

## **CHAPTER II**

### **LITERATURE REVIEW**

This particular chapter explains about the literature review, relevant studies, theoretical framework and analytical construct of the research conducted.

#### **2.1 Literature Review**

This subchapter systematically elaborates theories related to discovery learning, types of discovery learning, principles of discovery learning, steps of discovery learning and discovery learning as a learning model to teach English.

##### **2.1.1 Discovery Learning**

Experts define discovery learning differently with the same principle that the learner should learn the content themselves as it is not given by the teacher. According to Bruner (1961) discovery learning is an inquiry-based constructivist learning theory that occurs in problem solving situations where students utilize their own past experiences and existing knowledge to discover facts and relationships and new truths to learn.

In accordance with Bibergall (1966) discovery learning is all goal-directed behavior in which students complete, or try to complete, the task of learning by using their own mental abilities to organize and utilize the contents of the assignment without the help of a teacher.

As stated by Pappas (2014) discovery learning can be determined as learning where the main contents of what must be learned are not given, but must be found independently by students, making students active participants in learning.

Based on the three experts' definitions mentioned earlier, discovery learning can be defined as a learning model that is used to learn by situations where the learners can get the experiences to learn with their own learning in which the content of the material is not given only by the teacher.

### **2.1.2 Types of Discovery learning**

There are three types of discovery learning (Bibergall, 1966).

1. Pure discovery: a technique that involves no direct assistance, other than encouragement, by a teacher.
2. Guided discovery: techniques that involve minimal to moderate assistance by a teacher.
3. Expository learning: directed learning that involves maximum assistance by a teacher and usually little or no real discovery by students.

### **2.1.3 Principles of Discovery Learning**

Pappas (2014) stated that according to the history, discovery learning was introduced by Jerome Bruner and it's a method of inquiry-based instruction. The students are encouraged to build the past experiences and knowledge, using their intuition, imagination and creativity, and looking for new information to discover the facts, correlations and new truths with this learning model. Learning actively means find out answers and solutions which is different with absorbing what is said or read.

Pappas (2014) said that the discovery learning model integrates the following 5 principles:

**Table 2.1** Principles of Discovery Learning (Pappas, 2014)

<b>Principles</b>	<b>Explanation</b>
Problem Solving	The teacher should guides and motivates the learners to seek for solutions by combining existing and newly acquired information and simplifying knowledge
Learner Management	The teacher allows the students to work either alone or with others, and learn at their own pace
Integrating Connecting	The teacher teaches the students how to combine prior knowledge with new, and encourage them to connect to the real world
Information Analysis	The teacher let the students to analyze and interpret the acquired information, rather than memorize the correct answer
Failure & Feedback	The teacher gives students feedback for succesful or unsuccessful attempts in learning

#### 2.1.4 Steps of Discovery Learning

In accordance to Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjamin Mutu Pendidikan (2013) in implementing the discovery learning model there are several steps that must be applied, such as:

**Table 2.2** Steps of Discovery Learning (Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjamin Mutu Pendidikan, 2013)

<b>Steps</b>	<b>Explanation</b>
Stimulation	In providing a stimulus to attract students' responses, the teacher can present an image.
Problem Statement	A step where the teacher presents a problem to students, for example by giving a question about the material being studied.
Data Collection	The process of collecting the data to identify problems presented by the teacher.
Data Processing	The process of processing the data to solve problems presented by the teacher.
Verification	Students do the proof to find a truth about the problem being solved.
Generalization	Drawing a conclusion by students with the teacher.

#### 2.1.5 Discovery Learning as Learning Model to Teach English

Learning model is defined as a systematic procedure in organizing learning experiences to achieve learning objectives (Mulyatiningsih, 2010). It is also

interpreted as an approach that is used in learning activities. In accordance with the Curriculum 2013, there are three types of learning models: project-based learning model, problem-based learning model, and discovery learning model (Supriano, 2016). The learning model is in accordance with the scientific approach so it is appropriate to be implemented in the learning process.

A teacher must be able to choose and design the right learning model for learners. The chosen learning model should be tailored to the theme and basic competencies that learners must possess. In addition, he or she should also consider the condition or condition of learners, learning materials, and learning resources that exist for the use of learning models can be applied effectively and can support the success of learners learn. In addition, a teacher must be able to manage the learning process is able to master basic teaching skills such as opening and closing lessons, explain, ask, and others. To support the principles, discovery learning model have some techniques in the implementation. According to Pappas (2014) learning sessions that use discovery learning models must be well designed, very experience and interactive.

To build curiosity and interest in students and guide students in ways of thinking, acting and reflecting on new ones. Teachers must use learning media such as stories, games, visual aids and other interesting techniques. In discovery learning the techniques used can be varied, but the goal is always the same, and that is the learners to reach the end result on their own. The students are more likely to remember concepts and newly acquired knowledge by exploring and

manipulating situations, struggling with questions and controversies, or by performing experiments (Pappas, 2014).

