

CHAPTER I INTRODUCTION

1.1. Background

Education is a process to effect students for adaptation in their environment thus will cause a change that enabled them be function in society. This is meant that success or failure of educational objectives depends on how the learning process experienced by students as a protege. Instruction charge of directing this process in order the objectives of these changes can be achieved as desired because the learning process is the core of formal educational activities who the primary role holder is a teacher.

Learning process in the old paradigm was teacher gives knowledge to students passively. In the context of education, the old paradigm means if someone has the knowledge and expertise in a field, he would be able to teach, he did not need to know the proper teaching and learning process: he only needs to pour what he knew, the old paradigm is still considered as an alternative by most of teachers (Wena, 2010: 188) in which the model that they used is still Direct Instruction where students just sat, silent, listen, record and memorize. Though the teacher's task is not only pour some of the information into the minds of students, but teachers as well as a motivator, mediator and facilitator.

From the initial observation at SMA Swasta Muhammadiyah 1 Medan indicates that students grade X were less like Physics lesson, they want to learn it because Physics is a duty subject. They prefer if they are involved in learning process actively like discussion group. This is aimed in order the delivering material is easier for understanding because they are not only listening but also involving actively. In addition, interview result with teacher of Physics (Siti Basariah, S.Pd) found that learning in the classroom more frequently using Direct Instruction learning model because it gives an opportunity in delivery of material detailly. The data obtained show that the Physics mean value of students before remedial in academic year 2011/2012 has not achieved KKM, that is 61.

The low of achievement in Physics subject in schools are issues that should receive more attention and resolution. In this case who have the important

role is teacher where is considered has the most powerful and dominant role in the school (Hamalik, 2009: 45). As one of the main tasks of teacher is select the appropriate approach or strategy to deliver a lesson in which the main task is closely related to the ability of teachers to improve learning process and outcomes. Selection of an appropriate approach or strategy intended to make teaching and learning activities can be taken place effectively that is expected to help students to improve their ability in accordance with the instructional objectives that will be achieved. It's same with the opinion of Moh. Uzer Usman (Suryosubroto, 2009:17) that *“competent teacher would be able to create an effective learning environment and will be better able to manage the learning process, so that student learning outcomes are at an optimal level”*. In addition, the other aspects that must be mastered and conducted by the teacher in teaching is depends on the chosen model (Rob Nurris in Suryosubroto, 2009: 11).

Therefore, teacher need to develop and implement teaching and learning activities based on some basic ideas, namely: knowledge is found, formed, and developed by students; students actively construct knowledge; teacher need to strive for developing student's competence and ability, and; education is the personal interaction between students and interaction between teacher and students (Lie, 2010:5). It can be implimented by increasing the participation of the learner actively in teaching and learning process. As noted (Kemp in Wena, 2010: 189) that need for teaching and learning activities as the driving force for learners to participate actively. Through active students in learning activities, expected the learning outcomes and student's retention can be increased so that learning activities more meaningful. One of the learning models that will give students the opportunity to work in cooperatively with fellow students in structured is Cooperative Learning Model in which teacher acts as facilitator (Lie, 2010: 12). Through cooperative learning, student will be a source of learning for others so learning process will be more meaningful because learners can teach each other even though the students learn from two main sources learning, namely teacher and friends (Wena, 2010: 189). As the addition, the cooperative learning comes from the diversity of student's ability.

Cooperative learning is a learning model where students work in small groups to help each other in learning of subject matter. In this learning, student should be able to share, help, discuss and argue each other to hone the knowledge that they control and close the gap in their understanding. Cooperative learning can be used effectively for all levels and types of classes including a special class for talented student even for a class in medium intelligence level and in particular for heterogeneous classes with varying degrees of ability to teach a variety of subjects ranging from the basic ability until problem solving that is complex. It can also be used for class management in learning.

The reasons make cooperative learning are in educational practices because it can improve student's achievement, develop intergroup relations, acceptance of classmates who are weak in academic, increase self-esteem, growing awareness that students need learn to think, solve problems, integrate and apply their skills and knowledge. In addition, cooperative learning can help make a difference become learning materials and not be as a problem, namely the relations development among of students from different ethnic backgrounds.

As for the types of cooperative learning model namely Jigsaw, Think-Pair-Share, Numbered Heads Together, Group Investigation, Two Stay Two Stray, Make a Match, Listening Team, Inside-Outside Circle, Bamboo Dancing, Point-Counter-Point, and The Power of Two (Suprijono, 2010: 89). From all types of cooperative learning model, the most effective model is Jigsaw cooperative learning model because more emphasis on the mastery of concepts (Slavin, 2005: 237). The other reasons are because in Jigsaw found the expert group. By the expert group, students will more responsible and focused to resolve the matter which is a part of them and not only one or two people that exist here, but also more than one or two people. In addition this model has the advantage that is students will be more active in class because each group has different problems and students understand the subject matter easily. Through this model students are required to be able to convey each of their opinion related to the subject matter that will be learned. Thus the student's activeness in following lesson can be increased.

This is evident from several researchers who have conducted research about Jigsaw cooperative learning model, including; Jon Hendrik M. Silaban in the " *Penerapan Model Pembelajaran Kooperatif Tipe Jigsaw untuk Meningkatkan Hasil Belajar Siswa Pada Materi Pokok Besaran dan Satuan Kelas X Semester 1 SMAN 1 Air Joman Kisaran Tahun Ajaran 2008/2009* " conducted research as Classroom Action Research (PTK) method by examining student's learning activities through observation sheet which shows that by using Jigsaw cooperative learning model in learning can provide improvement of learning outcomes and activities of students, this can be seen from the mean value of the initial test before the application of Jigsaw cooperative learning model was given as 4.17. After applied Jigsaw cooperative learning model, the student's learning outcomes increased from 12.6 in cycle I to 14.6 in cycle II. While student's learning activity was increased as 7.5%. Researcher suggests that attention to the steps in learning to achieve the improvement of learning outcomes and anticipate the time addition of the research.

