CHAPTER I
PRELIMINARY

1.1. Background

Law of the Republic Indonesia Number 20 of 2003 concerning the National Learning System said the education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state.

In accordance with the objectives stated in the Law of the Republic Indonesia Number 20 of 2003 concerning the National Learning System which states that the compulsory national education system can ensure equal distribution of learning opportunities, increase the quality and relevance and efficiency of education management to overcome challenges with the demands of transforming local, national life, and globally so that educational reform is needed in a planned, directed, and sustainable way. In accordance with the aim of education in improving human resources in the face of rapid developments in communication and information technology, the Ministry of Education continues to update the education system. One of the updates is the change of the Kurikulum 2013 into an Kurikulum Mrerdeka.

Quoted from the Ministry of Education and Culture website, the Kurikulum Merdeka is a curriculum with diverse intra-curricular learning where the content will be optimized so that students have enough time to explore concepts and strengthen competencies. The aim of the Merdeka is to create a fun education for students and teachers. Therefore, the teacher must have a learning method that can make learning objectives can be achieved properly. In classroom learning, in addition to the right learning method, teachers also need to use the right learning media.

Learning media is media used as a tool to convey material or information from teachers to students. Learning media can be in the form of audio media, visual media, or video. Learning media in the learning process aims to equalize students' perceptions of the material presented (Puspitarini & Hanif, 2019).

The rapid development of the world of technology today has produced a variety of internet-connected applications. These technological advances should be empowered by teachers to help realize the success of learning activities in the world of education. This is because the progress of the world of education is impossible without the help of technology. Maswan & Muslimin (2017) say that in the world of education, technology and education are like two sides of a coin that cannot be separated. Technological advances with various other consequences also demand a greater role in the world of education, especially for teachers to apply various techniques, methods, and approaches in transforming material or values to students.

Chemistry is one part of the natural sciences which is taught at the high school to university level, which requires an understanding of the concept. One of the chemistry subjects studied in class X SMA/MA is chemical bonds. When I did a Teaching Assistant at SMA Negeri 11 Medan, I saw that the teachers at this school had not utilized technology in learning, such as the use of instructional media in teaching and learning activities, especially in chemistry lessons. When I carried out teaching practice in accordance with my assignment in the Teaching Assistant course, I saw that the enthusiasm of students in learning chemistry was very low, because for them chemistry was a difficult and complicated lesson. They like learning in a relaxed way and using learning media. By using media students give more focus on learning. Based on the results of observations and informal interviews with teachers in the field of chemistry studies at SMA Negeri 11 Medan, learning is still monotonous and conventional teacher-centered learning so that students listen more to the text read by the teacher, of course it is learning that must be avoided. Learning resources used by students are textbooks, student worksheets provided by the school and the internet. Students are happier with learning using animation and students find it easier to understand the material. Students need interactive media to support learning.

In connection with this condition, teachers need to use learning media that can make students become independent. Moreover, in the era of the Merdeka Curriculum as it is today, students are the center of learning which of course will make students overwhelmed and ultimately do not understand the material optimally if they are not given an alternative to get material that is concise but

includes basic competencies and skills. learning objectives that have been set. Therefore, to facilitate the learning process, teachers can use assistive media, namely learning media. With interactive media, students find it helpful to learn independently. Learning activities are equipped with audio-visual interactive learning media so that teachers are not more dominant in a lesson and students can actively participate in learning activities. The teacher acts as a facilitator when students find it difficult to solve problems.

Efforts that can be done is to develop an interesting learning media in order to help students understand the material presented by the teacher. Learning media is an important requirement in the learning process. The role of learning media in the learning and teaching process is an integral part that cannot be separated from the world of education. Learning media is everything that can be used to channel the sender's message to the recipient, so that it can stimulate the thoughts, feelings, concerns, and interests of students to learn (Tafonao, 2018).

