

CHAPTER III

METHODOLOGY

This part tries to elaborate detail information about the way the research was conducted. The first point covered is research design which provides a brief research framework on how the research was conducted. The second point is data collection which covers the elaboration about sites and participants, types of data and techniques and instrumentations. The next point covered is the data collection procedures which is followed by the data analysis. They give the explanation about the steps employed in doing the research and how the data were analyzed. The last point is trustworthiness.

3.1 Research Design

In contrary to the controversy of the use of Scientific Approach in language teaching which invites some reactions that stated Scientific Approach does not suit the language learning that well, there are many English teachers who still believed in this approach. Especially in formal education, there are many English teachers using this approach. Even some of the schools require all of the teachers to use only this approach in their teaching. It might be because of this approach are recommended by 2013 curriculum.

This study was a qualitative case study design which explored in detail about the phenomenon. It was aimed at getting deep understanding on how English teachers themselves valued Scientific Approach and to explore how the beliefs were reflected in her teaching practices.

The case study itself allows the researcher to explore the phenomenon through analysis, in depth investigation, or reconstruction to understand a behavioral condition of a particular case (Zainal, Zaidah, 2007). It is usually conducted to get a depth understanding about the case in its natural setting and identifying its context and its uniqueness (Punch, 2005). Thus, this study only focused on understanding a phenomenon under investigation through the teachers' eyes. The researcher did not give any treatment and avoid any intervention which

would disturb its natural setting. Furthermore, case study is very contextual (Yin, 1994). It really depends on the context where or when the research is conducted, so that the results could not be generalized. It will only be valid to the context there it is implemented. Therefore, a case study design fits the framework in conducting this kind of research.

3.2 Site and Participants

This study was conducted in a senior high school in Sumedang, West Java. The school was selected for its good reputation since the school was considered to be one of the best senior high schools in West Java. It often won educational competitions and in 2017 the school was chosen to be one of the few schools to be a pilot school. The school often became the first school to implement new innovations recommended by the government, for example: conducting the e-report, e-assessment and e-feedback for students and parents. In context to the implementation of Scientific Approach, this school had been chosen to be the referral school for the implementation of Scientific Approach in Sumedang for more than 4 years.

In this study, the participants were selected through the purposive sampling. Following the criteria in selecting the participants suggested by Burns and Grove (2003), as follows: (1) participants have to be experienced relating to the phenomenon investigated; (2) they have to be verbally fluent and able to communicate their feelings, thoughts, and perceptions in relation to the research; (3) It is better for them to have the same language as the researcher to reduce the possible loss of semantic nuisance, and (4) participants have to express willingness to be open to the researcher. For these study, the two participants' profile selected could be seen in these following table.

Table 3.1 Profile of Participants

No.	Time	Genre	Education	Teaching Period	Languages
1	Teacher 1	Male	Bachelor in Education	> 30 years	Fluent in Indonesian and English
2	Teacher 2	Female	Master in Education	> 35 years	Fluent in Indonesian and English

The participants were chosen through pre-survey before doing the research. They were suggested by the school since there were considered to be qualified to be observed. The participants were two English teachers who had been teaching for more than 30 years in the school. They had experienced some curriculum changes so it would make them have more insight about curriculum. They both also had the education to meet the requirement to teach English in High school. The first participant was a bachelor in education while the second participant was a master in education. Currently, they had been assigned by the school to use Scientific Approach for more than four years. They were chosen purposively in the assumption that they were able to provide the information needed. The participants were also chosen because they were willing to share their feelings and thoughts comprehensively and were able to elaborate it clearly. They were willing to be observed in their natural setting openly. Both participants were fluent and had no problem to communicate both in Indonesian and in English. The data of the participants are shown in the table below.

3.3 Types of Data

In conducting this study, there were two kinds of data collected, which were primary source data and secondary source data. As stated in Leatherby Libraries (2009), the primary source data which could be used for the research were data created at the time of the research conducted and about the research subject. These data were directly taken in the field of the problem concerned. In this study, the primary source data were acquired from interview, observation and document analysis. The secondary data, however, were data created by someone who did not experience the studied event directly. According to Concordia University Texas Library (2010), in the research, the secondary data were not directly connected with the people or objects being studied, like journals, books, encyclopedias, dictionaries, etc. The secondary data used in the study were taken from journals, curriculum, books, dictionaries, presentation file, etc. They were used to provide framework or support the ideas or interpretations in regard to the research problems.

3.4 Research Instruments

To answer the research questions, this study employed three kinds of data instruments. The first one was interviews consisting several questions to be answered developed by the researcher following the framework suggested by Chan and Leung (1999). The next instruments were observations and document analysis. Observation sheets were developed by the researchers to observe the teaching process and to analyze the lesson plan using some theories suggested by some experts about Scientific Approach and beliefs. All of the instruments were validated by an expert which was qualified in the field. The more detailed explanation about the instruments will be elaborated in the next points, while the more detailed explanation about instruments validations are explained in the last point of this chapter.

