CHAPTER I
INTRODUCTION

I.1. The Background of the Study

Biology is a branch of science which focus on living things. The characteristic of biology learning is the using logical and rational thinking, organized and discipline nature. Biology emerged from human curiosity in daily problems. Numerous questions such as what, how, why and who are the questions that always appear because human has sense and ability to learn (Prawirohartono: 4).

Based on Dewey learning theory, critical thinking is defined as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered by observation, experience, reflection, reasoning, or communication, as a guide to belief and action. Student think things through for himself, raise question and find relevant information by himself. Critical thinking attaches huge importance to giving reasons and to evaluating reasons as well as possible. It is contrasting with the kind of thinking in which student just receive ideas and information from someone else, that is call a "passive process" (Fisher, 2001).

Questions play an important role in the processes of teaching and learning because children's achievement and their level of engagement depend on the types of questions. The national and international literature has mainly focused on the importance of questioning as a teaching technique and as a strategy in promoting interactive classrooms, teachers are not necessarily taught the essential knowledge and skills to conduct effective questioning episodes which facilitate higher-order thinking.

Haynes and Bailey (2003) in Lisa (2008 :95) emphasized the importance of asking the right questions to stimulate students' critical thinking skills. Other researchers Brown and Kelley (1986) in Lisa (2008: 95) also focused on integrating questioning techniques into class discussions to support an educational environment where students can demonstrate and practice critical thinking skills.

Based on practical teaching experiences in SMA Negeri 1 Berastagi, it was found problems in carry out the learning process, especially the lack participation of students for asking-answering activities in the classroom. Some students who have high cognitive levels and activity that dominate the learning, while other students just be silent and passive. Students ability for asking- answering and critical thinking are very necessary to be improved.

This problems have confirmed by interviewing biology teacher in grade ten . Based on the data student learning outcome of ecosystem topic in academic year 2010/2011 still low 65, which is more than 50 % students have score under KKM, while the minimum score is 75.

In learning process, teacher try to give knowledge and information as she can and learners actively collect or accept it. The process of teaching and learning is much dominated by memorizing activities. Teacher use power point media, but most of students still passive because learning activity is teacher-centered and media used by teacher is not enough to build cognitive domain of student.

Implementation of index card match models using various media in the learning process is to generate student questioning ability and stimulate student activity in learning, assist the effectiveness of the learning process, directing the attention of students to concentrate on the content, facilitate the achievement of the goal to understand and recall information provided. Learning becomes more attractive, bringing a new variation for students learning experiences so that students are not bored and not being passive, and can overcome the limitations of the senses, space and time with presents an overview of the object being studied in the classroom.

In common learning process, the topic just reviewed by student with narrative summary and abandon their critical thinking. Index Card Match is classroom review models that expected to develop student's critical thinking by improve questioning and solving problem ability in team work. This model is suitable to be applied in the learning ecosystem because ecosystem is one of the subject matter of biology that studies about the environment and its components. Principles in ecosystem topic is very easy to be observed by students

and can raise many questions as it directly relates to life.

The relevance research concerning on index card match models conducted by Emiyanti (2011). The results showed that the Index Card Match Model can improve student's motivation , this proves that the motivation to study have increased fom 40.48% in first cycle to 62.36 % in the second cycle and in the third cycle to be 80.68%.

Research relevance for index card match also have been done by Farihatul (2009) on the application of learning strategy Index Card Match (Looking for Match) to improve learning outcomes on Photosynthesis topic in class VIII in SMP AL-1 Surakarta Islamic School year 2008/2009. The result indicate that application of learning ICM can improve students learning outcomes. The result is 80% of reach the indicator of completeness.

From the description above, the author is interested in doing research on **The Implementation of Index Card Match Models (ICM) Using Various Media to Improve Students' Questioning-Answering Ability and Learning Outcomes of Ecosystem in Class X SMA Negeri 1 Berastagi (Academic Year 2011/2012)**

I.2. Problem Identification

Based on the background of the issues raised above, several issues can be identified, namely:

1 . Learning process of ecosystem topic is teacher-centered .

2. Model used of ecosystem topic are not appropriate and less variation

3. Students have lack ability to ask question and think critically

4. Students have less courage to raise question and answer in english

5. The score on ecosystem topic in academic year 2010/2011 is still low 65, that is more than 50%   student get score under the minimum score (KKM), while the score minimum (KKM) is 75.

I.3. Scope of Problem

The scope of problem in this research are:

1. This is a classroom action research (CAR) in ecosystem topic
2. Research was conducted in class X-2 SMA Negeri 1 Berastagi, which is still lacking in questioning ability and learning outcomes
3. This research was conducted to observe student questioning ability and student learning outcomes using index card match models and various media

I.4. Research Question

Based on the background and limitation issues, research problems are formulated as follows:

1. Is there any improvement of students' questioning-answering ability, during the implementation of index card match model using various media of ecosystem in class X SMA Negeri 1 Berastagi?
2. Is there any improvement of student learning outcomes, after implementation of index card match model using various media of ecosystem in class X SMA Negeri 1 Berastagi?

I.5. Objective

1. To know the improvement of students' questioning-answering ability during implementation of index card match model using various media of ecosystem in class X SMA Negeri 1 Berastagi academic years 2011/2012
2. To know the improvement of student learning outcomes after implementation of index card match model using various media of ecosystem in class X SMA Negeri 1 Berastagi academic years 2011/2012

I.6. Significance

This research is expected to provide benefits as follows:

1. Give input to the author and teacher to choose and apply profer,effective and efficient learning model in improving student questioning ability and student learning outcomes.
2. Students are expected to have particular capabilities of asking- answering question using critical thinking in english to create active learning.

2. Provide input and information to the other researcher that perform the same research topic.

1.7. Operational Definition

1. Index cards match model is used in active and joyful learning to review the subject matter by finding pairs of index cards which is contain a question or answer clue on ecosystem topic in class X SMA Negeri 1 Berastagi

2. Questioning ability is a must- have ability for student that will give important role in the processes of teaching and learning because children's achievement, and their level of engagement, depend on the types of questions of ecosystem topic class X semester II that can be observed using student's questioning-answering sheet (Index Card)

3. Various media is anything that can be used to distribute information about ecosystem from teacher to student so it can stimulate thoughts, feelings, concerns , interests and students attention in such a way which include power point, video and concept map.

4. Learning outcomes is the result obtained by students after learning process on ecosystem topic in Class X SMA Negeri 1 Berastagi that can be observed by student's comprehension test and observation sheet.

5. Ecosystem topic is about interaction between organisms and their non living-environment in a certain area. The topic include the hierarchy of life, component of ecosystem, types of ecosystem, energy flow and biogeochemical cycle at class X semester II that will be reviewed using index card match model.