

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses things related to the way how this study was conducted, consisting's of research questions, research design, research site, participants, techniques of collecting the data, data collection procedures, and data analysis procedures.

3.1 Research Questions

The research question of the study focused on the following questions:

1. How is descriptive text taught through discovery learning?
2. What are the strengths and weaknesses of the implementation of discovery learning in teaching spoken descriptive texts as perceived by teachers?
3. What is students' attitude toward the implementation of discovery learning in learning spoken descriptive texts?

3.2 Research Design

Research is a process of steps used to collect and to analyze information to increase our understanding of a phenomenon, issue, or a problem (Creswell, 2002 in Malik & Hamied, 2014:3). Whereas, research design refers to the plan used to examine the question of interest (Marczyk, DeMatteo, & Festinger, 2005:22). The topic discussed in this research is the implementation of discovery learning methods for teaching descriptive texts taught by the teacher, the strength and weaknesses that perceived, and students' attitude toward it. The investigation was to find the realization of the implementation by descriptively elaborating the field data. The design of this research was descriptive qualitative method. On the matter, Boeije (2009) states that

Descriptive qualitative methods offer the opportunity for participants to describe the subject of study in their own words and to do so largely on their own conditions. They may express views, give words to their experiences and describe events and situations. Likewise, with the use of various observation methods, extended descriptions of cultural behavior, knowledge and artifacts can be obtained. The information gained is not limited to preconceived questions and categories, and as a consequence can provide rich and detailed data that leads to focused descriptions of a given phenomenon in the social world (2009:32).

This study applied the principles of qualitative approach that puts forward for naturalistic and interpretative ways of understanding to the phenomena. The portrait of single classroom activity was required in order to get the teacher's efforts in applying the discovery learning method to English classroom practice as well as students' attitude on it. Since this study only focuses on a particular instance of educational practice associated with the phenomenon of the implementation of the discovery learning method in classroom practice, descriptive qualitative research involves analyzing and interpreting texts and interviews in order to discover meaningful patterns descriptive a particular phenomenon (Auerbach & Silverstein, 2003:3). This study focuses on particular phenomenon which describes a natural situation as what Creswell (2012) states that qualitative research concern with the understanding of human behavior from the natural setting in daily life.

Thus, this study as the present research tried to identify and explore the teacher implementation of discovery learning methods which realize from the English teacher's perceived in the classroom during teaching and learning process. The setting of the research was taken as natural as possible in order to get the original data about teacher and students' interaction during the teaching and learning process. As stated by Borden and Abbott (2011:39) and Creswell (2012:19), qualitative research has the characteristic of descriptive and tends to use analysis with inductive approach, that doesn't need statistical calculation; this study tends to analyze word or images, instead. This study also requires multiple

data collection in order to enhance the credibility of the findings from a certain phenomenon (Emilia, 2009; Rodrigues, 2010; Wantoro, 2014).

3.3 Research Site

There are five vocational high schools located in Bangka Tengah Regency. One of the vocational high schools in the Koba sub district was chosen as the site for this study. Koba is famous for its history, culture, and education. It is important that the selected site and participants are not taken for granted, but decided on purpose to provide appropriate data embracing the research problems under examination (Creswell, 2012). Therefore, there are three reasonable considerations in selecting the research site and participants: current school & curriculum, practicality, and the ease of getting access.

First, the research site has been piloting 2013 English curriculum in the Central Bangka Regency. According to Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor. 160 Tahun 2014 section 2 verse 1, *“satuan pendidikan dan pendidikan menengah yang telah melaksanakan Kurikulum 2013 selama 3 (tiga) semester tetap menggunakan kurikulum 2013”*. The Central Bangka Regency is one of the units of education and secondary education which has been implementing the 2013 curriculum since 2013 to the present. Koba as one of the urban sub districts currently applies the 2013 curriculum because of the government policy there. Therefore, it serves as the context in which the present study is administered. Under the circumstance of current educational reform, Central Bangka Regency takes an active role in exploring educational reform initiatives to improve its education at all levels.

