CHAPTER I
INTRODUCTION

1.1 Problem Background

Education is one of the important elements in advancing a nation and country. Education is a basic requirement and needed by the children of the Indonesian. This is certainly by the purpose of the country, which is to educate the life of the nation as stated in the opening of the 1945 Constitution. The progress of a nation depends on the quality of its education. Kristiyanto (2020) said the quality of education can be known and measured from student learning outcomes that are manifested in the values obtained by students. The value of learning outcomes is one indicator that can affect the quality of human resources. Improving the quality of education in Indonesia is trying to be pursued by improving the quality of education, one of which is by updating the curriculum.

Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 103 of 2014 on Learning in Primary and Secondary Education mentions that the implementation of curriculum 2013 is recommended using scientific approaches with learning models such as inquiry-based learning, discovery learning, project-based learning, and problem-based learning (Kemendikbud, 2014). This shows that the educational process carried out at every level must be based on liveliness and trigger student curiosity, raise the problem of constructing knowledge, or project-based to build student knowledge. The learning process is certainly carried out to achieve national learning goals. The ability of learning goals is determined by the components that play a role in learning, namely teachers, students, and the strategies, methods, and learning models used.

Natural sciences is one of the very important education in this era. In this era, Natural Science Education is oriented towards the development of strategies and solutions to solve problems in everyday life and the formation of student character. In the context of natural science subject, the students should be led into science nature as the way to discover knowledge systematically to master, such as: facts, concepts, principles, discovery process and scientific attitude. To reach it, the students have to be involved actively during instruction process. They have

to be involved in certain activities, such as: observing, collecting information, identifying, making hypothesis, testing hypothesis and drawing conclusion. By doing those activities, the students can have critical thinking in understanding science concept. In the end, high learning outcome can be achieved (Sarya *et all*., 2019).

Based on the results of initial observations and interviews with one of the Natural Science teachers at SMP Negeri 14 Medan, it is known that the results of the evaluation tests of some students were still below the pass minimum completeness criteria, which was under the grade of 70. Researchers obtained report card data where from 30 students, there were 18 students who had scores below the minimum completeness criteria. Besides that there is one of the problems experienced by learners namely, students are less actively involved in the learning process of Natural Science. Students gain more knowledge delivered by teachers. This can make some students difficult to develop their abilities and cause students to lack understanding of the material delivered during the learning process of Natural Science.

In addition, the responsibility of students in doing the tasks of the teacher is still low. Students are also less interested in the lessons of Natural Science. This can be seen from the active participation of students in learning. What's more, the learning applied in the school uses conventional learning models that the learning done by teachers is still *teacher-centered*. This certainly has an impact on the learning outcomes and motivation of students.

Seeing the influence of passivity, then a teacher must be able to choose the right learning model by the learning material so that the planned learning goals can run optimally. The learning model has advantages and disadvantages, therefore teachers must be able to choose the model to be used in accordance with the material taught. Choose an attractive learning model, which can create an atmosphere of student activity and become student-centered. One learning model that can activate students and become student-centered learning in the learning process is the Problem Based Learning (PBL) model. This is supported by Sudini (2018) which says that the PBL learning model can be used for science learning

on human respiratory system material to make students can participate more in the learning process so that it has a positive impact on learning outcomes.

Glazer (2001) explained that the PBL learning model is one of the models of solving a problem and finding the right solution to the problem. Problem-based learning is an ideal learning approach that teachers can use to help students determine solutions to non-routine problems (Strobel & van Barneveld, 2009). Sani (2015) also added that the PBL learning model has the characteristics centered on problem solving that students will solve in training them to think critically. PBL has the enigmatic nature of problem drives students' curiosity and learning. In solving problems, students work in groups to discuss and examine the problem; engender learning goals which will be subjected for further investigations; use learning goals to guide them in self-directed learning and in gathering data; and return to their group and analyze and synthesize the gathered information to come up with the best solution (Funa, 2021).

