

CHAPTER III RESEARCH METHOD

This chapter elaborates on how the researcher conducted this research. It covers the research design, research site and participants, data collection, and data analysis based on a qualitative research design.

3.1 Research Design

This research applied the qualitative method, particularly a case study. This method was employed in order to reveal how the teacher implemented PBL and whether the project developed students' 4Cs skills. This research was also conducted to investigate students' perceptions regarding PBL outcomes. As Merriam (2009) states, the characteristic of qualitative research is focused on understanding how individuals interpret their experiences, build their worlds, and assign meaning to those experiences. As a result, this research emphasized understanding the surrounding conditions, the context, and the situation.

In addition, a case study was used for several reasons. First, this research aimed to find a better and deeper interpretation of how the teacher implemented the PBL. According to Faltis (1997), the case study method in the field of language and education uses to discover how language teachers draw on perspectives and assumptions to inform their practices. Second, as mentioned earlier, this research also analyzed students' perceptions of PBL activities. A qualitative case study is intended to understand complex action, perception, and interpretation. Moreover, the case study reports sketches and narratives described in the naturalistic generalizations (Stake, 2006). Therefore, the qualitative-case study method was the appropriate choice to conduct this research regarding the teacher implementation and exploring students' perceptions of PBL that could contribute to the development of the EFL students' 4Cs skills.

Furthermore, the researcher in this research had a dual role as the teacher and the researcher. A changing observational role where the researcher is also a member is commonly called insider research (Brannick & Coghlan, 2007). According to Fleming (2018), insider research benefits researchers by developing research questions based

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THE IMPLEMENTATION OF PROJECT-BASED LANGUAGE LEARNING (PBL) AND STUDENTS' 4CS SKILLS IN AN EFL CLASSROOM

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on in-depth knowledge of the problems that need to be investigated and revealing information about what an organization is actually like and what matters.

The researcher was assisted by an English teacher who taught in that class to guard against bias in this research. Her role was to help the researcher to collect data by filling out an essential project design elements checklist. This checklist (adopted from Buck Institute for Education, 2019) was to make sure that the project conducted by the researcher meets the criteria of PBL. In addition, the researcher recorded the research process, triangulation in the methods of gathering data and provided field notes to substantiate the result.

3.2 Research Site and Participants

The selection of the research site and participants were based on purposeful sampling. According to Patton (2002), purposeful sampling assumes that the researcher wants to discover, understand, and gain insight from which the most can be learned. This research was conducted in an Islamic senior high school in Bandung, West Java, Indonesia. There were two reasons for the selection of the research setting. First, the PBL activity was related to an analytical exposition in which students in senior high school learned analytical text based on the syllabus. Second, the school has implemented the 2013 curriculum, which suggests integrating 21st-century skills with teaching and learning.

Due to Covid-19, the school divided the students into two sessions per class. The twenty students in the first session and the sixteen students in the second session. Every session had a different schedule with only two subjects in a day. The researcher chose the second session, which involved sixteen students consisting of six male and ten female eleventh graders as participants. Then six students were chosen to be the focal students as the representatives based on their score range in the English subject. The focal students were divided into two students with high scores, two with average scores, and two with low scores in the class. The purpose of sampling is to discover individuals who can provide rich and varied insight into the indication under investigation to maximize what the researcher can study (Dörnyei, 2007). Table 3.1 shows the categorization of participants.

Table 3.1 Participants Categorization

| No | Name (pseudonym) | Level | Sex |
|----|---------------------|--------|--------|
| 1. | Student 1 | High | Female |
| 2. | Student 2 | High | Female |
| 3. | Student 3 | Middle | Female |
| 4. | Student 4 | Middle | Male |
| 5. | Student 5 | Low | Female |
| 6. | Student 6 | Low | Male |

In addition, the participants enrolled in the learning year of 2020-2021, in which all schools were closed to curb the spread of COVID-19 and shifted the learning process from offline learning to online learning. After almost 18 months of online learning, UNICEF and the World Health Organization (WHO) urge all schools in Indonesia to reopen and resume face-to-face learning safely. Therefore, all the participants in this research experienced an offline classroom for the first time this semester.

3.3 Data Collection

To answer the research question, the researcher collected the data using three different techniques: observation, document analysis, and interview. Case study research usually combines a variety of data collection methods such as interviews, observation, and document archives (Dörnyei, 2007). These three data were collected from October 26th to November 26th, 2021. It took a long time because there was only one meeting in two weeks. Therefore, the researchers took the initiative to create an online class with a WhatsApp group to collect deeper information. The detailed description of the data resources is concluded in table 3.2.