The second reason this school was chosen as the research site due to its easily reachable location. It supports the practicality and feasibility of the research. Besides, it has a basis of mutual trust that has been established since the researcher was a teacher at the site in 2010. The researcher has some contact with an education department of Central Bangka Regency which is in charge of giving permission to do research in one of the vocational high schools at Koba sub

district and offering professional support for vocational high school teachers in Koba sub district. It was assumed that the investigator could get access to the research site. The necessity of getting access is considered to be an important point, since it could support researcher to get the expected data required in this study (Heigham & Croker, 2009). This process enables researcher to access the school and to select the participating English teachers.

3.4 Participants

A descriptive qualitative particularly requires purposeful sampling (Burns, 2000; Gall *et al.*, 2007; Gay *et al.*, 2009; Yin, 2003, 2011). In this study, the following criteria were applied to assist the selection of participating female English teachers: currently work in vocational high school in Koba sub district, have been certified, have taught for more than ten years, have recognized the implementation of the 2013 curriculum in vocational high school, the age ranging between 30 and 45, and are female English teachers interested in the current study.

These criteria were made considering that the English teachers who would not only be willing to share their teaching experience, but also have the way to implement discovery learning strategies in teaching English. Since, the number of females in urban vocational high school is larger than those in rural area (Coleman, Qiang & Li, 1998), it was more convenient to select female English teachers in vocational high school in Koba sub district. Burns (2000) suggests some useful ways of purposeful sampling. For instance, these include comprehensively reviewing all available participants before making final decisions, selecting the ones recommended by experts, selecting the place and participants which is easy to access, and selecting another participant by participant referral. For convenience, the researcher asked for the help of a headmaster in the schools there, especially those which have had a long-term collaboration with the educational department of Central Bangka Regency and knew some successful female English teachers in vocational high schools in Koba sub district.

A female English teacher in vocational high school who met the criteria was recommended by the headmaster and gained her agreement to participate in this study. It is supported by Richards and Schmidt (2007) who state that sampling in qualitative research should be conducted through the process of selecting a small number of individuals as the informants who contribute to the understanding of the phenomenon in question. They also state that descriptive qualitative can be carried out with a single participant or, when studying multiple contexts, may have as many as 60 or 70 participants. Hence, the researcher chooses a single participant as a sample (Merriam, 1988 in Nunan, 1992:77, 82; Stake, 1985 in Emilia, 2009:232; Hinkel, 2011:209; Yin, 2011:57; Creswell, 2012).

3.5 Techniques of Collecting the Data

To collect the data related to the problem investigated the research, the following instruments are needed. Each of them will be discussed in the following sections.

3.5.1 Instrumentations

In this study, several instruments were used in collecting the data, namely observation checklist, interviews guideline, and questionnaires. These three types of data collections were expected to give this study a triangulation as primary sources. The detailed descriptions about the methods are illustrated separately in the following subsections.

3.5.1.1 Observations checklist

Observations checklist, field note and video recording were the first techniques in collecting data related to the problem investigated in this research. Observation is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place (Kumar, 2011:119). In addition, as the name implies, observation involves watching (observing) the subject's (teacher) behavior and activities (Mitchell & Jolley, 2010:219). The

classroom observations were conducted in one of the vocational high schools in Koba, Central Bangka Regency. It was carried out at tenth grade in accounting class for eight meetings. The observations were focused on teacher applying discovery learning methods in classroom and students' attitude toward the implementation of discovery learning activities. In short, these observations were conducted to answer the first research questions and support the second and third research questions of this study. The form of observation checklist was modified from Bruner (1961), Syah (1997), and Kementerian Pendidikan dan Kebudayaan (2013) see in Appendix 1.

3.5.1.2 Interviews guideline

Interviews were the second techniques in collecting data related to the problem investigated in this research. Interviews are a relatively common way of collecting data in research. The data collection and the forms are limited only by the requirements of the research question and the related research design (Marczyk *et al.*, 2005:117). Meanwhile, McCracken (1988 in Creswell, 2012:102) states that interviews refer to the need in qualitative interviews to let the respondent describe his or her experience about a theme of mutual interest. Therefore, the interviews were conducted to get more information related to the teacher opinion about the strengths and weaknesses of the implementation of discovery learning in teaching descriptive text.

