CHAPTER I
INTRODUCTION

1.1 Background of the Problem

Education is a process of acquiring knowledge and skills that are useful in facing the era of globalization and the development of Science and Technology (IPTEK). Education has a significant impact on the development of society, because through regular education it can produce people who have the knowledge, behavior and skills to create society, nation and state. Based on Law no. 20 of 2003 concerning the National Education System states that education is a conscious and planned effort which aims to create a learning atmosphere and learning process so that students can actively develop their potential and have a religious spirit, self-control, personality, intelligence, noble morals and good skills, for themselves (society) to realize the full potential of students in the learning process.

Science education plays an important role in improving the quality of education, especially in producing quality students, namely people who can think critically, creatively, and have positive attitudes towards science, society and take the initiative in responding to information in society caused by the impact of developments in science and technology. The Program for International Student Assessment (PISA) shows that Indonesia is ranked 74th out of 79 countries, with science ability showing an average score of 396, with an OECD average of 489 (OECD, 2018). These results indicate that Indonesia is a country that is classified as low in the science capability category. A good education system is expected to improve the quality of human resources. Therefore, to be able to participate in global competition, education must now focus on increasing the country's competitiveness. This can be achieved if school education is directed not solely at mastering and understanding scientific concepts, but also at strengthening

students' problem-solving abilities and thinking skills, especially higher-level thinking skills, namely critical thinking skills (Riani et al., 2014)

Critical thinking ability means the ability a person needs to be able to deal with various conflicts that arise in social life as well as personally (Nuryanti et al., 2018). Facione (2011) explains that critical thinking is self-control, when determining something, it will provide explanation, analysis, judgment and reasoning, as well as using information, plans, methods, standards or background reviews which become the foundation for drawing conclusions for analysis. Teachers are obliged to make learning enjoyable, develop students' critical thinking abilities, find learning information independently, and actively create psychological structures in students (Patonah, 2014).

Based on the results of an interview with one of the science teachers at SMP Negeri 27 Medan, a problem was found that students experienced difficulties in learning science. This is caused by students' low understanding of concepts. Students' difficulties are also caused by a lack of development and involvement of students in their thinking skills where learning is still teacher-centered. Apart from that, the learning models used by teachers are also less varied. In the learning process carried out, teachers still use the conventional model, namely the conventional method. This is supported by initial test data on critical thinking ability with 15 questions, showing average that 9 of students completed it, while 22 of students did not complete it and had low critical thinking skills. One of the right ways to solve this problem is to change the old learning model with an innovative learning model and choose the right learning model.

Using the correct learning model is an alternative to overcome the problem of low student absorption capacity. So far, educators have not implemented a learning model that allows students to participate, and educators only use traditional learning models (Nurdyansyah & Fahyuni, 2016). Each learning model must be appropriate to achieve certain goals. Therefore, for different purposes, educators must use different presentation techniques to achieve their learning objectives.

Learning models are important things that teachers must pay attention to because learning models can influence student learning outcomes in teaching and learning activities. The learning model can be used as a pattern of choice, meaning that teachers can choose a learning model that is appropriate and efficient to achieve educational goals (Rehalat, 2016). One learning model that teachers can apply is the Science Technology Society (STS) model. The Science Technology Society (STS) develops cognitive, affective and psychomotor abilities that are formed in students, with the aim of being able to apply them in everyday life (Poedjiadi, 2007). The STS model invites students to think critically and act scientifically in responding to problems in society and to understand or understand how science, technology and their use are used for decision making (Wenno, 2008). Sujanem (2006) states that the STS learning model can increase activity, science and technology literacy and can create a climate that is conducive to learning, providing opportunities for students to be actively involved in learning.

Based on the research results of (Mungawanah et al,, 2018) he conducted research on the influence of the STS and CTL learning models on understanding physics concepts and critical thinking skills and obtained the average results of students' critical thinking skills in the medium category in the STS model, low category in the CTL model, and conventional. This is possible because learning towards critical thinking skills is not just obtained, but must be obtained through regular learning stages so as to build the habit of always being critical in life. (Jamilah et al., 2018) have also conducted research on the influence of the Science Technology Society (STS) on the Critical Thinking Skills and Scientific Attitudes of junior high school students with the results that there were significant differences in critical thinking skills between groups of students who studied using the Model. STS with groups of students who learn using a direct learning model. Thus, students' critical thinking skills using the STS model are better than using the direct learning model.

Apart from using appropriate learning models, the use of learning media can also arouse students' desires, generate motivation and stimulate students to learn (Arsyad A, 2011). One of the media is video. Video can be used in the learning

process, because it can provide unexpected experiences to students, by combining animation and pacing to demonstrate changes over time (Daryanto, 2016). Learning using animated videos is more successful in attracting students' attention because students are able to understand through 2 human sense sensors, namely through the eyes and ears. The use of animated videos is very helpful in the learning process and the delivery of learning material in an interesting way can increase students' understanding (Arimadona et al., 2022).

Based on the background above, the researcher is interested in conducting research with the title **"The Influence of Science Technology and Society (STS) Learning Models Assisted with Animated Video on Critical Thinking Ability Students Static Fluid Material at SMP Negeri 27 MEDAN".**

1.2 Identify the Problem

The identified issues within this research are as follows:

1. The level of critical thinking skills among students remains low.
2. The learning process is still teacher-centered.
3. Teachers continue to employ conventional methods during lessons.
4. The utilization of instructional media has not been maximized in the teaching process."

1.3 Scope of Problem

For the research to be more focused, the scope of this research will be limited to the following.

1. This research was conducted in class VIII of SMP Negeri 27 Medan in the even semester T.P. 2023-2024.
2. This research was carried out by providing treatment to the experimental class, namely by using the Science Technology Society (STS) model assisted by animated videos with the sampling technique used, namely purposive sampling.
3. The researcher observed the effect of the treatment given to the experimental class and compared it with the control class.

1.4 Problem Limitation

So that this research can be carried out well and with direction, the problem limitation in this research is that the learning model used is the Science Technology Society (STS) learning model assisted by animated videos on students' critical thinking skills on Static Fluid material.

1.5 Problem Formulation

Based on the background of the problem, identification of the problem, and the formulation of the problem in this research are:

1. Is there an influence in students' critical thinking skills through the Science Technology Society (STS) learning model assisted by animated videos?
2. What aspect of critical thinking is most developed through the Science Technology Society (STS) learning model assisted by animated videos?

1.6 Research Objectives

The aims of this research are:

1. To determine the influence in students' critical thinking skills through the Science Technology Society (STS) learning model assisted by animated videos.
2. To find out aspect of critical thinking is most developed through the Science Technology Society (STS) learning model assisted by animated videos

1.7 Research Benefits

The benefits of this research are:

1) For teachers

   The results of this research can be used to increase insight and knowledge, and recognize and understand the characteristics and thinking abilities of students in the learning process.

2) For Students

   Improving critical thinking skills in learning Static Fluid material.

3) For Schools

   Improving the quality and quality of schools by increasing students' critical thinking abilities.

4) For Further Researchers

   As information material for research that will be developed further.