

# INCREASING ACTIVITY AND STUDENT LEARNING OUTCOMES OF BIOLOGY THROUGH THE IMPLEMENTATION OF COOPERATIVE LEARNING MODEL BY GIVING QUESTION AND GETTING ANSWER FOR THE CLASS X<sub>2</sub> SMA N 1 BENAI ACADEMIC YEAR 2011/2012

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## Abstract

This study aims to increase the activity and student learning outcomes through the implementation of cooperative learning model by giving question and getting answer for the class X<sub>2</sub> Benai SMA N 1 academic year 2011/2012. This research is a class action, which was conducted in January-February 2012. Subjects were high school students X<sub>2</sub> SMAN 1 Benai class numbering 36 people, consisting of 16 men and 20 women. Parameter studies are student activities and learning outcomes which consist of studying the absorption and completeness. Average student activity on the cycle I is 74.87% (enough) and increased in the second cycle is 81.28% (good). Average absorption of students in the cycle I is 78.94 (enough) and the second cycle which had an average of 80.42 (good). Thoroughness of student learning in the cycle I was 91.67% (excellent) and 97.22% (excellent) on the second cycle. Cycle I a group award in any super group 4 and 3 great group and the second cycle of all groups received a great award. From the research results can be concluded that the use of cooperative learning models by giving a question and getting answer can increase the activity and students' high school class X<sub>2</sub> N I Benai in the academic year 2011/2012.

Keywords: Cooperative learning, the strategy giving question and getting answer, activities, learning outcomes.

## Introduction

Progress of knowledge and technology fast ask the quality of human resources. Biology is one of knowledge and branch of science which has big influence to improve the development science and technology. Reviewed from education side, biology take as a role to achieve national education aim.

Based on interview outcomes between the writer and biology's teacher class X<sub>2</sub> SMAN 1 Benai is known that activity and student learning outcomes still low.

Activity and student learning outcomes which are still low is be caused only some students want to read text book in studying and finishing student work sheet and if students are divided into studying groups only some students doing the task, while others only talk with their chair mates. There are still many students who less communicative, because they don't want to tell their opinion, respond the discussion and too be shy to ask to teacher although they don't understand with the lesson, and from the way of teaching because teacher only tell all the information and make students become tired and bored to study. This boring can cause activity

and student learning outcomes are low. We can see it from their value which still not achieve minimum completeness criteria in 70 for average of test in 63,33.

Based on background above is known that there needs to do innovation and improvement in studying process of Biology class X<sub>2</sub> SMAN 1 Benai. The teacher as facilitator and motivator can do innovations and improvements by implementing studying in strategy which possible to increase activity and student learning outcomes. One of alternative which possible to increase studying process is by implementing cooperative learning model and strategy giving question and getting answer. In this case, students make question which they really don't know and answer the question which they really know, so it can create students' self confidence when they respond others' opinion and have responsibility in studying groups. It can be implemented to student who has problem include biology studying (Silberman, 2009).

The problems above interest the writer to do observation by title: Enhancement Activity and Student Learning Outcomes of Biology Trough the Implementation of Cooperative Learning Model by Giving Question and Getting Answer for The Class X<sub>2</sub> SMA N 1 Benai Academic Year 2011/2012.

## Literature Review

Study is a complex process which happen to all people and occurs lifetime, since still a baby until to a grave later. One of sign that someone has studied something is there is a change behavior in his/herself. The change in behavior is about either a change in knowledge (cognitive) and skills (psychomotor) nor about value and attitude (affective) (Sadiman, 2002). According to Slameto (2003) study is a process which is done individually to get a change in behavior whole, as a result from individual experience in interacting with the environment.

Activity is a principle which is very important in learning interaction, without it, learning process cannot be happened. According to Sardiman (2007), activity is a part and basic of teaching which is very important and as a success keyword in interaction process between students and teacher. Studying activity is activity of a physical or mental, so that in studying activity, both of activities have to always be connected (Yasa, 2008). According Sriyono in Yasa (2008), activity is all actions which is held physically and spiritually. Student activity trough learning process is one of indicator from the desire of students to study. Student activity is activity or behavior which happen trough learning process. Activities here refer to activity in learning process such as asking, telling opinion, doing tasks, can answer teacher's question and can be in teamwork with other students, also have responsibility to do the task.

