

CHAPTER I

INTRODUCTION

1.1 Research Background

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual, religious strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation, and state (Undang-Undang No.20 tahun 2003). Prihatin and Eka (2008) stated that the essence of education universally is to instill intelligence, moral, and spiritual values in students in accordance with mental and physical development.

Learning is a process of interaction with various situations around individual students. Learning activities are carried out by teachers and students. Teachers have the responsibility and right to teach lessons to students. Learning is closely related to the subject matter. The study material contains knowledge, moral values, art, religious norms, attitudes, and skills. The relationship between teachers, students, and teaching materials is dynamic and complex. To succeed in learning activities, the teacher must develop several components: objectives, materials, strategies, and learning evaluation. Each component is interrelated and influences each other (Rusman, 2012).

The National Education System Law provides direction that the goal of education is to realize the process of developing students who are not only intellectual but also have character and expands its noble values in line with the development of the times (Lestari and Projosantoso, 2016). KEMENDIKBUD Regulation No. 68 of 2013 concerning the Basic Framework and Structure of the SMP/MTs Curriculum, the 2013 Curriculum was developed based on the previous curriculum with improvements to several thought patterns. One of them is a pattern of passive learning becoming active-seeking.

The Program for International Student Assessment (PISA) 2018 results show that Indonesian students' reading, science, and mathematics abilities still need

improvement. This is evident from the average score achieved by Indonesian students, which is far below the average score set by the Organization for Economic Co-operation and Development (OECD). Indonesian students' reading ability earned an average score of 371, while the average OECD score was 487. The average score achieved in mathematics was 379, while the average OECD score was 487. Furthermore, the average score for science was 389, while the OECD average score was 489 (OECD, 2018). We can be seen from the average national exam results achieved by students in science subjects below the set standard of 55.

Science subjects are among the most crucial topics in 2013 curriculum. Based on the Regulation of the Minister of National Education (Depdiknas) Number 22 of 2006, the goal of learning science is to develop knowledge and understanding of science concepts that are useful and applicable in everyday life. However, the curriculum changes and regulations that have been set have not been able to solve various problems in teaching, especially in the learning process in schools. IPA is essentially the science of finding out and understanding the universe in a systematic manner as outlined in the form of facts, concepts, principles, and laws that have been verified through scientific methods such as observation and experimentation and require a scientific (Asih and Eka, 2015).

The Inquiry Model is a solid learning model that emphasizes the context of problems. Thus, this model is also very suitable for developing high-order thinking skills. The Inquiry Model can highlight students' independence from starting to formulate problems to evaluating research processes/procedures that have been carried out. However, this model still provides flexibility for the teacher to direct the research process that will take place by prioritizing the phenomena that have been selected and considered by the teacher concerned. Moreover, it will make student-centred learning. Students will be more active and more flexible in completing their curiosity in learning science, especially in work, energy, and simple machines.

In addition, in the 21st century, students must have high intellectual abilities, be able to analyze problems correctly and have several skills, including higher-order thinking skills. By having high order thinking skills, students are expected to be able to compete in the future and also solve problems that occur in everyday life.

High order thinking skills (HOTS) are high-order thinking at the top of Bloom's cognitive taxonomy. The teaching goals behind cognitive taxonomy are to equip students to transfer knowledge and believe in ways to apply the knowledge and skills they develop while learning in new contexts. In this case, what is meant by "new" is the application of concepts that students have not thought of before. Still, the idea has been issued, which means it is not necessarily universal; new thinking, so high, means the ability and self to link learning with other things that have never been taught. High-order thinking includes demonstrating an understanding of information and reasoning, not just recalling it (Fanani, 2018).

Based on the initial observation data of researchers at SMPN 27 Medan in the form of interviews with science teachers, student learning activities in science subjects are still low, which can lead to expected learning outcomes; many class VIII students still do not fulfil the KKM, which is 75. The data shows that students' science learning outcomes still need to be improved.

Students in SMPN 27 Medan still need to understand the importance of learning, which can be seen from students' enthusiasm for learning. When the teacher explains the lesson, the students are less interested because the knowledge is less varied, whereas applied teaching is still teacher-centred. Students' lack of interest can be seen during the teaching and learning. Students are often noisy, not focused when the teacher explains learning, and need to be more active in doing the exercises given. When asked a question about the lesson, students needed help to answer it correctly. Students need to understand the material discussed, and most students memorize more without understanding the subject matter.

Based on the background description above, the researcher is interested in researching "The Effect of Inquiry Training Learning Model on Work, Energy, and Simple Machine Topics in HOTS Literacy Grade VIII at SMPN 27 Medan."

1.2 Problem Identification

Based on the background of the problems above, the authors identify the research problems as follows:

1. High order thinking skill literacy student of grade VIII is low
2. The observation revealed that students' scores were below the minimum

competency criteria (KKM) due to the use of expository model, so teacher-centred learning was used.

1.3 Scope of Problem

The scope of this research is the high-order thinking skills of students in the science subject of work, energy, and simple machines at grade VIII of SMPN 27 Medan by using the inquiry training model.

1.4 Limitation of Problem

Based on problem identification, the researcher limits the problem as follows:

1. The research was conducted in grade VIII SMPN 27 Medan.
2. The inquiry training model used the experiment class and the control class used the expository model.
3. The ability that was measured in this study was the HOTS literacy of students.

1.5 Formulation of the Problem

Based on the identification of the problem above, the formulation of the problem in this study is as follows:

1. Is there any influence between the application of the inquiry training learning model and the expository model in the HOTS literacy of students on work, energy, and simple machine topics at grade VIII SMPN 27 Medan?
2. Which HOTS literacy aspect is most developed by applying the inquiry training model at grade VIII SMPN 27 Medan?

1.6 Research Purpose

In general, the purpose of this research is to determine the effect of the inquiry training model on students' HOTS literacy. The specific purpose of this research are:

1. To determine whether there is an influence between the application of the

inquiry training learning model and the expository model on the HOTS literacy of students on work, energy, and simple machine topics in class VIII SMPN 27 Medan.

2. To find out which HOTS literacy aspects are most developed through applying the inquiry training model to class VIII students of SMPN 27 Medan.

1.7 Research Benefit

The expected benefits of this research are:

1. Students should be encouraged to improve science learning outcomes, especially on work, energy, and simple machine topics, and gain more meaningful knowledge.
2. For teachers, it can be used as an alternative new learning model to increase the effectiveness of learning science and motivate them to be more critical, creative, and innovative in developing science learning.
3. For the school, it can be used as a reference or material for improving science learning and supporting science learning, especially on work, energy, and simple machine topics, by providing supporting facilities.
4. For future researchers, this can be an input or reference for further research.
5. For the development of science, it can develop science lessons, especially in inquiry learning models for high-order thinking on work, energy, and simple machine topics.