According to Sri Masvita Tarigan in " *Pengaruh Model Pembelajaran Kooperatif Tipe Jigsaw Terhadap Hasil Belajar Siswa Di kelas VII Semester I SMP Negeri 30 Medan T.P. 2010/2011* " conducted research as quasi-experimental method by designing with pre-test and pos-test and observe how the activities of students during the learning model was applied. Her research show that using Jigsaw cooperative learning model in learning can provide improvement of student's learning outcomes and activities, this can be seen from the value of student's learning outcomes which have increased from 37.37 to 70.75. In addition, students also experienced an increase of activities. The constraints of the researcher were not all groups can present results of their discussion for a limited time, the students are paying less attention when the subject matter presented and disturbing friend who caused a stir. Therefore, researcher suggests adjusting the time allocation available to the group discussion, rebuke and advice students who disturb during the learning takes place.

Further Tin Indriati in " *Upaya meningkatkan Hasil Belajar Siswa Melalui Model Pembelajaran Kooperatif Tipe Jigsaw Pada Materi Usaha dan Energi di*

Kelas XI IPA Semester 1 SMA negeri 3 Binjai Tahun Ajaran 2008/2009" conducted research as Classroom Action Research (PTK) method. Her research shows that using the Jigsaw cooperative learning model in learning can provide the improvement of student's learning outcomes and activities, this can be seen from the results of student learning outcomes has increased from 65.0 in cycle I to 77.5 in cycle II. Researcher suggested that consider the steps and weaknesses in this learning model in order to obtain better an increase of learning outcomes.

According Dwiyatno in "*Model Pembelajaran Kooperatif Tipe Jigsaw untuk Meningkatkan Minat dan Kemampuan Mendiskripsikan Materi Fluida dalam Pelajaran Fisika bagi siswa Kelas XI IPA-1 SMA Negeri 2 Purworejo*" conducted research as Classroom Action Research (PTK) method that was performed in two cycles. Researcher measures student's learning outcomes through observation of students' learning interest. From the research results can be concluded that the Jigsaw cooperative learning model can enhance student's interest that was activeness in following the learning process from 58% in cycle I to 80% in cycle II. While the percentage of KKM increased from 42.5% in the initial conditions to 56.4% in cycles I and 76.9% in cycle II. As for the suggestion of researcher is necessary to follow up the results of this research in teaching and learning activities at school because based on the results of this research the students is possible to achieve competence, teachers need to innovate from result of this classroom action research so that the issue of learning in the classroom can continue to be pursued to overcome various problems of learning in schools is needed teacher collaboration with various stakeholders including teachers with teachers, peers or lecturer from the college.

To follow up all of research so wish to make research by applying the same learning model that is Jigsaw cooperative learning model although in factly realizes that this learning model has been much studied. Here will conduct quasi experimental to increase student's learning outcomes whether it from cognitive, affective and psychomotor domains in Heat and temperature material and also observe the using effectiveness of Jigsaw cooperative learning model. Based on the explanation above, so interested to conduct research which titled was

“Effectiveness of Jigsaw Cooperative Learning Model in Heat and Temperature on Student’s Learning Outcomes Grade X SMA Swasta Muhammadiyah 1 Medan in Academic Year 2011/2012”.

1.2. Identification of Problem

Based on background presented above, the problems identification in this research are as follows:

1. Learning model that is often used is Direct Instruction
2. Lack of students involvement in teaching and learning activities
3. The low of student learning outcomes in Physics

1.3. Limitation of Problem

In accordance with the problems identification, then the problems limitation in this research are as follows:

1. The model applied in this research is Jigsaw cooperative learning model
2. Learning topic in this research is Heat and Temperature
3. The research is conducted in SMA Swasta Muhammadiyah 1 Medan grade X semester 2 academic year 2011/2012

1.4. Formulation of Problem

Based on the problems limitation, so the problems formulation contained in this research are as follows:

1. Is there any effect difference of jigsaw cooperative learning model and direct instruction learning model for cognitive domain on student’s learning outcomes in heat and temperature?
2. Is there any effect difference of jigsaw cooperative learning model and direct instruction learning model for affective and psychomotor domains on student’s learning outcomes in heat and temperature?
3. How the effectiveness of Jigsaw cooperative learning model on student’s learning outcomes in heat and temperature?

1.5. Objective of Research

Referring to the problems formulation, then the objectives to be achieved in this research are as follows:

1. To examine the effect difference of jigsaw cooperative learning model and direct instruction learning model for cognitive domain on student's learning outcomes in heat and temperature
2. To examine the effect difference of jigsaw cooperative learning model and direct instruction learning model for affective and psychomotor domains on student's learning outcomes in heat and temperature
3. To examine the effectiveness of jigsaw cooperative learning model on student's learning outcomes in heat and temperature

1.6. Benefit of Research

The benefits of this research are as follows:

1. For School: can provide good information and donations in order to improve the learning process and school quality through increased student's achievement and professionalism of teachers working
2. For Teachers: for consideration in selecting or integrating a variety of appropriate learning model class, especially in physics learning
3. For Students: students are more motivated and continue to be active during the learning process takes place, so it can improve learning outcomes and provide a fun learning experience
4. Researcher: As an input, and increase knowledge for the researcher as candidate for future teacher in the implementation of Jigsaw cooperative learning model