According to Sudjana (1991), studying activity includes two aspects which cannot be separated that's mental activity (emotional-intellectual-social) and motor activity (physical motion), both of them are connected. In telling topic, teacher can develop student activity in studying, activities here refer to physical and spiritual activity. Physical activity is activity which can be seen if students are busy to work, such as doing experiment, making model construction, gardening, etc. While spiritual activity is activity which can be seen if students are observing carefully, remembering to solve the problem and choosing decision. Between physical activity

and spiritual activity have to can connect both so that students can think by themselves, they have to be given a chance individually (Nasution, 1995).

According to Bloom in Sumiati and Asra (2007) generally, learning outcomes are grouped into 3 aspects, they are:

1. Cognitive, which is about thinking ability include remembering, understanding, application, analyzing, evaluating and creating.
2. Affective, according to Gagne, attitude is a condition in someone's self which affect and change action choosing.
3. Psychomotor is a skill which is done by someone who involves sense and muscle.

Slavin (2008) told that cooperative learning is a learning model where students study and work in small groups collaboratively which the members consist of 4-6 people, and group structure is heterogenic. Then he also told that successful of neither group studying neither depends on ability and activity of members group, either individually nor group.

Strategy giving questions and getting answer is implementation from strategy constructivism which puts student as subject in learning. Meaning, students are able to reconstruct their knowledge by themselves while teacher is only as a facilitator. Strategy giving questions and getting answer is founded by Spancer Kagan, a Swiss in 1963. This strategy is developed to train students to have ability and skill in asking and answering the question, because basically the strategy is a modification from ask and answer question method which is collaboration by using pieces of paper as the media. Some excellences from strategy GQGA are : (1) more active in atmosphere, (2)students get good chance individually or group to ask the topic which has not been understood yet, (3)teacher can know student's authorization for topic which is taught, (4)encourage students to be brave to tell their opinion (Anonimus, 2011).

Silberman (2009) told that the steps of giving question and getting answer, they are:

1. Share the pieces of paper with a total of two times the number of students
2. Command every student to complete this sentence:  
Paper 1 : I still have a question about  
.....  
Paper 2 : I can explain about  
.....
3. Make students into small groups which consists of 4-5 students
4. Each group chooses questions in paper 1 and the topics which they can explain in paper 2.
5. Ask every group to read the question which they have selected. If there is one of them can answer, give a chance to answer. But if there's no can answer the question, teacher who has to answer it.
6. Ask every group to tell what they can explain in paper 2. Then ask them to tell it to others.
7. Continue this process which notice times and condition.
8. End the learning process by telling the conclusion and classification from the answering of student.

Zaini *et al.* (2010) told that strategy giving question and getting answer can review the learning topic, direct the students to act actively in learning process, also to be brave to give question and tell the learning topic which has been understood.

Implementing cooperative learning model type giving question and getting answer can increase activity and scientific attitude of students in biology learning (Jannah, 2011). Strategy giving question and getting answer is a strategy which is very good to be used to involve students in reviewing the topic which has been explained. This strategy is exactly to use in the end of meeting such as 15 minutes last or in the end of semester as the conclusion or review from all topics who have been explained for one year (Zaini *et al.*, 2002).

## Methodology

This research is done in SMA N 1 Benai Class X<sub>2</sub> second semester on January-February academic year 2011/2012. There are 36 students which consist of 16 boys and 20 girls. The parameters are studying absorption, studying completeness individually and group award. Instrument which is used in this research is instrument of learning and instrument of data collection. Instruments of learning are syllabus, lesson plan, student work sheet, post test and daily test while instruments of data collection are student activities which consist of reading student's text book indicator, finishing student work sheet, giving question, giving answer and doing discussion in groups. Student learning outcomes are student activity observation sheet, test of student learning outcomes which consists of post test in the end of meeting and daily test every in the end of cycle. This research consists of 2 cycles. Cycle I consists of 2 meetings which discuss about biodiversity in Indonesia. Cycle II consists of 3 meetings and 1 daily test which discuss about the plant.