In this study, the semi-structured interviews were used to support the data gained from the observation. Semi-structured interview is administered to the teacher. This type of interview is selected since it results in open-ended questions to appear and Kvale (1996) argues that if we ask open-ended questions, follow-up particular topics in a second interview, the interviewee will give the opportunity to comment on her interpretation of the answer. The interviewers ask the same basic questions in the same order. The respondents answer the same questions, thus increasing comparability of responses; data are complete for the respondents on the topics addressed in the interview (Cohen *et al.*, 2007:353). This process is

likely to obtain some rich information and original data based on the issues and topics of the research study. Furthermore, the result of the analysis of the interviews was presented in the next chapter.

3.5.1.3 Questionnaires

A questionnaire was used in this study. A questionnaire is a written list of questions, to which the answers are recorded by respondents (Kumar, 2011:124). In a questionnaire, respondent reads the questions, interpret what is expected and then write down the answers. In line to the statements, this study employed closed-ended questions. In closed-ended questions the possible answers are set out in the questionnaire and the respondent ticks the category that best describes the respondent's answer.

In this study, the closed-ended questionnaires were distributed to find out students' attitude toward the implementation of discovery learning in learning descriptive texts. The questionnaires offered the students with a sequence of questions that enable the respondent to answer as a result of his or her own (Wysocki, 2008:142). The answer selected is among existing answers. There are many advantages of using questionnaire in this research. According to Kumar (2011), the advantages of using questionnaire are less expensive and it offers greater anonymity. It is less expensive because we do not have to interview every respondent, and it also saves time for human and financial resource. The use of a questionnaire, therefore, is comparatively convenient and inexpensive (Kumar, 2011:127). Besides, due to the presence of direct interaction between respondents and researchers, this method provides greater secrecy. In some situations where sensitive questions are asked it helps to increase the likelihood of obtaining accurate information (Kumar, 2011).

As discussed previously, the questionnaires were posed to thirty-five students of the tenth grade accounting class in one of vocational high school in

Koba, Central Bangka Regency. The participants were answered twenty questions by choosing one of the answers representing their interest, opinion, attitude, and behavioral of the situations. The categories were “strongly disagree, disagree, uncertain, agree, and strongly agree” as listed on upon the questions. The components of attitude in the questionnaire are adopted from the theories proposed by Kementerian Pendidikan dan Kebudayaan (2013) and Syah (1997). In addition, the data from the questionnaires were composed by resounding on the show one by one organization as suggested by Dörnyei (2003). The result of the questionnaires is explained in the next chapter as the research finding and discussions.

3.6 Data Collection Procedures

“Data collections are administered simultaneously during and after data collection stage because qualitative data constantly evolves” (Anderson & Arsenault, 2005 in Wantoro, 2014:43). Data collection methods in qualitative research tend to use certain data collection methods, e.g. semi-structured and open interviews, observation, narrative accounts and documents, diaries, and also tests, rather than other methods and finally a conclusion then could be drawn (Cohen *et al.*, 2000:189). The data collected is used to gain in-depth information in this study, based on the main data from classroom observation, semi-structured interviews, and the questionnaire. The data are interpreted in accordance with research questions and then the conclusion was drawn in chapter five.

In this study, data collection procedure was achieved from the classroom observation, open-ended interviews and closed-ended questionnaires. Data were analyzed based on the theory of qualitative data analysis. The following subsections will discuss the way the data were collected.

3.6.1 Observation

Observation refers to two distinct concepts being aware of the world around us and making careful measurements (Marczyk et al., 2005:6). This observation is

focused on the way of teachers' implementing discovery learning in the classroom, finding teachers' strengths and weaknesses in teaching descriptive texts through this approach, and the attitude of students toward the teaching process of descriptive texts through discovery learning. Regarding to these data collection, the researchers positioned himself not as a teacher, but only as a non-participant observer. On the other hand, the researcher does not get involved in classroom activities, but remains a passive observer, watching and listening to its activities and drawing conclusion from this (Kumar, 2011:120).