Table 3.2 Data Resources and the Instrumentation

| No | Data Resources | Objectives | Instrument |
|----|-------------------------------------|---|--|
| 1. | Observation (Classroom observation) | To discover teacher implementation patterns of PBL, especially the aspects of PBL that are integrated with 4Cs skills in an EFL classroom. | 1. Video recording 2. Field note |
| 2. | Document Analysis | 1. To find out the aspects of PBL that might contribute to EFL students' 4Cs Skills from self-assessment 2. To classify students' reflections. | 1. Students' reflection 2. Students 4Cs skills rubric 3. Students' project |
| 3. | Semi-structured Interview | 1. To reveal focal students' responses and perceptions on how they think of doing the PBL. This interview also aimed 2. To strengthen unforeseeable findings from observation and document analysis. | 1. Audio recording 2. List of interview questions |

3.3.1 Observation

In this research, the observation was conducted to discover teacher implementation patterns of PBL, especially the aspects of PBL that integrated with 4Cs skills in an EFL classroom. The researcher acted as a participant observer, which is as a teacher. In participant observation, the researcher becomes part of the environment by actively engaging in activities in which participants typically are involved (Kawulich, 2012). In addition, the observation was used to triangulate data in order to compare the findings drawn from one source of data with those drawn from a different technique of gathering data. Later, the researcher used observation data in an interview, so the researcher could question the participants and verify perceptions and reasons that occurred in observation. As Gog et al. (2008) mention, the characteristic

of participant observation is continual interaction between the researcher and the participants.

Because of the researcher's role as a teacher, the researcher recorded all the process, which was later used to recall specific details that were observed in a natural setting. Moreover, the benefit of video recording was that the researcher could repeatedly review and transcribe what occurred at the research site. Researchers can collect other kinds of documentary evidence (e.g., memos, records, examples of student work, and digitally recorded interviews) that are useful in coding and analyzing the data (Kozleski, 2017).

Due to the limitation of video recording, such as not everything being caught on the camera screen and didn't sound clear, the researcher also provided a field note to support unrecorded data. The researcher used the field note to help remind and highlight the phenomena that need further analysis that contribute to answering the research questions. According to Kozleski (2017), careful and reflective field notes and video records allow researchers to draw on a rich data set and characterize specific events in educational settings.

3.3.2 Document Analysis

The documents used in this research were students' reflections on project work, students' 4Cs skills rubrics, and students' projects. These documents were collected during the implementation of PBL and then analyzed for data triangulation. These documents are substitutes for records of activity that the researcher could not observe directly (Stake, 1995). The student's reflection on project work was adopted from the Buck Institute for Education (BIE) (2019) (Appendix).

The rubrics of students' 4Cs skills were given at the beginning of a project by Google form. These rubrics were based on the PBL works framework by Buck Institute for Education (BIE). These rubrics describe 4Cs skills in the context of PBL. The main goal of these rubrics was to assist students in reflecting on their work and better understanding what they need to do to improve. Throughout the project, the teacher allowed the students to assess and reflect on their 4Cs skills by choosing one category

that represents them when working on the project. These rubrics are shown in the appendix.

Every column in the rubrics is divided into three levels of students' quality. First, "Below Standard" means that the students have not yet shown evidence of their competency. Second, "Approaching Standard" implies that the students are demonstrating some evidence of increasing their level of proficiency but still have gaps or weaknesses. Last, "At Standard" defines as students showing proficiency to a level appropriate to their age and experience.

Critical Thinking and Creativity & Innovation rubrics are organized by the four phases of a typical project because different components of these skills are used at different times. Meanwhile, the collaboration and communication rubric does not follow the phases of a project because the competencies apply to all project stages. For instance, a student should finish the tasks on time, build on others' ideas, and show respect for teammates during the project, not just at the beginning.

In addition, to support the students' self-assessment of 4Cs skills, the teacher provided sources of evidence for 21st-century competencies such as self-reflection, peer feedback, and teacher observations. Another source of evidence was the product students created and their explanation of how it was created in the presentation. For example, when students presented the project work in the classroom, the teacher assessed their competency by asking them to explain the project's ideas to evaluate how the students used their critical thinking.

3.3.3 Interview

This research used interviews to reveal focal students' responses and perceptions of their thoughts about doing the PBL. This interview also aimed to strengthen unforeseeable findings from observation and document analysis. The interviews were conducted with the six focal students at the end of the project. According to Stake (2006), for a qualitative researcher, interviews are used to find unforeseen data that the researchers could not see directly and to obtain unique information or interpretation conveyed by the person interviewed.

The researcher applied semi-structured interviews and generally open-ended questions to explore students' opinions, behavior, and experience so that they could express themselves in their way. The interview was mostly conducted using the Indonesian language to avoid misunderstanding. Since semi-structured interviews often contained open-ended questions and discussions developed in unanticipated directions, the researcher recorded the interview process and later transcribed these tapes for analysis. Therefore, the researcher can focus on interacting with the participant and follow the discussion. The researcher needs to record semi-structured or unstructured interviews as research data to catch all the details of the nuances of personal meaning (Dörnyei, 2007).

The interview questions were adapted from Evans (2019). The questions were created using the HQPBL framework's six criteria (Appendix): intellectual challenge and accomplishment, authenticity, public product, collaboration, project management, and reflection. Then, several questions were added by the researcher spontaneously during the interview.