## Research Finding

**Table 1. Average Percentage of Student Activity in Cycle I after Implementing Cooperative Learning Model and Strategy GQGA**

Indicator	Student Activity in Meeting		Average (%)	Category
	I (%)	II (%)		
Reading text book	72,91	75,69	74,3	Good enough
Finishing student work sheet	68,75	73,61	71,18	Good enough
Giving question	74,30	76,39	75,35	Good enough
Giving answer	72,92	78,47	76,02	Good enough
Doing group discussion	75	80	77,5	Good enough
Number of students	36	36		
% Activity	72,78	76,83	74,87	Good enough
Category	Good enough	Good enough	Good enough	

Based on Table 1 above, we can see that average percentage of student activity class X<sub>2</sub> SMAN 1 Benai by implementing cooperative learning model and strategy GQGA in cycle I is 74,87% and good enough for category. In first meeting, percentage student activity is 72,78% for good enough category, but in second meeting the percentage becomes 76,83% for good enough category.

Based on Table 1, we also can see if in every indicator finding the different value of percentage. In cycle I for reading text book indicator at first meeting is 72,91% , at second meeting is 75,69% and average value is 74,3% (good enough), while for finishing student work sheet indicator at first meeting is 68,75%, at second meeting is 73,61% and average value is 71,18% (good enough). For giving answer indicator at first meeting is 72,92%, at second meeting is 78,47% and average value is 76,02% (good enough). For giving question indicator at first meeting is 74,30% and at second meeting is 76,39% and average value is 75,35% (good enough). For doing discussion indicator at first meeting is 75%, at second meeting is 80% and average value is 77,5% (good enough).

For reading text book activity, finishing student work sheet and giving answer are only good enough because there are still many students who unserious and don't understand in reading text book, consequently many students are confuse in giving answer and finishing student work sheet. For giving question activity are still good enough because students ask something which is not suitable with the topic of lesson and have unclear voice. For giving answer activity, some students give answer incompletely because students aren't used to express their own opinion, which it means there are still many students who don't have self confidence. This condition is supported by Johnson (2008) that giving answer is one of step to become critical thinker, the reason can be an explanation about a case, define a general idea, or taking the other things, and good answer is gotten based on relevant information. For doing discussion activity, students in group have been active in doing discussion although not all students take a role in this case because some students still doing discussion only with their near friends.

Student activity in second meeting starts to have a change to a better way than first meeting. Although still in minimum category, the increase of student activity in this meeting prove that cooperative learning model and strategy giving question and getting answer can increase student activity.

**Table 2. Student absorption in cycle I after implementing cooperative learning model by strategy GQGA from value of post test and daily test student class X<sub>2</sub> SMAN 1 Benai academic year 2011/2012**

No	% Interval	Category	Post Test in Meeting		Daily Test I
			I	II	
			Quantity (%)	Quantity (%)	
1	90-100	Excellent	-	-	-

2	80-89	Very good	6 (16,67)	12 (33,33)	20 (55,56)
3	70-79	Good enough	18 (50)	17 (47,22)	12 (33,33)
4	<70	Less than good	12 (33,33)	7 (19,45)	4 (11,11)
<b>Quantity</b>			36 (100)	36 (100)	36 (100)
<b>Average</b>			69,55	74,03	78,94
<b>Category</b>			Less than good	Good enough	Good enough

Based on Table 2, we can see that student absorption in cycle I after implementing cooperative learning model by strategy GQGA be increased in every meetings. In first meeting the average of student absorption is 69,55, it means less than good category, it is increased in second meeting for 74,03 or enough category. The average value of daily test in cycle I is 78,94 (enough). In first meeting, value of student absorption is 69,55 (less than good), it's caused by student for implementing cooperative learning model with strategy GQGA still in adaptation phase, student don't understand and not used to be in cooperative learning model and strategy GQGA which ask student to make a question about topic which they don't understand and make answer which they really understand.