In addition, this study employs non-participant observation through recording observation. There are two basic types of information gathered by using recording observation (e.g. field notes): first, descriptive information what the observer has directly seen or heard on-site through the course of the study; and second, reflective information that captures his personal reaction to the observation, his experiences, and thoughts during the observation session (i.e. recording the behavior of people, events, activities, and situation) (Creswell, 2009; Mitchell & Jolley, 2010:219–220).

In this study, the data from the classroom observation were collected through the observation checklist, field notes, and video recording. The recording observation was assisted by one of the administrative staffs in school. The researcher positioned himself to see, hears, and experience, and to write down the important information regarding the data and reflect on it. The observation checklist and field note were written as the courses were taking place. The advantage of recording an interaction is that the observer can review a number of times before interpreting an interaction or drawing any conclusion from it, and also invites other professionals to view the interaction in order to arrive at more objective conclusions (Kumar, 2011:122). The aim to gather the data immediately, and to check the recorded observation or recorded field notes is written after the session while the words are still true.

3.6.2 Interview

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Interview in this study is done to “seek to describe the phenomenon under study” (Wantoro, 2014:44). This interview is used to portray and to obtain information from the teacher about the process of implementation discovery learning including the strengths and weaknesses. This interview is not only about a purposeful interaction where this study tries to portray and obtain the information from the subject participation in research, but also about what is on their mind - what they think or how they feel (Gay *et al.*, 2009; Fraenkel *et al.*, 2012; Malik & Hamied, 2014). Furthermore, collecting, analyzing, and interpreting data from the interview was done constantly moving back and forward to avoid them adding some new information to their understanding of the topic in this study.

Semi-structured interview was used in this study. Semi-structured interview is administered to the teacher. This type of interview is selected since it enables open-ended questions to appear and Kvale (1996) argues that if the researcher asked open-ended questions, follow-up particular topics appear and give the interviewee the opportunity to comment on researcher interpretation of the answer, you are likely to obtain some rich, original data. A teacher was chosen to be the interviewee. The interview is used mainly to find out the interviewee’s interpretation and to find out information that the researchers were unable to observe themselves (Stake, 2010). The interviews between the interviewer and interviewee were recorded directly. A voiced recorder was used in this study to avoid losing valuable information from the interview session, then the talk was transcribed in written text (Wantoro, 2014). The questions of the interviews were modified from Nengsih (2014) grounded on the present research. Moreover, doing an interview by using a recorder minimizes a bias from a participant.

3.6.3 Questionnaire

A set of questionnaires is used in this study. Gay *et al.*, (2009) proposes a definition of a questionnaire as a written collection of self-report questions to be answered by a selected group of research participants. It is also supported by

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Dörnyei (2003) who defines a questionnaire as written instruments that present respondents with a series of questions or statements, then react in the manner of writing out their answers or selecting from among existing answers.

In this study, the type of data from the questionnaire was developed from Wenden (1991), McKenzie (2010) and Kementerian Pendidikan dan Kebudayaan (2013) in an attempt to assess students behavior and attitudes. The attitudinal questions concern on students' attitudes, opinions, interest, and behavior (McKenzie, 2010; Mahmudah, 2014). This questionnaire was given to thirty five students at the grade tenth in accounting class in a vocational high school in Koba, Central Bangka Regency. It was done to collect the data to answer the third research questions, since the study was limited to investigate the students' attitude toward the implementation of *Discovery Learning* in teaching descriptive texts. The questionnaire contained questions to reveal the attitude of the students related to the topic.