3.4.1 Semi Structured Interviews

The semi-structured interviews were conducted to explore the teachers' beliefs in Scientific Approach. Several questions were provided as the basic questions, however in the process, there were some modifications. As stated by Harrell and Bardley (2009), semi-structured interview collected information in detail in a conversational style (Harrell and Bradley, 2009). This kind of interview allowed the researcher to make some modification in the process to the provided questions. Moreover, the guideline questions were focused on around the beliefs of the teachers on the Scientific Approach especially on the stages and the roles of the teacher in conducting the approach. They were framed by the theory of beliefs developed by Chan and Leung (1998).

The supporting instruments which were used in doing the interview were voice recording and note-taking. According to Merriam (2009), recording is the most common instrument used in conducting research since it will not leave any information and could be played back-and forth to clarify it. The note-taking, furthermore, were also used as a supportive instrument to scope the information that could not be caught by voice recording like gestures or facial expression.

3.4.2 Observations

The observation technique was used to explore how the beliefs were reflected on the classroom implementation. According to Gustine (2004), observation could be used to explore and focus on the implementation of a certain method. It involved the activities of observing the behavior, action and communication that the participants show considering the context that might affect them during the observation (Hamied, 2017). However, the focus of the observation in this research was on the implementation of Scientific Approach based on its stages, the principles used by the teachers in each stages and the roles of the teachers.

The supporting instruments used in doing the observations were video recording, observation sheet and note-taking. In the process, it was very important to observe the situation in detail and describe it accurately and comprehensively (Hamied, 2017). The observations were done to two of the participants in around 3 weeks. There were 2 classes for each participant which represented both active and passive classes.

3.4.3 Document Analysis

The document analysis was used to analyze the lesson plans made by the teachers. Besides the real action in the classroom, the belief could also be reflected in the lesson plan. Moreover, somehow, sometimes the implementation in the classroom is different from what is written in the lesson plan. Thus, it was necessary to also analyze the lesson plan.

The supporting instruments used were document analysis sheets. There were two kinds of sheets which are developed using the lesson planning standard in conducting Scientific Approach based on Kemdikbud (2013) and some theories about Scientific Approach as the main frameworks.

3.5 Procedures

There were several steps conducted in doing the study. In general, this research was conducted in these following orders:

- (1) Preparing the burning issue and deciding the title of the research;

- (2) Deciding the research questions and objectives;
- (3) Preparing literature which support the variables involved;
- (3) Deciding frameworks which suited need;
- (4) Deciding the research design, method and instruments;
- (5) Arranging instruments based on the research design and frameworks;
- (6) Validating instruments to experts;
- (7) Collecting the data;
- (8) Processing the data (transcribing, categorizing, coding);
- (9) Analyzing the data;
- (10) Arranging research report.

Furthermore, to be more specific, the procedures in each technique will be elaborated below.

3.5.1 Interview Procedures

The interview were done in one session each. The first interview was conducted to T2. It was on October 3, 2018. The second interview was conducted to T1. The interview to T1 was on October 9, 2018. There were also some unrecorded interviews conducted to T1 after the first observation. Since the objectives of this research were to explore the beliefs of the teachers and figure out how they were reflected in the teaching implementation, the interviews were done before the observations conducted. It gave more benefits to the researcher since it raised the awareness on what beliefs appeared in the observation sessions and how they were shown. There was disadvantage that might appear in doing the interviews first before the observations which was the possibility of having bias. To avoid that, the interviews were done right before the observations and after the teachers submitted the lesson plan. It was expected to reduce any kind of unnatural acts during the observations.

In conducting the interview in this study, the steps were: (1) providing instruments; (2) having the instruments checked by expert; (3) contacting the participant to decide the time; (4) conducting interview; (5) doing the data analysis; (6) Deciding whether there should be other interview or not; (7) member checking.

3.5.2 Observations Procedures

The observations were done in 7 sessions in total. 3 sessions to T1 and 4 sessions to T2. For T1, there were only two classes observed. Two meetings for the first class and one meeting for the second class. The first observation of T1 was done on October 9, 2018, the second observation was done on October 11, 2018 and the last observation of T1 was conducted on October 16, 2018. While for T2, the observations were also conducted in two classes. The first class got one observation and the second class had three sessions of observation. The first observation was done on October 3, 2018, the second observation was done on October 11, 2018, the third observation was done on October 18, 2018 and the last observation was done on October 25, 2018.