In second meeting, value of student absorption starts to be increased which have value average 74,03 (good enough). The increasing be happened caused students have understood cooperative learning model and strategy GQGA.

Student learning outcomes from daily test value in cycle I have been increased if comparing with daily test value before using cooperative learning model and strategy GQGA that is 63,33 in less than good category. By implementing cooperative learning model and strategy GQGA, comprehension of study can be increased and student can be more active in studying process, it caused by studying strategy which student accepted is different than before. This increasing is caused by student have known the topic which is asked and have understood the topic which is known, the students also get opportunity to doing discussion each other so that student looks be serious in group discussion.

**Table 3. The Analysis of Student Learning Completeness after Implementing Cooperative Learning Model with Strategy GQGA in Class X<sub>2</sub> SMAN 1 Benai Academic Year 2011/2012**

<b>Learning Completeness</b>	<b>Quantity (%)</b>
Complete	33 (91,67)
Incomplete	3 (8,33)

Based on Table 3, we can see in daily test I cycle I from 36 students, 32 students (91,67%) are complete (excellent) and 3 students (8,33%) are incomplete (less than good). 3 students who are incomplete in daily test I is caused by they are not serious in study. It's also

caused by they aren't confidence in doing test and they still try to cheat so that they can be failed. For students who are failed, getting task or remedial to improve their score.

The completeness which is gotten by 33 students in cycle I, is caused by learning model and strategy which is used by student during learning process. This is because learning strategy GQGA asks students to be active and responsibility in studying, so that it will increase activity and student learning outcomes.

**Table 4. Data Appreciation of Groups through Implementing Cooperative Learning Model by Strategy GQGA in Cycle I**

Group	Cycle I	
	Development of Groups	Appreciation of Groups
I	23	Great
II	26	Excellent
III	26	Excellent
IV	22	Great
V	26	Excellent
VI	22	Great
VII	26	Excellent

Based on Table above, can be seen that score for development of individual in Cycle I has been classified as good, 4 of 7 groups get excellent predicate that is group II, III, V and VII while others get great predicate. The value of development which is gotten by students during learning process indicate cooperative learning model and strategy GQGA can increase learning outcomes for themselves and their groups.

The groups which get excellent predicate are gotten pencil as a prize. This appreciation aims to motivate each member of groups to be more active and spirit in studying. Furthermore, this also aims to motivate other groups order can increase achievement of studying.

**Table 5. The Average of Percentage Student Activity Each Indicator in Cycle II by Implementing Cooperative Learning Model and Strategy GQGA**

Indicator	Student Activity in Every Meetings			Average (%)	Category
	I (%)	II (%)	III (%)		
Reading text book	80,56	81,94	82,64	81,77	Good
Finishing student work sheet	75,69	80,56	81,25	79,17	Good enough
Asking	78,47	78,47	81,25	80	Good
Giving answer	80,55	81,25	82,64	81,48	Good
Doing group discussion	81,25	84,75	86,11	84,04	Good
<b>Number of Students</b>	36	36	36		

<b>% Activity</b>	79,31	82	82,78	81,28	Good
<b>Category</b>	Good enough	Good	Good	Good	

Based on table above can be seen that student activity in cycle II from first meeting, the average of percentage student activity is 79,31% (good enough), second meeting is 82% in good category, then in third meeting there is increasing with percentage of student activity is 82,78% (good category).

If comparing with cycle I, student activity in cycle II has been increased. In cycle I the average of student activity is 74,87 (good enough), while in cycle II is 81,28% (good). The increasing of student activity in cycle II through more understanding and interesting of student in implementing cooperative learning model by giving question and getting answer, order the student can be more motivated in studying and they have prepared themselves before studying so that student can know the topic which is taught deeply and student can be more know the topic which they don't understand and topic which they really know, order the student can give question which they don't understand and give answer which they understand easily to be presented in front of the class or presented to other groups. The increasing also can happen because the student is involved in learning process, so that there is interaction between student and student also between student and teacher.