Closed-ended questions on the questionnaire were used, in which the respondents were provided with ready-made response options to choose (Oppenheim, 1992; Dörnyei, 2003). Furthermore, the author adds some advantages to this kind of questionnaire, that their coding and tabulation are straightforward and leave no room for rater subjectivity. The type of questionnaire was a Likert-Scale. A Likert-Scale requires participants to respond to a series of statements by indicating whether he or she "Strongly Disagree", "Disagree", "Uncertain", "Agree", and "Strongly Agree". A Likert Scale questionnaires were developed from the following guideline of Gay *et al.*, (2009) and Fraenkel *et al.*, (2012). Further, the questionnaires were presented in Bahasa Indonesia in order to avoid misunderstanding. The table 3.1 shows the categories of questions given in the questionnaire.

Table 3.1 Categories of Questionnaire

No	Categories	Item Numbers	Total
1	Students' interest in English (Behavioral Components).	(1, 2, 3, 4, 5)	5
2	Students' opinion to the implementation of <i>Discovery Learning</i> for teaching descriptive texts	(6, 7, 8, 9, 10)	5

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	(Cognitive Components).		
3	Students' attitude toward English and the implementation of <i>Discovery Learning</i> for teaching descriptive texts (Affective Components).	(11, 12, 13, 14, 15)	5
4	Students' behavioral in studying English and implementation of <i>Discovery Learning</i> for teaching descriptive texts (Behavioral Components).	(16, 17, 18, 19, 20)	5
5	Total		20

Modified from Kementerian Pendidikan dan Kebudayaan (2013) and Sumbayak (2014)

The questionnaires administered to the students can be seen in Appendix 6.

3.7 Data analysis procedures

This section describes how the data was analyzed. The data gathered from the observation, interview, and questionnaire were discussed, as follows.

3.7.1 Analysis of the classroom observation data

Analyzing the data from the classroom observation was applied in three steps. *First*, the data of recording field notes were transcribed and coded in a written language to select the information related to research questions. *Second*, the classroom observation from the video recording was interpreted to see the process of teaching and learning act, attitude, opinions, and behavior between the teacher and students using discovery learning. This process was used to chart or measure background characteristics, academic achievement, attitudes and opinions, and behavior of the participants (Cohen *et al.*, 2000:190). The researcher sat at the back of a classroom coding up every three seconds the verbal exchanges between teacher and pupils by means of a structured set of observational categories (Cohen *et al.*, 2000:204). The structured set of observational categories are coded and then interpreted (Cohen *et al.*, 2000). The transcribing and the data coding were divided into six categories of discovery learning implementation: (1) stimulation stage, (2) problem statement identifying, (3) data collection, exploration, (4) data processing, obtaining, (5) verification of the learning process, (6) generalization stages (pulling up a conclusion in general). *Finally*, all of the information from the observation was interpreted to draw conclusions and make some recommendations.

3.7.2 Analysis of the interview data

In analyzing the interview data from teachers, the data were transcribed, categorized, and interpreted. The recorded data were coded in a written text, then some parts of the interview were selected to fit into the categorization. As stated by Kerlinger (1970) in Cohen *et al.*, (2007:368), coding can be defined as the translation of question responses and respondent information into specific categories for the purpose of analysis. Furthermore, one category to another is comparable to attain a related conclusion that would be selected as the final data in the form of a thick body of information (Wantoro, 2014:47).

3.7.3 Analysis of the questionnaire

The aim of this questionnaire was to reveal the students' attitude toward the implementation of discovery learning in teaching descriptive texts. Data from the questionnaire were examined using a quantitative analysis technique. The students' responses for every question item in the questionnaire were counted, then converted into a percentage. The students' answers were summarized. All of the students' responses in the questionnaire were used for reporting the students' attitude and answering the third research questions about students' perception of the implementation of discovery learning in teaching descriptive texts.

The data from the questionnaires were coded and scored by using the SPSS 22.0 program and MS. Excel 2016. The analysis used was the Cronbach Alpha to measure the reliability of the questionnaire. The number of options was calculated with the number of frequencies emerging and then was divided by the number of students (N=35). By analyzing this way, the students' perception about the implementation of discovery learning in teaching descriptive texts could be revealed.