

CHAPTER I INTRODUCTION

1.1. Background

Education has an important role in realizing a peaceful, faithful, noble, loving country, legal awareness and mastering of technology, especially in preparing students to be subjects who are very instrumental in building this nation. The provision of quality education will produce quality human resources and have competitiveness especially in the 4.0 revolution era (Sihaloho et al, 2018). Improvement of human resources can be achieved by taking into account the objectives of education itself as well as the objectives of national education in Law No.20 of 2003, namely national education to develop capabilities and shape the character and civilization of a dignified nation to develop the life of the nation, aiming at developing potential students to be human beings who believe and fear God Almighty, noble, healthy, knowledgeable, competent, creative, independent and become citizens of a democratic and responsible. Achieving the goal of education, in general, can be done by inovating all aspects that play a role in the world of education including in the world of national education both in terms of education and teaching staff so that national education standards increase (Kusnandi, 2017).

Education Standard process is national education standards relating to the implementation of learning in an educational unit to achieve graduate competency standards. The educational process standard referred to applies to any formal educational institution at any particular level of education wherever that educational institution is located nationally. Thus, all schools should carry out the learning process as formulated in this education process. Education must be developed continuously over time. Through education, it is expected that the Indonesian people can improve the quality of Indonesian society. Improving education standards can be done through every school institution in Indonesia with learning process activities that can achieve the objectives of the education. Therefore, the learning process must be done with a fun and enjoyable learning

arrangement that can increase the potential of students in the classroom (Kusnandi, 2017).

The success of the learning process depends on the ability of teachers to manage to learn. What is the big responsibility of a teacher is to create a classroom with teaching and learning processes that motivate students to learn well (Faruqi, 2018). If the teacher is less able to manage the class well then learning will become vacuum and less effective. As a result, students are less able to understand and apply the concepts learned in the classroom and solve the problems they face in everyday life critically including physics lessons. Considering the importance of physics in daily life as well as in various sciences, we need to improve the quality of physics learning in schools so that students can understand more in solving problems encountered in daily life (Hartini., et al, 2018).

Improved learning of physics itself because physics is the study of matter or substances through physical properties, composition, change, and the energy it produces. Physics as one branch of science which consists of several basic concepts about various phenomena that occur in everyday life but for various reasons many students think that physics lessons are still considered as difficult subjects to learn. Learned and understood. This statement can be known from various previous research sources, for example in a research with title Why Physics Dificult by Ornek (2018) explains that there are several factors that said that physics is difficult because they have to contend with different representations such as experiments, formulas and calculations, graphs, and conceptual explanations at the same time. This statement about the difficult of students in learning in class suport by Simbolon & sahyar (2015) This fact often leads to the assumption by the students that physics is a difficult subject to understand and ultimately has implications to lower the student physics interest, therefore a physics teacher has the task of providing learning tools and creating interactive, inspirational, , challenging, and able to motivate the students to participate actively, and providing sufficient space for initiative, creativity, and independence according to the talents, interests, and physical and psychological

development of learners. Researcher have also made observations to school and found some of the difficulties students have in understanding physics concepts at Senior High School 7 Medan.

Based on the results of the researcher's interviews with one of the physics teachers at Medan 7 Senior High School, In situation COVID-2019 the process learning do by asinkronus where the learning do chat and information given (Sadikin, 2020) the teacher physics give learning matter by group chat Whatsapp and share power point. According to the interest of students about learning process do by teacher, researcher find that only 10% students interest the physics in 30 students in class. When the students want to do the experiment process still often use the usual classrooms with tools that are brought from the laboratory of physics but in the implementation of experiment, the teachers can be categorized rarely in using practicum in the learning process. Implementation of experiment in use class of school rarely because the laboratory of physics is used for teaching and learning of other class. The laboratory tools in the school can be categorized as uncomplete, it can be seen from the number of tools that are not available even though this has been reported to the school but there has been no follow up on that matter. In addition, in 2020 global get virus attack COVID-19 make the the laerning have problem in learning process from the offline learning to online learning and efective develop blanded learning to make students interest and understanding about material and learning process (Ramadan, 2020)

The learning process expressed by one of teachers is still predominantly lecturing or conventional learning with give material and question by group Whatsapp. Based the interest and learning outcome students As usual that conventional learning can continuously make learning less effective because of the lack of variety and students tend to feel bored with conventional learning. The not efective the convensional learning i get from the angket from the 30 students 24 students like the learning proces with experiment, 3 students want only reading book and 3 students want conventional learning proces. It mean needed model to make students do experiment in learning process In the current era and educational process will not be separated from technology so students have never

used computer-based learning media in the learning process and think the media can students use in home.

Based on these observations and interviews, it is very important needed a learning model that can improve student activities for scientific work and the effective in the learning process. Discovery learning model is an alternative selection of learning models that can be applied by researchers assisted by multimedia like simulation *phet* and Rumah belajar in the learning implementation process. Discovery learning model engages students in answering teacher questions. Students conduct investigations, while the teacher want make students in the right direction. According sirait (2017) Discovery learning is learning proces give students oportunities to find the information with teacher or without teacher. By giving students the breadth in discovering the concepts of learning it will make it longer to remember them. This is very appropriate because students are not only directed to remember and understand various data, facts or concepts but how the data, facts, and concepts can be searched for truth. If students can find the truth themselves, the concept of physics material can be easily understood. Discovery learning is a learning model designed to teach concepts and relationships between concepts with the phenomena in daily life (Putra et al , 2016). According to simulation *phet* from that sttudents will can finish the problem solving in daily life based the simulation we use. In the other hand, from the simulation sudents will be understanding concept (Sari, 2016). This statement meaning *Phet* simulation and virtual lab can make students understanding about mattter and problem solving the problem in daily life and make students more understand about the metter