3.4 Data Analysis

The researcher conducted data analysis along with collecting the data from observation, documents, and interviews. In qualitative research, the strategy to analyze data is to do it synchronously with data collecting. Data that have been analyzed while being collected are cost-effective and insightful (Merriam, 2009). Simultaneous data collection and analysis occurred in and out of the field. The researcher conducted some basic analysis while collecting data and in between the meetings in the classroom so that the researcher could prepare for the next meeting activities to avoid unfocused, repetitive, and overwhelming data that needs to be processed. Bogdan and Biklen (2007) suggest planning data collection sessions according to what researchers discovered in previous observations. Also, analyzing field notes and memos as researchers go along and plan to pursue specific leads in the next data collection session.

In general, the data in this research were analyzed based on Merriam's (2009) and Creswell's (2007) theories (Table 3.5). According to Creswell (2007), data analysis

in qualitative research comprises gathering and organizing data (such as transcripts or photographs) for analysis, filtering the data into themes by coding, and finally presenting the data in figures, tables, and a discussion. The purpose was to make both the text data and visual data comprehensible.

Table 3.5 Data Analysis and Representation in Case Study (Creswell, 2007)

| Data Analysis and Representation | Case Study |
|---|---|
| Data managing | Create and organize files for data |
| Reading and taking a note | Read through text, make margin notes, form initial codes |
| Describing | Describe the case and its context |
| Classifying | Use categorical aggregation to establish themes or patterns |
| Interpreting | Use direct interpretation Develop naturalistic generalization |
| Presenting and visualizing | present an in-depth picture of the case using narrative, table, and figures |

The first step was preparing all the data on the computer to make it easier to find and organize the data. The second step was coding or dividing all data collection into a unit/theme that was potentially relevant for answering the research questions. This process is important because text and image data are so rich that not all information can be used in a qualitative study (Creswell, 2013). The researcher started by reading through the observation field notes, documents collected, and interview transcript. Observation field notes and interviews were transcribed by computer and designated with coding. According to Merriam (2009), the coding designations can be single words, letters, numbers, phrases, colors, or combinations of these. For example, the researcher identified the data by giving code ‘C1’, which means critical thinking skill;

‘C2’, which means collaboration; ‘C3’, which means communication; ‘C4’, which means creativity. These codings were used to answer the research questions about the aspects and students’ 4Cs skills in implementing PBL (Table 3.6).

Table 3.6 Example of Format for Data Analysis

| Implementation of PBL | RQ | Code |
|---|-----|---|
| <p>The teacher discussed the use of digital posters in analytical text</p> <div data-bbox="511 646 771 907" style="text-align: center;"> </div> <p>Teacher: <i>“Why was this poster created?”</i></p> <p>Student: <i>“untuk menyadarkan kalau di luar sana masih banyak yang kelaparan bu”</i></p> <p>Teacher: <i>“Is it relevant to your life? why?”</i></p> <p>Student: <i>“jadi tertampar sama gambarnya bu, soalnya saya kadang masih suka buang-buang makanan”</i></p> | RQ2 | <p>Intellectual challenge</p> <p>C1</p> <p>Authenticity, C1</p> |

The next step was making an interpretation or becoming more theoretical. This interpretation consisted of making comparisons between the data and the theories or other research. Merriam (2009) mentions that theorizing is a step toward developing a theory that clarifies a particular practice-related concept and allows a researcher to predict future behaviour. The data from observation was identified based on the theory of the implementation of PBL by Fleming (2000) and the aspect of the High-Quality Project-Based Learning (HQPBL) framework by Buck Institute for Education (BIE) (2017). This process was conducted to check which aspect of a teacher’s implementation of PBL can contribute to the development of students’ 4Cs skills.

Further, the analyses of documents data and interviews were conducted at the end of the analysis process. It was intended to crosscheck, ensure, and prove the resulting data from an observation regarding students' reflection and perception, perceived improvement in 4Cs skill, and project evaluation. At last, all qualitative data were analyzed using open theme coding and theory to triangulate findings and identify similarities and differences

The last step was presenting and reporting the findings. Before writing the report, the researcher made an outline to write down all the themes that might be covered in the report. According to Merriam (2019), this activity indicates whether researchers have done enough background reading, analyzed the data, or thought about it enough. Finally, the main part of the report contained the findings and discussion based on the research questions. The findings section began with a brief overview of the findings, followed by the presentation of each separate finding supported by quotes from interviews, field notes, and references to documentary evidence, and finally, related the findings with other theories and research in the discussion section.

3.5 Concluding Remark

This chapter has explained the way the researcher conducted the research. It starts from the research design, research site and participant, data collection, and data analysis. This research is a case study that involved eleventh-grade students as participants. The data is collected through observation, documents, and interviews. Furthermore, all the data collected were analyzed qualitatively to be interpreted and triangulated to enhance validity. Next, chapter IV explains the findings and the discussion of this research.