Multimedia has its own charm and can help teachers in the learning process and improve teacher-student interactions in the classroom. The learning process takes place actively by involving students (Yulhendri et al., 2022). One of the media that can be used by the teacher as a teaching aid is video animation. Animated video is a series of images that move to form a single unit. Animated videos are used because they can generate student interest and increase student motivation in accepting learning. There are so many applications that can be used to create animated videos for learning media, one of which is Powtoon (Farizi et al., 2019). According to Azhar Arsyad (2011) the complexity of the material presented to students can be simplified with the help of the media. One program that can be developed into an interesting learning media is Powtoon. Powtoon can make animated videos more interesting and it can be described that chemistry is very close to our lives. With this interactive media, students can learn independently because students can operate the media independently (Deliviana, 2017).

Powtoon is an online-based service to create a presentation that has very interesting animation features, including handwritten animation, cartoon animation, and more lively transition effects and very easy timeline settings. Powtoon can be accessed by anyone including teachers and students and how to make animated

videos is quite easy because the features available are quite complete, such as handwritten animation, animated cartoons, and livelier transition effects and very easy time line settings. Almost all features can be accessed on one screen and can be used in the process of creating a presentation or presentation. This is what makes the Powtoon application increasingly used in the world of education (Kholilurrohmi, 2017).

The purpose of this research is to create audio-visual interactive learning media and test the feasibility of interactive learning media based on expert judgment, chemistry teachers, and student responses.

Based on the description above, the researcher intends to conduct research with the title: "**Development of Powtoon-Based Audio-Visual Media in Chemical Bonding Materials".**

1.2. Identification of Problems

Based on the background above, several problems that occur in learning can be found, namely:

1. An Merdeka Curriculum requires teachers to be more creative and innovative in learning.
2. There is still a lack of use of learning media so that they use conventional methods or lectures.
3. Requires learning media that can help students understand chemical bonding material.
4. Lack of use of technology in the development of learning media so that learning activities are more interesting and make it easier for teachers and students.

1.3. Scope

The scope of this research is as follows:

1. This study discusses the development of powtoon-based audio visual learning media.
2. This study discusses the feasibility of Powtoon-based audio visual learning media in chemical bonding materials.

1.4. Scope of Problem

Limiting a problem is used to avoid any deviations or widening of the subject matter so that the research is more focused and facilitates the discussion so that the research objectives will be achieved. Based on the identification of the problems that have been stated above, this research is only limited as follows:

1. The development is done by using audio-visual, namely powtoon.
2. The material taught is chemical bonds in class X SMA in odd semesters.
3. The expected target is a powtoon-based audio-visual media that is feasible to use as a learning media that can be applied in the learning process.
4. The research subjects are students of class X SMA.

1.5. Formulation of The Problem

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

1. What are the results of the analysis of media needs in chemical bonding learning in class X IPA SMA Negeri 11 Medan?
2. How is the feasibility of powtoon-based audio-visual media in chemical bonding materials based on the validation results of media experts, material experts and chemistry teachers?
3. What is the student's response to powtoon-based audio-visual media on chemical bonding material?

1.6. Research Purposes

Based on the problem formulation above, the objectives to be achieved in this study are as follows:

1. Knowing the results of the analysis of media needs in chemical bonding learning in class X IPA SMA Negeri 11 Medan.
2. To determine the feasibility of powtoon-based audio-visual media in chemical learning of chemical bonding materials based on the validation results of media experts, material experts and chemistry teachers.
3. Knowing the students' responses to the powtoon-based audio-visual media on chemical bonding material.

1.7. Benefits of Research

The benefits of this research are as follows:

1. Theoretical Benefits
   a. For other researchers, can provide information about the development of powtoon-based audio-visual media in chemical learning of chemical bonding materials.
2. Practical Benefits
   a. For educators, as input for educators in the field of Chemistry in an effort to improve the quality of chemistry learning on chemical bonding materials and encourage educators to be creative in using learning media.
   b. For students, the development of powtoon-based audio-visual learning media can make it easier for students to understand learning and make learning fun.
   c. For schools, as a research contribution in an effort to improve the quality of education in the future.
   d. For researchers, it can add experience about learning at school and can apply the knowledge that has been gained during lectures.