

## **CHAPTER II**

### **LITERATURE REVIEW**

This chapter consists of the references and literature from the experts which are useful to give relevant knowledge in the field of the study in the next chapter. The researcher is going to describe some theories and review some relevant research findings related to the research. This chapter will describe in depth of the variables exist in this study, the previous study, and the type of discovery-inquiry

#### **2.1 Methods of Discovery-Inquiry**

Method of inquiry is a method that is able to lead the students to realize what has been obtained during the study. Inquiry puts the learner as an active subject of study (Mulyasa, 2003:234). In learning by discovery (inquiry), students are encouraged to learn mostly through their own active engagement with the concepts and principles of its own (Nurhadi & Senduk, 2003).

Learning by discovery (inquiry) is an important component in the constructivist approach that has had a long history of innovation or educational reform. Learning with the invention has several advantages. Learning by inquiry spur the desire of students to learn, to motivate them to continue some advantages. Learning by inquiry spur the desire of students to learn, to motivate them to continue their work until they find the answer. Students also learn to solve problems independently and have critical skills because they have to constantly analyze and deal with information. Roestiyah (2001:74). Based on these opinions, it can be concluded that the inquiry-based teaching is one component of the application of the approach to CTL (Contextual Teaching And Learning), which means finding and is

part of the learning activities based CTL (Contextual Teaching And Learning).

Acquired knowledge and skills students are expected not given the results of a set of facts, but the result of finding himself.

In spite of this method is centered on the activities of learners, but teachers still play an important role as a maker of design learning experiences. Teachers are obliged lead learners to perform activities. Sometimes teachers need to give explanations, ask questions, provide comments, and suggestions to the learner. Teachers shall provide ease of learning through the creation of a favorable climate, the media and using the facilities varied learning material. Inquiry is essentially a way of realizing what he had experienced. Because the inquiry requires learners to think. This method involves them in intellectual activities. This method requires the learners to process into a learning experience that is meaningful in real life. Thus, through this method of learners accustomed to earning, analytical, and critical.

## **2.2 The strategy of inquiry-discovery**

The steps in the inquiry process is awaken curiosity about something, presupposing an answer, and draw conclusions and make valid decisions to address issues that are supported by the evidence. Next is to use inference to analyze the new data (Mulyasa, 2005:235).

Strategy implementation inquiry is:

- a. Teacher gives explanations, instructions or questions on material that will be taught.
- b. Provide assignments to students to answer the question, the answer can be found in the learning process experienced by students.

- c. Teacher gives an explanation of the issues that may confuse learners.
- d. Recitation to embed the facts that have been studied previously.
- e. Students summarize in the form of a formula as a conclusion that can be accounted for (Mulyasa, 2005:236).

Method of inquiry by Roestiyah (2001:75) is a technique or method used to teach teachers in the classroom, where the teacher divides the task of researching a problem to the class. Students are divided into groups, and each group gets a specific task to be done, then they are studying, researching, or discuss its role in the group. After the results of their work in the group discussion, and then made a report in good order. Finally results are reported to the plenary session reports, and there was widespread discussion. Conclusion of the plenary session will be formulated as a continuation of the group's work. And the conclusion of the last follow-up if there is still to be implemented, it should be noted.

The teacher uses techniques that the students have a purpose when aroused by the task, and actively seek out and examine themselves solving the problem. Finding the source of their own, and they learn together in a group. It is expected that students are also able to express their opinions and to formulate conclusions later. They are also expected to argue, argue and defend their opinions. Inquiry contains the mental processes of a higher order, such as formulating a problem, planning experiments, conducting experiments, collecting and analyzing data, drawing conclusions. In the method of inquiry can be grown objective attitude, honest, desire to know, open, and so on. Finally able to reach a mutually agreeable conclusion, if the students do all of the above activities mean students are doing inquiry.

This technique has the advantage of inquiry: (a) to establish and develop the basic concepts to students, so that students can understand the basic concept ideas better. (B) Assist in the use of memory and transfer the new learning situation. (C) encourage students to think and work on his own initiative, to be honest, objective, and open. (D) To encourage students to think intuitively and formulate their own hypothesis. (E) Provides intrinsic satisfaction. (F) The situation of learning more exciting. (G) to develop individual talents or skills. (H) Giving students the freedom to learn on their own. (I) Refrain from traditional learning. (J) to give enough time to the students so that they can assimilate and accommodate information.

Method of inquiry by Suryosubroto (2002:192) is the discovery that the expansion process is used more depth. This means that the process inquiry containing the mental processes of a higher order, such as formulating problems, designing experiments, conduct experiments, collect and analyze data, draw conclusions, and so on. Find (inquiry) is the core part of the CTL. Acquired knowledge and skills students are expected not only to remember the result, but of finding its own (experience). Cycle of inquiry is observation (observation) through the initial steps to formulate the problem, then watched or observed by reading, observing, and the like. There is also asking (questioning), filed conjecture (hypothesis), collecting data (data gathering) from the observations that have been made and inference (conclusion) through communication or presentation of the work to classmates, teachers, or other audience. For example, students look for patterns of numbers 1, 5, 2, 4, 3, 3, 4 ... or student conduct inquiry cycle through data collection to preparing the statistical tables.

Asking a CTL-based learning strategies. Asked can be used for information, check student understanding, generate student responses, confirming what was already known to the student, to refresh students' knowledge, and directing. The process resulted in the expansion of science asks. There is no knowledge that is given, unless the revelation to prophets and apostles.

