

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter presents methods that the research uses, including research design, data preparation (subject, types of data, sources of data, and informed consent), data collecting techniques, data analysis, and trustworthiness of the research.

#### **1.1 Research Design**

The design of this research was a qualitative research, specifically descriptive study. According to Nassaji (2015) the goal of descriptive research is to describe a phenomenon and its characteristics. This research is more concerned with what rather than how or why something has happened.

The main objective of this descriptive study is to describe the implementation of discovery learning model in teaching English. The instruments of this research were video recording, observation sheet and interview guidelines. The data were collected through video recording and observation and interview. The subjects of this research were the teacher that teach in 2nd grade at SMAN 1 Pakem.

#### **1.2 Data Preparation**

There are several points in data preparation that researchers need to address in this descriptive qualitative study. These points are research setting and subject of research, types of data, and informed consent.

### **3.2.1 Setting and Subject of Research**

Setting of research is an environment where the phenomenon being studied takes place. Meanwhile, subject of this research is chosen by the researcher to be studied and to contribute in the research. Subject of this research is one of the teachers that teach English language in second grade from social class who implemented the discovery learning model. This research was done in English subject of second grade from social class at SMAN 1 Pakem Yogyakarta.

There were so many classes at this school, but the researcher only choose one of second grade from social class. The decision was made by considering that (1)the subject taught at the time of research was English classroom, (2)the learning model (or *model pembelajaran* in bahasa Indonesia document description) stated on the teacher's lesson plan was discovery learning model, and (3)the method (or *metode* in bahasa Indonesia document description) involved activities that facilitate English language. Besides, from the school and the teacher only allowed to take the research in one class.

### **3.2.2 Types of Data**

Data is empirical evidence collected by researcher to answer research questions. In term of nature and form, the data used in this research is qualitative data, such as sentences both in written and spoken, whereas quantitative data is not. Qualitative data in this research was obtained from observation, interview, and document.

### **3.2.3 Sources of Data**

The data can come from many sources including observation, interviews, documentation, record and etc. Data of this research was gathered from the subject and sources using several techniques. Subject of this research is a teacher of English language that teach in second grade in this school. The data was gathered from the participant through interview. In addition, observation checklist, interview question and teacher's lesson plan document are also involved in this study the data sources.

### **3.2.4 Informed Consent**

After deciding setting, subject, data type, data source of research, the next compulsory phase to be done by the researcher is dealing with informed consent as one of ethical issues. Since the researcher was not one of the alumni from SMAN 1 Pakem, dealing with consent issues with the institution is very necessary. Generally speaking, the researcher is not part of the class being observed so the researcher must have formal consent letter to do subject observation.

However, consent concern with the subject of research is still has to be addressed by the researcher. This concern was done through: 1) Informing subject that the researcher is conducting research; and 2) Gaining their consent to participate.

### **3.3 Data Collecting Techniques**

Data collecting technique is one element of research that stands out because it can determine the validity of the study. Data of this research came from interviews, documents, and observations, which was gathered through several techniques of data collection. The techniques used in this study include in-depth interview, document analysis, and subject observation. As the data is gathered from interview, observation and document analysis, the researcher do four times class observation from 8<sup>th</sup> of October 2018 until 18<sup>th</sup> of October 2018 in class XI IPS 1, and then doing the interview on 28<sup>th</sup> of November 2018 for the teacher as the subject while the document analysis is gained from the subject during the class observation by take a picture of the lesson plan and students' textbook.

#### **3.3.1 Observation**

Observation is the step to monitor and watch closely teaching and learning process and collect the data from the result. Observation was done in four times of English subject class in XI IPS 1 at SMAN 1 Pakem. The focus of the observation was to capture activities that directly or indirectly related to discovery learning model implementation in English classroom. As an observer, the researcher was purely a passive observer. The researcher prepared the observation checklist to know class condition when the action done, then the researcher and the teacher discussed about the result of observation, what the problem is faced when teaching and learning process, then it was to look for good solution to solve the problem. In this stage, the researcher observed and took a recorder during teaching process.

Data from the observations indicates that teaching activities in English subject class gave the teacher several advantages and challenges in teaching with this learning model. The teacher should combine the principles and steps of the implementation of discovery learning model in the class. The teacher should make the students engage the use of English in the classroom. Moreover, it also indicates that teacher enjoy the teaching process by using the discovery learning model in the class.

The researcher made observation checklist to be used for analyzing the data. The researcher is going to analyze the class activity to analyze the discovery learning that implemented in the class. The activity during the class were analyzed by the researcher by following those two points: the principles of discovery learning and steps of discovery learning. The researcher made observation checklist during the class and analyzed the implemented discovery learning model in teaching English at SMAN 1 Pakem.

