CHAPTER I
INTRODUCTION

1.1. Background

Learning physics not limited remember and understand concepts, principles, laws and theories course, however more emphasizes ability participant educate to utilise their knowledge earn and then implement it in life daily for benefit people humans in this world. Important part from a system education among them is selection of learning models. One of the current learning models used is problem based learning. (Puteri, 2023)

Problem Based Learning (PBL) is a learning model that provides problems a real must resolved through understanding draft. The development of the times shows the learning model that is applied experience change specifically science learning. Problem based learning is an encouraging learning model student for work the same in groups and collaborate for look for solution to real world problems. Example question daily designed for stimulate desire know student before start learn material. Problem based learning teach student for think collaborative, working in group, communicate, and solve problem. Problem based learning are also possible student for exchange ideas, analyze problem with different ways, and think about opportunity method for solve problem. (Santia & Nurmayani, 2023)

Problem Based Learning learning model gives students the opportunity to build their knowledge. The opportunity in question is that students are given the freedom to develop their ideas, design experiments, to draw conclusions in their own language and of course by providing motivation by the teacher and with direction which can certainly help students to focus more on the topic being studied. The teacher supervises students in the implementation of learning and helps students if there are students who experience difficulties. Meanwhile, in the Problem Solving learning model, students are given breadth to focus only on certain areas to develop their knowledge. The teacher will play an active role in guiding and supervising students from the beginning to the end of learning with structured

instructions. This will allow each group to have limited knowledge because students' knowledge is only focused on theory.

Problem Based Learning is influence student learning outcomes. The influence of the problem based learning on student learning outcomes has a better influence on students than students who learn using conventional learning models (Harahap, 2019). This is also reinforced by other research on problem based learning in learning, that the application of problem based learning has an influence on students' physics learning outcomes (Suindhia, 2023). Problem Based Learning according to (Hastuti, 2018) in his research also concluded that the Problem Based Learning learning model influences student learning outcomes.

Learning model can be supported by learning media. The problem based learning supported by learning media has an impact on student learning outcomes, especially in science subjects including physics. The media assisted problem based learning has proven to be effective and has an influence in improving students' physics learning outcomes. (Almardiah, 2022)

Media is very important in supporting students' understanding of physics material. One interactive media that can be used is an interactive book using a flipbook. The development of flipbook digital media is a format for presenting book learning media in virtual format, which can convert PDF files into digital publications or digital book pages. This media can display various formats, not only in the form of text, but also images, video and audio that can be inserted into it, making the learning process more interesting and effective. (Lestari et al., 2022)

Flipbook is a digital book that uses 3D e-book technology. Students can page through a book on the screen as if they were reading a book by tapping a button on the screen when going to the next page. The advantages of using a flipbook include: easy to carry, compact and easy to copy, cost effective, saves paper when used as a flipbook, and can be used on portable electronic devices to meet students' learning needs. (Rahayu, 2021)

The results of observations made at MAS Plus Al-ulum Medan and the results of several students' questionnaires obtained the following results are that in

learning teachers still use the lecture and question and answer method (conventional model) when delivering material in class, so that learning is teacher centred and students only receive information or knowledge from the teacher. This causes students to become passive and only some students who pay attention can answer questions from the teacher. Apart from that, teachers only use learning resources from textbooks provided by the school. Teachers have not used concrete media in learning, so learning becomes monotonous and students' focus decreases. Media is any object that is used as a tool to convey information or learning in the form of audio, visual or audiovisual. (Suryani et al., 2018).

Based on interviews with class teachers, it was also stated that in physics learning, teachers rarely or even never use media or teaching aids, some of which are not effective in terms of time and material which has an impact on student achievement in understanding physics learning. Therefore, we need a model and learning media that can overcome the problems and obstacles faced by these students, namely by using problem-based learning with the help of media. Based on research, learning models with the help of media can influence student learning outcomes. (Utami et al., 2022)

Problem based learning with the assist of flipbook learning media is a learning model and media that involves students being active in learning and is expected to be of interest to students and influence student learning outcomes. It is proven from research that has been conducted that problem based learning assisted by flipbooks has a significant effect on improving student learning outcomes (Anjarsari et al., 2022). However in this study, the flipbook media used was only a digital book, so students thought that flipbook was only printed book made in electronic format. Although researcher can add interactive elements to flipbook media, as in previous research, interactive flipbook in the form of quizzes, videos and material in the media can improve student learning outcomes (Santia & Nurmayani, 2023). So in this research, researcher will add interactive elements such as quizzes and learning videos into interactive flipbook media so that it is hoped that students will be more interested in learning. Researchers will also look at the

influence of the problem based learning model with the help of this interactive flipbook on students' physics learning outcomes.

Based on the background above, the researcher wants to conduct research related to **"The Influence of Problem Based Learning Models Assisted with Interactive Flipbook on Students' Physics Learning Outcomes in Optical Geometry Material Class XI MAS Plus Al- Ulum Medan"**.

1.2. Identification Problem

Identification problems obtained based on the background of the problems that has been stated is as follows:

1. Teachers use inadequate learning models varies and tends using a conventional model.
2. Learning process in the classroom Still centered to the teacher.
3. Students not enough involved active in activity study teaching and results study physics current students classified low.
4. There are not enough teachers using learning media in the learning process teach.

1.3. Scope

The scope of this research, based on problem identification from the background of the problem that has been described, is to study and analyze the influence of the problem based learning model on student learning outcomes, especially in physics subjects.

1.4. Limitations of Problem

Limitations of problem in this study are:

1. Research done to student class XI high school
2. Material proposed physics limited to material optics geometry
3. Learning outcomes student be measured from realm cognitive

1.5. Formulation Problem

Formulation problem in this study are :

1. How results study physics student with using a problem based learning with the help of flipbook media on the material optics geometry?
2. How results study physics student with using a learning model conventional in the material optics geometry?
3. Is there is influence of Problem Based Learning with the assist of flipbook media on the material optics geometry to results Study physics participant educate?

1.6. Objective Study

Objective study based on formulation problems that have described from this study are:

1. Knowing results Study physics student with using Problem Based Learning with the assist of flipbook media on the material optics geometry.
2. Knowing results study physics student with using a learning model conventional in the material optics geometry.
3. Knowing influence of Problem Based Learning with the assist of flipbook media on the material optics geometry to results study physics participant educate.

1.7. Benefit Study

Benefits that can be obtained obtained from this study are:

1. For participant educate, get it give experience different learning in learning process and expectations can increase results Study student through Problem Based Learning.
2. For teachers, can using a Problem Based Learning and flipbook media as alternative in business increase results study physics student.
3. For researchers, can give real knowledge and experience in know influence from use of Problem Based Learning.