

CHAPTER I

INTRODUCTION

1.1 Background of Study

Gagne in Sridevi (2008) state that science is what the scientist does. It is a process by which we increase and refine our understanding and of the universe through continuous observation, experiment, application and verification. Sciences is related, how to find about natural phenomenon systematically, so that science is not just mastery knowledge in the form of collection of facts, concepts or principle but also a process of discovery (*Depdiknas* in Yuyun,2010:1). Just like the branches of a tree, a branch of science is made up of many smaller branches. Physics is smaller branches of science.

In curriculum of SMP/MTs (*Depdiknas* in Asshagab,2012:3) the aim of physics education is to make students able to use scientific methode based on scientific attitude to solve problems faced so that they will more aware of the Majesty of God Almighty. All those skills can be acquired through a process of inquiry learning (discovery), lab activities or experiments so that students get hands-on experience and discover the process themselves.

Based on a preliminary study in one junior high school in the Tebing Tinggi city on January 15, 2013 found the fact that the process of learning that takes place in class in general, is still centered on the teacher as an information center. The teacher still uses conventional learning in teaching the students. The teacher usually uses direct instruction model to teach the students. Even in the process of learning physics, teachers usually try to transfer its knowledge to the students, so it tends to make passive students, because students just do activities sitting, silent, listen, noted in accepting the knowledge that is transferred through the processing of teachers without prior knowledge already possessed by students. Also from preliminary studies by the author, it was found that in one class in one of the junior high school at Tebing Tinggi, only 50% who liked physics, because physics is an interesting and challenging lesson. And the rest of students don't like physics. Usually topics in physics lesson not relate by the teacher with things in

daily life. So they still confused about their aim to learn about physics, they just know how to solve problems without application in their daily life.

One indicator of the quality and success of the learning process is the learning outcomes achieved by the students. This is in accordance with that expressed by Sudjana (2001:45) states that "every process of learning success is measured by how big the learning outcomes achieved by students, as well as measured in terms of the process." But in a preliminary study by the authors also found that, students also less involved in the learning process, so it's easy to forget the concepts that have been given, and make the lack of understanding of concepts and skills of students in solving problems. It can be seen from the average value of learning achievement in physics last semester of school year 2012/2013 was only 64.4. This value is below the minimum completeness criteria (MCC) established by the curriculum that is 75.0. Just 39% of students who get value above the minimum value of mastery criteria, the rest 61% get value below the minimum value of mastery criteria. In addition, the physics teacher is also not usual in using visual aids and demonstrations in physics, causing students are not usual to doing practical activities. This is one of the causes of low student learning outcomes.

To improve student learning outcomes, teachers can perform a variety of ways, for example by using a model of effective teaching and learning in accordance with the objectives set in the curriculum. Suparno (in Asshagab, 2012:5) state that in the last decade constructivist philosophy has influenced and improved learning physics in particular and science in general. Constructivism is not a new concept. It is learning or meaning making theory. It suggests that individuals create their own understanding, based upon the interaction of what they already know and believe and the phenomena or ideas which they come into contact (Sridevi, 2008:9). A model of teaching is a plan or pattern that can be used to shape curriculums (long term courses of studies), to design instructional materials and to guide instruction in the classroom and other settings (Joyce, 2003). One model of learning is based on constructivist views of learning models

Children's Learning in Science (CLIS) developed by the CLIS in the UK, led by Driver (Tytler, 2002:2).

The aim of the Children's Learning in Science was to discover how to use a constructivist approach to teach the selected topics, and translate this into materials which could be used by other teachers. Based on the findings Driver in Adey (Matitamole, 2012:3), that if the activity increases, student learning outcomes will also increase. Therefore, one way to improve student learning outcomes is to increase activities in learning. In relation to this, the application of CLIS learning model developed by Driver is expected to be an alternative to classroom teaching and improve student learning outcomes.

Based on the background as it has been presented, the author is interested in doing research entitled **“The Effect of Children Learning in Science (CLIS) Model on Students' Learning Outcomes in Thermal Expansion Topic at VII Grade in SMP N 1 Tebing Tinggi.”**

1.2 Problem Identification

Based on the background above, problems that can be identified are as follows :

- 1) Student's physics learning outcomes are still relatively low
- 2) Students are less actively in the physics learning activities
- 3) Lack of interaction among students in physics learning activities.
- 4) Lack of media learning utilization.
- 5) Learning model still not variety in physics learning activities.

1.3 Problem Limitation

Many problems that have to be resolved as described in the problem identification above. But given the limitations by the author, to provide a clear scope of the discussion, the study is limited to:

- 1) Student's physics learning outcomes are still relatively low
- 2) Students are less actively in the physics learning activities.

1.4 Problem Formulation

By considering the background and limitation of problems in the study then the formulation of the problem is:
is there any effect of using CLIS learning model in learning outcomes of student grade VII SMP N 1 Tebing Tinggi in Physics lesson of Thermal Expansion topic?

1.5 Research Objective

Based on the research question above, the research objective is:
To know the effect of using CLIS learning model in learning outcomes of student grade VII SMP N 1 Tebing Tinggi in Physics lesson of Thermal Expansion topic.

1.6 Benefits of Study

The significances of study that expected are:

- For School : Can give a good contribution in order to improve the learning process and improve the quality of schools by increasing student achievement and teacher professionalism.
- For teacher : As a consideration in selecting learning model in learning physics.
- For students : Students are more motivated to learn physics, so that the educational goals can be achieved.