Furthermore, in doing the observation, the steps were: (1) providing the instruments; (2) having the instruments checked by expert; (3) contacting the participants to decide the best time for the observation to be conducted (4) doing the observation 1; (5) doing the analysis; (6) rechecking the instruments; (7) doing the observation 2; and so on.

3.5.3 Documents Analysis Procedures

The document analysis was done to four lesson plans in total, two lesson plans were from T1 and another from T2. In doing the document analysis, the steps would be done were: (1) providing instruments; (2) having the instruments checked by the expert; (3) asking for the documents (lesson plans) needed; (4) doing the analysis.

3.6 Data Analysis

This section demonstrates the way of data analysis of this study. In general, the process of analyzing the data of this study followed the interactive model of analysis was used to follow Miles and Huberman (1984) Miles which were: (1) reducing the raw data got from the interview, observation and document analysis by selecting, simplifying, and focusing on only what were needed; (2) the data reduced were displayed in the form of table. The data were arranged based on the categories appeared during the coding process; (3) the data presented in the

form of table will be further interpreted and described in the findings and discussion section.

The process of analyzing data could be done during and after collecting the data (Merriam, 2009). This study, however, besides mostly would the data analysis after all of the data have been collected, the data analysis during collecting the data will also be conducted. The analysis were conducted during field-note taking in the observation and document analysis and also during the between interviews. Therefore, the data analysis of data from each data collection technique will be discussed below.

3.6.1 Data Analysis from Interview

As discussed in section 3.2.4, the data gathered from interview were about the beliefs of the teacher about Scientific Approach. First of all, the data gathered from the recording were transcribed. All of the raw transcribed data were organized in a form of table. The data were arranged using the framework suggested by Chan and Leung (1998). Furthermore, the data were coded and interpreted based on the themes formed from the answer of the interviews.

3.6.2 Data Analysis from Observation

As elaborated before, the data collected through observation were the implementation of Scientific Approach in practice and to see how the beliefs mentioned in the interview were reflected in practice. The observation data were collected using video recording and note taking using the observation sheets. The first step done was re-checking the data collected by the note taking and the data collected using video recording. The data were then displayed in a form of table and interpreted based on the themes and coded based on several theories.

3.6.3 Data analysis from Document Analysis

The data collected through document analysis focused on the planned or intended implementation of Scientific Approach. The process of analyzing the data were not be different with the other data taken from the observation techniques. The data from the lesson plans were collected and coded into the table

using the sheets made. Furthermore, those data were interpreted based on the themes and coded based on the theories used.

3.7 Trustworthiness

To get trustworthy and responsible results, the data were taken from suitable sources and have to be truthfully interpreted and presented so that the audience who read this report could trust it. According to Merriam (2009), the audiences of the study must be impressed to believe that the result shown is trustworthy by expending its credibility. Following Creswell (2009) who states that there are eight basic strategies to enhance the research credibility in qualitative research, this research, employed three of them which were triangulation, member checking, and validating instruments. The more in detail explanation, could be found as follows.

3.7.1 Triangulation

In order to enhance the credibility of this research, the first strategy conducted was the triangulation. This strategy is commonly used in conducting the qualitative research. There are three ways in doing the triangulation, which are employing multiple sources of data, multiple investigators and multiple methods to confirm the findings (Merriam, 2009). In this study, multiple sources of data were used which were primary sources of data, collected through interview, observation and document analysis, and secondary sources of data, taken from journals, books, curriculum, textbook, presentation file, etc. This study also conducted multiple methods to confirm the findings which were through interviews, observations and documents analysis. Besides, following Patton (1990), this study also added to employ multiple theories as well.

3.7.2 Member Checking

Member checking was employed to get the data verified and validated by the participant. In doing the member checking, the data or results are returned to participants to be checked for its accuracy (Birt, et. al., 2016). In this study, the member checking was employed by returning the transcription of the interview

data to the teachers to be checked and verified. This step were done in order to confirm the accuracy of the data by avoiding any wrong transcription or any miss interpretation. However, there were not much corrections done by the teachers. There were only clarifications on some unclear explanation.

3.7.3 Expert Judgement: Validating Instruments and Results

In attempt to make this research trustworthy, the instruments and the results of the study were judged and validated by the expert. The instruments which had been validated were: interview questions and the observation sheets for classroom observation and document analysis. The instruments validation was done before doing the research to the field. While validating the results was done when the results were written in a form of the report.

The expert who were trusted to do the validation were one senior lecturer in Universitas Pendidikan Indonesia who had been experienced in this field for a very long time. She was considered to be the experts of curriculum and teaching methodology since she had been teaching those subjects for a long time. The expert also had conducted some countable studies about teaching methodology, English teaching curriculum, etc., including about the Scientific Approach in ELT context.