feelings on the research topic.

3.5. Technique of Data Analysis

The technique of data analysis in qualitative research, categorizations and descriptions are developed based on "events" obtained during field work.

Therefore, data collection and data analysis activities cannot be separated from each other. Both take place simultaneously, the process is cyclical and interactive, not linear. Miles and Huberman (1992:20) describe the process of analyzing qualitative research data as follows.
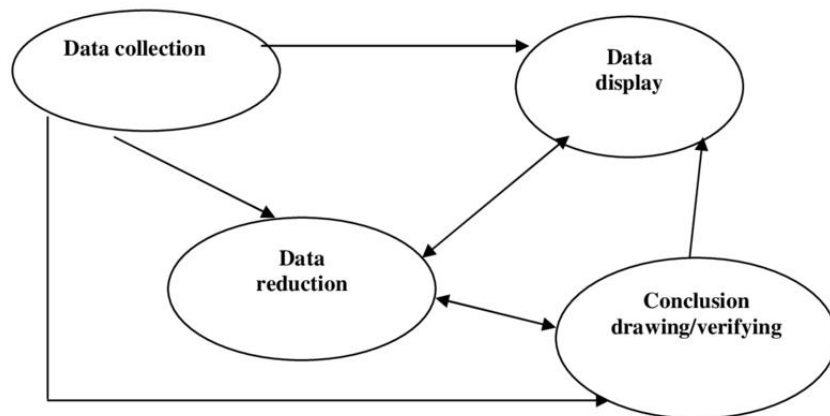

Figure 2. Technique of Data Analysis Miles and Huberman (1994: 12)

1. Data Reduction

Data reduction involves summarizing, focusing on important aspects, identifying themes and patterns, and eliminating unnecessary information. This process creates a clearer picture, facilitating further data collection and analysis. Researchers can use electronic tools like mini-computers and coding to assist with data reduction, making numbers more visible. The findings can be presented in various forms, such as sketches, synopses, and matrices, to aid in explaining and confirming conclusions. Data reduction may be repeated as needed, depending on the research

problem's complexity and the researcher's ability to make effective comparisons during data collection.

2. Data Display (Data Presentation)

Presentation of data in qualitative research can be done in the form of brief descriptions, charts, relationships between categories, flowcharts and the like. In this case Miles and Huberman (1984) stated "the most frequent form of displaying data for qualitative research data in the past was narrative text". The most often used to present data in qualitative research is with narrative text. In displaying data, uppercase, lowercase and numbers are arranged sequentially so that the structure can be understood. Furthermore, after an in-depth analysis, it turns out that there is an interactive relationship between the three groups. According to Miles and Huberman (1984) states, by using the data display, it is easy to understand the work plan based on what has been understood.

3. Conclusion Drawing/ Verification

Conclusions and initial verification are interim steps of qualitative data analysis according to Miles and Huberman. In this section the conclusions may change if the data or evidence obtained is not strong enough for the next data collection stage. Vice versa, if the data collected is supported by valid evidence, it can be said that the conclusion is credible. Conclusions in qualitative research are new findings that have never been studied before. Thus the conclusions in this qualitative research can answer the problems or problem formulations that have been

determined at the beginning of the study. It may also not be able to answer the formulation of the problem that has been made because this conclusion is temporary and can develop over the course of this research. In this qualitative research, the findings that researchers get can be in the form of a description or description of an object being studied so that readers or other researchers can imagine it clearly.

3.6. Questions Ethics

Question ethics, also known as the ethics of questioning or ethical questioning, refers to the ethical considerations and principles that guide the act of asking questions. It involves a set of moral guidelines and values that should be followed when formulating and posing questions, particularly in contexts where questioning has significant implications for individuals or society. Question ethics recognizes that the way questions are asked can have ethical implications, such as influencing responses, respecting privacy, or preserving dignity. It emphasizes the importance of ethical behavior and responsible communication in the questioning process. While question ethics can apply to various domains, including journalism, research, education, and interpersonal communication, the underlying principles generally remain consistent.

Some key aspects of question ethics include:

1. Honesty and truthfulness: Questions should be asked in a truthful and sincere manner, without the intention to deceive or manipulate the respondent.

2. Respect and dignity: Questions should be respectful, recognizing the inherent worth and dignity of the person being questioned. It involves treating individuals with courtesy, avoiding offensive language, and considering cultural sensitivities.

3. Privacy and confidentiality: Respecting privacy is crucial in questioning. Personal or sensitive information should not be sought without proper consent, and confidentiality should be maintained when dealing with private or confidential matters.

4. Informed consent: In research or interview settings, obtaining informed consent is essential. Participants should be fully informed about the purpose, nature, and potential consequences of the questioning process before they agree to participate.

5. Non-discrimination and fairness: Questions should be free from bias, discrimination, or unfairness. They should not target individuals based on their race, ethnicity, gender, religion, or any other characteristic. The goal is to ensure fairness and equal treatment.

6. Transparency and clarity: Clearly explaining the purpose, context, and expected use of the questions helps build trust and transparency.

Participants should have a clear understanding of how their responses will be utilized and the intended outcomes.

7. Question ethics encourages ethical reflection and mindfulness in the way questions are formulated and asked. It promotes responsible communication and aims to protect the rights and well-being of individuals involved in the questioning process.

In conclusion, ethics in research spans a broad spectrum of topics and continues to evolve with societal advancements and emerging technologies. The ethical exploration in various fields ensures that research adheres to principles of fairness, respect, and accountability, fostering trust in scientific endeavors and advancing knowledge for the betterment of society.