The original format of researcher observation checklist is displayed in table format to make data analysis easier.

**Table 3.1** Observation Checklist

NO	CHECKLIST	COMMENTS
<b>A</b>	<b>PRINCIPLES AND STEPS OF DISCOVERY LEARNING</b>	
1	Guides and motivates the learners to seek for solutions by combining existing and newly acquired information and simplifying knowledge	
2	Allows the students to work either alone or with others, and learn at their own pace	
3	Teaches the students how to combine prior knowledge with new, and encourage them to connect to the real world	
4	Lets the students to analyze and interpret the acquired information, rather than memorize the correct answer	

- 5 Gives students feedback for successful or unsuccessful attempts in learning
  - 6 Attracts the students' responses by providing stimulus, such as : image, video, realia
  - 7 Gives questions to the students for problem-solving
  - 8 Creates activities that involve the students to identify the problem
  - 9 Encourages the students to solve problem
  - 10 Encourages the students to present their findings
  - 11 Gives students' feedback and generates conclusion
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### **3.3.2 Interview**

Interview is one of the most important sources of qualitative study. Rather than structured queries, it will resemble guided conversation. Qualitative study interview require researcher as interviewer to work on two levels at the same time. They are satisfying the need of research's line of inquiry while simultaneously promoting such friendly and non threatening questions in open-ended interview.

Interview in this qualitative study was a semi-structured in-depth interview with open-ended questions, which is also known as shorter qualitative study interview. The interview involved the teachers who taught English language in the second grade at Senior High School. This subject was chosen by using one of non-probability sampling techniques, which was purposive sampling technique.

Other than that to make interview questions distinct from research questions, a researcher wants to ask a subject question that she can answer based on what she knows. The researcher asks one question at a time, clarifies the conversation when she talks, uses nods or other gestures, asks clarification questions, one topic to another, says thank you, and expresses an intention to follow up before the interview ended.

However, unlike ordinary conversations, related to the study that was conducted, the purpose of the interview is to obtain further information. The researcher maintains the purpose of the conversation and investigation of the research action by including four types of questions: introductory questions, transition questions, key questions, and closing questions (Castillo-Montoya, 2016).

Introductory questions is non-threatening questions that ask for narrative descriptions, it helps the researcher begin the interview easily. This question is not threatening and is used to describe experience. The beginning of this interview helps set the tone of the conversation, but also distinguishes the interview as a form of questioning. Transition questions move interviews to key questions and maintain the tone of interview conversations. Each interview that conducted by researcher (first or follow up interviews) had a transition questions that is slowly from one topic to another. Under each new topic, researchers begin with unnecessary questions and slowly work to ask more personal questions. Key questions, also referred to as the main question, tends to ask for the most valuable information. The practice of identifying the main questions gives researchers a sense of the core questions to ask in the interview. When the interview ends, a researcher may want to ask questions that are easier and give participants the opportunity to raise issues that are not addressed. This question gives participants the opportunity to enter information and reflect on it, but also suggests a conclusion. Other closing questions ask

participants to give suggestions, the types of questions help participants slowly move from the interview experience. They may ask for unexpected and valuable responses, but their main goal is to provide participants with reflective experience and conclusions for interviews. The overall organization of questions (beginning, transitional, key, and closing questions) can shape the interview protocol toward an inquiry-based conversation. (Castillo-Montoya, 2016, p. 822)

**Table 3.2** Interview Construct

Type of Question	Construct	Conceptual Definition	Component
<b>Introductory question</b>			
<b>Transition Questions</b>			
<b>Key Questions</b>	Principles of discovery learning (Pappas, 2014)	Learning does not equal absorbing what was said or read, but actively seeking for answers and solutions. Pappas, (2014)	-Problem Solving -Learner Management -Integrating -Connecting -Information Analysis -Failure & Feedback
	Steps of Discovery Learning (Badan Pengembangan Sumber Daya Manusia Pendidikan Dan Kebudayaan Dan Penjamin Mutu Pendidikan, 2013)		-Stimulation -Problem Statement -Data Collection -Data Processing -Verification -Generalization
<b>Closing question</b>			



### **3.3.3 Document Analysis**

For qualitative study research, the most essential use of documents is to verify and enhance data or evidence from other sources. Documents provide rich and thoughtful data that help the researcher to analyze Cresswell, (2012). In this research, document analysis was used as one of data collecting techniques that supplements data from interview and observation. Documents used in this qualitative study research are documents related to English subject class in the second grade at SMAN 1 Pakem. Including the teacher's lesson plan and student's textbook. These documents are analyzed in order to gather supporting data about teacher's teaching English about implementation of discovery learning model in English subject class.