The use discovery model before research by Sari (2016) with Pengaruh model pembelajaran discovery learning berbantuan aplikasi PhET terhadap hasil belajar siswa show that the effect of discovery learning increase students From the hypothesis test result by using t test gained there is significant effect of implementing of discovery learning through PhET media on student learning outcome at static fluid topic in X grade second semester student SMA Negeri 5 Binjai Academic Year 2014/2015. Rahman (2017) with title using discovery

learning to encourage critical thinking's result and discussion, it can be concluded that discovery learning model can encourage students' creative thinking ability in learning and teaching strategy subject. Sumianingrum (2017) with the title effectiveness of discovery learning methods assisted by E-learning in SMAN 1 Jepara have research the discovery learning model with Edmodo, analyze the different of learning outcomes of students with discovery learning assisted by E-learning show that if students there are differences in learning outcomes of students made to female and the man. Nurdin Muhamad with the title is the effect discovery learning to increase representasi mathematics and trust students. The result of the experiment there are discovery learning increase students learning outcome increase because confidence of students increase too. Average of value students 30,76 average of students increase 67,50 in siklus II increase 79,50 and in siklus III increase too being 86,33 in the posttest reduce 4,06 being 82,27. In the webinar of Yuszahra (2020) with title discovery learning models with E-Learning media in physics learning process said the discovery learning process in pandemic Covid-19 is effective in learning process. Sumendra (2020) ever doing the online discovery learning model to implement the model to students learning outcomes of students where there accommodation an increase in the level of satisfaction of students in learning with percentage of competence in first cycle is 62,96 % and in the second cycle is 81,48 %. The before research in the above we can see there are many implementation of discovery learning model with direct learning and online learning my researcher have different with my references there are i implementation online discovery model i use multimedia with *phet* simulation and rumah belajar and i used the fluids statics material.

Based on the description above and the results of some previous research, the researcher is interested in conducting research in physics learning in SMAN 7 Medan to make students can better understand the concept of fluids statics material to get good learning outcomes with entitled "**The Effect of Online Discovery Learning Model Assisted by Multimedia to Student Learning Outcomes on Static Fluids Material in Grade XI Semester 1 MAN 7 Medan A.Y 2020/2021**".

1.2. Identification of Problems

Based on the background of the problem above, several problems that can be identified include:

1. From 30 totally students 24 students want the process learning do by experiment to get concept of physics.
2. In 2020 because COVID-19 learning proces do with online learning needed multimedia to make students with experiment.
3. The learning outcome of student small than Minimum Completeness Criteria in Senior High School 7 Medan.
4. The learning model used is less varied and has not been able to attract the attention of students to be active in learning.
5. Lack of availability of practical tools so that effective learning media is needed to visualize the material being taught

1.3. Limitation of Problem

To be able to achieve the exact target as expected, the authors limit the research problem as follows:

1. The subjects of this study were the students in grade XI of Medan 7 Senior High School A.Y 2020/2021.
2. The learning model given to students is limited, namely the discovery learning model in the experimental class and conventional learning in the control class.
3. Measurable learning outcomes limited to the subject matter fluids statics.

1.4. Formulation of Problem

Based on the description of the problem limitation, the formulation of the problem in this research are:

1. How are the learning outcomes of students taught by using the discovery learning model on the subject matter of fluids statics in grade XI semester 1 at Medan 7 Senior High School A.Y 2020/2021?

2. How are the learning outcomes of students taught using conventional learning models on the subject matter fluids statics in grade XI semester 1 at Medan 7 Senior High School A.Y 2020/2021?
3. Is there an influence of the discovery learning model assisted by multimedia to student conceptual understanding on the fluids statics material in grade XI semester 1 at Medan 7 Senior High School A.Y 2020/2021?

1.5 Research Objectives

The objectives to be achieved in this research are:

1. Find out the learning outcomes of students taught by using the discovery learning model on the subject fluids statics material in grade XI semester 1 at Medan 7 Senior High School A.Y 2020/2021.
2. Find out the learning outcomes of students who are taught by using conventional learning on the subject matter fluids statics in grade XI semester 1 at Medan 7 Senior High School A.Y 2020/2021.
3. Find out the effect of Discovery learning model assisted by multimedia to learning outcome on fluids statics material in grade XI Semester 1 at Medan 7 Senior High School A.Y 2020/2021.

1.6 Research Benefits

The expected benefits of the results of this research are:

1. As information material student learning outcomes on the subject matter fluids statics using the discovery learning model in learning.
2. As an alternative to the selection of learning models.

1.7 Operational Definition

The operational definitions of words or terms in this research activity are:

1. Learning is a business process carried out by someone to get a new change in behavior as a whole, as a result of his own experience in interaction with the environment (Slameto, 2003).
2. Learning outcomes is the goal of the learning Two of the most important educational goals are to promote retention and to promote transfer (which, when it occurs, indicates meaningful learning).(Anderson and chartwoll, 2001).
3. Learning model is a plan or a pattern that is used as a guide in planning learning in the classroom or in learning tutorials and to determine learning tools including books, films, computers, curriculum, and others (Trianto, 2011).
4. Discovery learning is learning proces give students oportunities to find the information with teacher or without teacher (Sirait, 2019).

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