The use of the PBL learning model invites students to be active in learning to contribute to the improvement of students' learning outcomes. A model can be seen from the interrelationship between the learning model applied with the subject matter. The essence of the Problem Based learning model is to present problems that are authentic and have meaning to students who support students to conduct investigations (Arends, 2012). The essence of the PBL model can show relevance to respiratory system material in humans related to authentic problems around or the daily environment of learners. PBL is student- centered learning (and curricular) approach that empowers students to conduct research, integrate theory and practice, and apply knowledge and skills to develop feasible solution to the specified problems (Savery, 2006).

This research model has been used by many other researchers, especially in natural science subjects and has shown good results, including research by (1) Dwi wahyuni, Suciati sudarisman, Sugiyarto (2014) with the title "The effectiveness implementation model of Problem Based Learning integrated with predict-observe-explain towards students achievement overviewed from students creativities and students inference abilities" obtained results that the PBL model has influence on students' cognitive learning achievement but if interacted with

inference and creativity skills have no influence on learning achievement, this indicates that the syntax of the learning model is the thing that has the most direct impact on learning. (2) Johanes F.Napitupulu, Mariati P.Simanjuntak and johan sinurat (2019) with the title "The Effect of Problem Based Learning Model on Students Learning Results and Students problem solving skills" it was found that there was a significant influence after students were taught with the PBL model both on learning outcomes and on problem solving skills (3) Lamria Tambunan, Rusdi and Mieke Miarsyah with the title "Effectiveness of Problem Based Learning Models by using E-learning and learning motivation toward students learning outcomes on subject circulation systems" obtained the result that the PBL Model integrated with e learning has a significant influence on learning outcomes this indicates that a learning model with a good support system can also have a good impact on learning outcomes.

The difference between the research that will be carried out and the previous research is in the subject matter, location, time and population of the study. Specifically, what needs to be added and improved is: (1) the researcher's ability to make students more active in learning activities. (2) Researchers are expected to be able to maximize time according to the learning design and use support systems in the learning process such as interesting media. (3) Researchers are expected to be able to maximize their function as mediators and facilitators to create a comfortable classroom atmosphere while still maximizing the implementation of the existing syntax. (4) In the use of the PBL model, researchers are expected to provide clear guidance to students regarding the application of the PBL model and be able to get actual problems or real problems related to daily life

Based on the background that has been outlined above, the researchers conducted research with the title "**The Effect of *Problem Based Learning* on Learning Outcomes on Human Skeletal System materials in grade VIII SMP N 14".**

1.2 Identify problems

Based on the background above, the identification of the problem is as follows:

1) Students are less actively involved in the Natural Science learning process.
2) Students learning outcomes on Natural Science subjects are low.
3) The learning used is still teacher-centered.

1.3 Problem Limitations

Following the background, identification of problems, and limitations of available capabilities, materials, and time, the limitations of the problems that researchers do are as follows:

1) This research was conducted on students of class VIII semester I SMP Negeri 14 Medan Year of Study 2022/2023.
2) The material used is the human skeletal system.
3) The study only measured students' learning outcomes

1.4 Problem Formulation

Based on the limitations of the above problems, the formula for the problems in this study is as follows:

1) Is there an effect on the use of problem-based learning models on learning outcomes on human skeletal system materials in class VIII at SMPN 14 Medan ?

1.5 Research objectives

The purpose of the research is as follows:

1) To find out if there is an effect on the use of problem-based learning models on learning outcomes on human skeletal system materials in class VIII at SMPN 14 Medan.

1.6 Benefits of Research

The expected benefits of this study are:

1) For students, gain new learning experiences and to improve learning outcomes for the better.

2) For teachers, as a consideration to use the PBL Model in classroom learning.
3) As reference material for further researchers who want to research similar fields of study.

1.7 Operational Definition

An operational definition is given to avoid the occurrence of different perceptions of existing terms, namely:

1) Problem Based Learning model is a learning model that stimulates students to analyze problems, estimate answers, search for data, analyze data and conclude answers to problems.
2) Learning outcomes are efforts to measure the achievement of learning activity objectives that reflect changes in behavior, proficiency, and student status in studying learning materials at a certain period

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