Almost in all learning activities, ask implemented either each students, between students and teachers, between teachers and students, and so on. Its application in the classroom when students discuss, work groups, and observe. Such activities will foster the urge to ask. It was more reflected in the learning society gained from working with other people. Teachers are advised to implement the learning within study groups. Students are divided into heterogeneous groups. The results obtained from the study "sharing" between friends. Clever taught weak or that knows inform the uninitiated or the like. All students in the class are members of learning community. Realization through the establishment of the group, bringing experts into the classroom, as well as working with the community.

The next component is the modeling CTL. That is, there is a model that can be replicated. For example, how to paint and how to operate the computer corner. CTL in learning, the model can be derived from the student or brought in from outside. No less important component of the CTL is a reflection (thinking) about what is newly learned or what has been done in the past. At the end of the study, a comparison can be made between the past and the present, starting with students' end with confidence. For example, when the class ends, students mused, "Well, the way I

am looking for a pattern for this one. Properly, I sort the data first as I had just learned, and so on".

### **2.3 Discovery-inquiry methods**

Methods of Discovery-Inquiry is the way of presenting a lot of lessons that engage students in the mental processes in order discovery that gives freedom to the students to form ideas and information according to their own understanding (Anonymous, nd). In addition, this method basing that education is a process - not a series of facts that provide benefits for learners actively involved in preparing the information (understanding) is greater than the memory so that students will have a level of confidence in solving problems faced at the time and moments later (Anonymous, undated b).

Discovery-Inquiry method has been developed to teach students to understand the process of researching and explaining events guided, so that students can be taught scientifically solving procedures. Thus during the learning process students will: (1) ask if they found the problem; (2) be aware of and learn to analyze strategic thinking; (3) new thinking strategies can be taught directly; (4) could enrich the mind and help students learn about the nature of knowledge while (Tiptoadi, 1995 in Mbulu, 2001).

One method of Discovery-Inquiry is the Modified Discovery-Inquiry. The implementation of this method can be described as follows:

1. Teachers give problems and provide materials / tools required,
2. Then students are invited to solve it through observation,
3. Exploration for answers.

4. Solving problems at the initiative and made their own way, can be groups or individuals.
5. Teachers act as a driving force, a resource and charged with providing the necessary assistance to ensure the smooth process of student learning.
6. During the learning process of students to solve problems, help / guidance teacher is in the form of questions (Mbulu, 2001).

In addition to teacher questions can also directs the steps set the stage for an invention (discovery). In other words, the teacher actively stimulate learners to think actively find, so they will be able to think analytically, synthesis, comparative (Moston, 1972 in Anonymous, 2005a and 2005b).

#### **2.4 Modified Linkage Discovery-Inquiry with Improved Student Results.**

In the course of learning, motivation can be regarded as a driving force in a student's self to induce learning activities and ensure continuity of learning activities, so that the desired destination by learning subjects that can be achieved. Various kinds of motivation:

a. Intrinsic Motivation.

Intrinsic motivation is the drive is in the proper functioning of a person who does not need to be stimulated from the outside, because the individuals had no urge to do something (Sardiman, 1988). In terms of learning objectives, intrinsic motivation is the wish to achieve the objectives contained in the learning activity itself.

b. Extrinsic Motivation.

Extrinsic motivation is the active encouragement and function due to external stimuli. Extrinsic motivation in learning activities remains important because the students most likely situation is dynamic and may also be other components in the learning process is no less interesting for the students, so that the necessary intrinsic motivation. Prayitno (1989) stated that good betapun children which include potential intellectual ability or material will be taught and complete learning tool, but if students are not motivated to learn, then learning will not take place optimally. Someone making an effort because of the motivation. Good motivation to learn to show good results. Pratikum kontesktual learning is one way of generating motivation because students are given the freedom to construct ideas and findings during learning activities, so that students conduct themselves with a carefree, fun and highly motivating (Amin, 2004; Anonymous, 2004).

Motivation is very closely related to how a person perform activities or work. Thus, the more precise and obtained student motivation to learn, the learning activities undertaken by students will be higher so that learning becomes more and more successful students. With the diligent effort and motivation based on the presence of a high, then a person who learns it will be able to give birth to good performance. Student activity is not enough to just listen and take notes. Paul B. Diedrich in Sardiman (1988) made a list of 177 kinds of student activities, among others, can be classified as follows:

- a. Visual activities, which include: reading, watching ganmbar, demonstrations, experiments, work of others.

- b. Oral activities, such as: states, formulate, ask, give advice, opinions, conduct interviews, discussions, interruptions.
- c. Listening activities, for example: listening, outlining, conversation, discussion, music, speech.
- d. Writing activities, for example: writing stories, essays, reports, questionnaires, copying.
- e. Drawing activities, such as: drawing, making graphs, maps, diagrams.
- f. Motor activities, which include: conducting experiments, making the construction, repair, playing, gardening, farming.
- g. Mental activities, for example: perceive, remember, solve problems, analyze, see relationships, make decisions.
- h. Emotional activities, for example: an interest, get bored, happy, excited, passionate, courageous, calm, nervous.

From the above description shows that the activity of students in the school are complex and manifold. If the kinds of activities that exist in the school, then the student will not feel bored in participating in learning both in the classroom and in the laboratory. Creativity is needed in preparing teachers of students who are very varied activities it. One way is to be combined with a Modified Method of Discovery-Inquiry seems there is a correlation in increased motivation, which can influence the existence of student learning outcomes. Learning outcomes are the result of the result of the interaction acts and acts of teaching and learning to achieve the goal of learning is to obtain behavioral changes that include cognitive, affective, and psychomotor (Dimyati and Mujiono, 1994; Bloom in Subiyanto, 1988).