### **3.4 Data Analysis**

In this research study, the data that was gathered from the observation, interview, and documents. A camera was used to take pictures and video when doing the observation and interview. The data obtained was in the forms of field notes, the result of interview transcripts. In this model three different types of analysis activity (data reduction, data display, and conclusion drawing / verification) and data collection activity from an interview process.

#### **3.4.1 Data Reduction**

Data, which is gathered from the observation, interview and documents, is huge and complex. Therefore data reduction is needed to make the data clear and easy to use. According to Miles & Huberman (1984) data reduction is the process of selecting, simplifying and categorizing the collected data.

In this research, the researcher gained the data through observation, interview and collected archived documents. The researcher read all the collected data and then started to select it based on the themes as formulated in analytical construct in the foregoing chapter. The initial stage of data reduction, the researcher transcribed the data from observation and interview. Due to the complexities of participant response, to make the data more manageable the researcher highlighted the important statement from subject with bolded and underlined words. It aimed to simplify the researcher to separate it into several themes. During this stage, the researcher elicited meanings and insights from the subject related to principles of discovery learning and steps of discovery learning.

In this phase, the result of interview was changed into verbatim form, observation result was turned into field notes, and document analysis result was arranged into script of document analysis. Then, to reduce the data of this research, the researcher focused on research' questions, which are about teachers' implementation of discovery learning model in teaching English classroom. Whereas, the data which was not related to it, was set apart.

### **3.4.2 Data Display**

Display means an organized, collection of compressed information that allows conclusion drawing. Looking at displays helps us to comprehend what is happening and to do something. There are various different forms of data display for different kinds of research. According to Miles & Huberman (1984) the displays used in this research included brief notes and narrative text. The

researcher directed that display data would help the readers to understand the data easier.

### **3.4.3 Conclusion Drawing**

Conclusion drawing is also known as verification. From the beginning of data collection, researchers begin to decide what things mean, as temporary conclusions, and take light of these conclusions, maintain openness and skepticism, but final conclusions may not appear until data collection is complete. There are two possibilities upon the temporary conclusion whether it will change if it is not supported by strong evidence or it will become a credible final conclusion if it is supported with valid and consistent evidence from data collection.

## **3.5 Trustworthiness**

Lincoln & Guba (1985) as cited in Cohen & Crabtree (2006) posit that trustworthiness of a research study is important to evaluating its worth. In this study data collection will use observation. The researcher observed the students in the English subject class. The observation was carried out indirectly by interviewing the English teacher about the teaching and learning English in this school, the conditions of students, the English material for grade 2, the students' outcome in learning English.

### **3.5.1 Credibility**

In a qualitative study, according to Lincoln & Guba (1985) as cited in Cohen & Crabtree (2006) credibility can be defined as the confidence in the 'truth' of the findings. In this research, one subject involved to be interviewed related to

the issue of this research. Furthermore, the researcher tested the data by triangulation, because the most important in qualitative study is its quality. The researcher recognized to ensure the data, qualifying check the data is needed for this research. Therefore, the researcher ensured the data by convergence all sources of the data.

### **3.5.2 Transferability**

Lincoln & Guba (1985) as cited in Cohen & Crabtree (2006) said that transferability show the findings have applicability in other contexts. In this case, the result of this finding can be applied for English teacher when using discovery learning model in teaching English. Besides, the reader can understand the topic clearly. Furthermore, the reader can be used the finding of the research to other or similar situations, phenomenon, or characteristic of the subject to extend research.

### **3.5.3 Dependability**

Dependability is important to trustworthiness due to it establishes the research study's findings as consistent and repeatable. Dependability showing that the findings are consistent and could be repeated according to (Lincoln & Guba, 1985) as cited in (Cohen & Crabtree, 2006). The aim of the researcher to verify that the findings of this research are consistent with the raw data that have been collected. Another way to establish the dependability is by discussing about the interpretation and presenting the research findings.

#### **3.5.4 Confirmability**

Confirmability is the qualitative researcher's balanced concern to objectivity to obtain the neutrality. According to Lincoln & Guba (1985) as cited in Cohen & Crabtree (2006) confirmability is a degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest. In this research, the researcher provided all data and consulted with lecturer supervisor as an expert to review, give comment, opinion, and suggestion regarding to the data analysis. The result of which was reviewed by the lecturer supervisor as an expert as well.