In accordance with the applicable curriculum, in implementing the discovery learning model can also be applied in all lessons including English language lessons. Discovery learning model in teaching and learning process does not present the whole material to the students, but only present a formulation of the problem that was prepared by the teacher. In the learning process with this discovery learning model the role of the teacher is not separated just like that, the teacher must still guide learners in finding a concept for learning outcomes not out of goals to be achieved. However, the guidance provided by teachers should be reduced so that learners the opportunity to become a scientist by finding knowledge, concepts or subject matter independently.

To find or get a new science students cannot only believe what they think is right. Therefore, they require a model that can make them believe that what they have found is something right. By using discovery learning model, they can prove their findings are true and meaningful knowledge for their life.

## **2.2 Review of Relevant Studies**

Studies on discovery learning has been carried out in several field of studies such as mathematics, science and music, among others. In mathematics, students learn mathematics more effective in discovery learning design (Yuliana, Tasari, & Wijayanti, 2017). In science and music, research has been done to discuss discovery learning and students' motivation compared to other design (Patandung, 2017; Kurniawati, 2016).

The previous studies focus on the effectiveness of the implementation of discovery learning model toward the students' motivation in other fields. However in English research, discovery learning research has not been done much, so far there are only a few. This research focused on the implementation of discovery learning model in English language classroom.

Studies on discovery learning in English improve the effectiveness of the use of discovery learning in teaching English. In relevant studies cited in thesis publications by some scholars, the research on discovery learning were emphasized in steps, instructions and strategies of discovery learning applied in reading and writing (Efrini, 2016; Sofeny, 2017; Rahmi & Ratmanida, 2014).

In the first study, discovery learning based on scientific method was applied with the activities of stimulation, identifying problem, collecting the data, analyzing the data, verifying the data, and generalizing (Efrini, 2016). In descriptive qualitative study, three English teachers at senior high school 2 Padang implemented discovery learning in English classroom. Data was gathered with video recording, observation sheet and interview guidelines. Result shows that creating stimulation (77,8%), identifying problem (66,6%), collecting the data (90%), analyzing the data (83,3%), verifying the data (88,9%) and generalizing or creating conclusion (36,1%) were the commonly used steps in implementing discovery learning in English classroom.

In second study, discovery learning had a bigger influence to the extroverted students rather than introverted students (Sofeny, 2017). In quantitative experimental study, eleventh graders of state senior high school sale in academic

year 2013/ 2014 as the population and 20 students as the samples. Data was gathered by using try out to measure validity & reliability, and the two ways ANOVA was conducted to test the hypotheses, two way analysis of variance with F-test at the 5% (0.05) level of significance. Result reveals that the use of discovery learning was effective to the extroverted students than the introverted students. In line with it, the finding indicates that the use of direct instruction was also effective to introverted students than the extroverted students.

In the third research, discovery learning strategy based on scientific approach improves the students' reading report text (Rahmi & Ratmanida, 2014). In qualitative experimental study, English teachers at SMAN 8 Padang implemented discovery learning in English classroom. Data was gathered with questionnaire and interview. The research used both qualitative and quantitative approach to draw the research and data collected, with the procedure were pre test and post test. Result shows that the use of discovery learning strategy could improve the students' reading report text at SMAN 8 Padang.

The three studies mentioned earlier were chosen as relevant studies to this research due to the facts that the three studies focuses are mainly on English learning that uses discovery learning models. In comparison to these three previous research, this descriptive study mainly focuses on the implementation of discovery learning model in teaching English. The study of this research was categorized into descriptive qualitative, so it is different from the previous research which use quantitative and action research. This research presents the discovery learning as the way to teach English language for senior high school

students. There are two main points of discovery learning that has presented in this research; principles of discovery learning and the steps of discovery learning. Technically, those activities are implemented while using discovery learning in teaching English at SMAN 1 Pakem Yogyakarta.

### **2.3 Theoretical Framework**

Pappas (2014) stated that according to the history, discovery learning was introduced by Jerome Bruner and it's a method of inquiry-based instruction. The students can encourage to build the past experiences and knowledge, using their intuition, imagination and creativity, and looking for new information to discover the facts, correlations and new truths with this learning model. Discovery learning can be defined as a learning model that used to learn by situations where the learner can get the experiences to learn with they own learning which is the content of the material is not given by the teacher.

Pappas (2014) said that the discovery learning model integrates the following 5 principles such as problem solving, learner management, integrating connecting, information analysis, and failure & feedback. In accordance to Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjamin Mutu Pendidikan (2013) in implementing the discovery learning model there are several steps that must be applied, such as stimulation, problem statement, data collection, data processing, verification, and generalization.

## **2.4 Analytical Construct**

In accordance with the applicable curriculum, the implementation of discovery learning model while teaching and learning process presents as a formulation of the problem that was prepared as stimulation of learning at the beginning of learning process by the teacher. Pappas (2014) said that the discovery learning model integrates the following 5 principles such as problem solving, learner management, integrating connecting, information analysis, and failure & feedback. In accordance to Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjamin Mutu Pendidikan (2013). In implementing the discovery learning model there are several steps that must be applied, such as stimulation, problem statement, data collection, data processing, verification, and generalization.