**Table 6. Student Absorption in Cycle II after Implementing Cooperative Learning Model by Strategy GQGA from Post Test and Daily Test Score Student in Class X<sub>2</sub> SMAN 1 Benai Academic Year 2011/2012**

Score	Category	Meeting			
		Post Test I Quantity (%)	Post Test II Quantity (%)	Post Test III Quantity (%)	Daily Test II (%)
90-100	Excellent	6 (16,67)	6 (16,67)	10 (27,78)	5 (13,89)
80-89	Good	21 (58,33)	21 (58,33)	21 (58,33)	22 (61,11)
70-79	Good enough	9 (25)	9 (25)	5 (13,89)	8 (22,22)
<70	Less than good	0 (0)	0 (0)	0 (0)	1 (2,78)
<b>Number of Students</b>		36 (100)	36 (100)	36 (100)	36 (100)
<b>Average</b>		82,22	82,36	83,33	80,42
<b>Category</b>		Good	Good	Good	Good

Based on table above can be seen student absorption trough post test and daily test in cycle II in topic the plan. The average of post test score in first meeting is 82,22 (good), increasing in second meeting be 82,36 (good) and in third meeting also is increased be 83,33 (good). Student absorption can be seen from the average of daily test score is 80,42 (good).

Based on daily test in cycle II by implementing cooperative learning model and strategy GQGA be more increased in 80,43% (good) than daily test I score cycle I in 78,94% (good enough). So, can be concluded that learning process is good. And this increasing shows that by implementing cooperative learning model and strategy giving question and getting answer, the ability of student to understand the topic is increased and student also can be more active order student learning outcomes be better.



**Table 7. The Analysis of Student Learning Completeness after Implementing Cooperative Learning Model and Strategy GQGA in Class X<sub>2</sub> SMAN 1 Benai Academic Year 2011/2012**

Learning Completeness	Quantity (%)
Complete	35 (97,22)
Uncomplete	1 (2,78)

Based on table above can be seen that in daily test 2 cycle II be increased that's 35 students (97,22%) are complete and 1 student (2,78%) is uncompleted but if comparing with daily test I cycle I, 33 students are complete (91,67%) and 3 students are uncompleted (8,33%).

The uncompleted student is caused by team work of the students still be less, in doing discussion with other students also seem not have spirit, also activity and student ability still be less so that the score of daily test I is unsatisfied. Student learning completeness also is affected by the involving of students during learning process. The increasing of student learning completeness is depend on student ability in understanding the topic which is given by teacher also student ability to maximize potential in studying, thinking and creating. It caused by students have been could to follow the steps of cooperative learning model and strategy GQGA, which this strategy use card to write the question about the topics which student have not understood and get the answer about the topic which student understand to be presented for other groups. It can affect student learning outcomes because there is an activated in studying, so that the student understands with topic which is learned.

**Table 8. The Average of Group Appreciation Based on Daily Test II Score in Class X<sub>2</sub> SMAN 1 Benai Academic Year 2011/2012**

Group	Cycle II	
	The Average of Group Development	Group Achievement
1	18	Great
2	18	Great
3	14	Great
4	18	Great
5	16	Great
6	16	Great
7	18	Great

Based on Table 8 above can be seen that score of individual development in cycle II seems that there is none group which get excellent predicate for score of development from 7 groups if comparing in cycle I, 4 of 7 groups get excellent predicate and 3 groups get great predicate. Decreasing appreciation for excellent group is caused by in cycle II basic score is looked from daily test in cycle I, and more than a half score of student daily test in cycle I is higher so that the deviation of score is not too high with cycle II, order the increasing is also only slightly, so the appreciation for excellent group is none.

## Implication

Strategy giving question and getting answer can be implemented in biology learning in SMA because it can increase student activity in learning process and also can increase the learning outcomes.

## Conclusion

Based on research finding, so can be concluded that by implementing cooperative learning model and strategy giving question and getting answer in learning process can increase activity and learning outcomes of biology student class X<sub>2</sub> SMAN 1 Benai academic year 2011/2012. It can be seen in:

1. The average of student activity in learning process be increased from 74,87% (good enough) in cycle I to 81,28% (good) in cycle II.
2. The average of student absorption be increased from 78,94 (good enough) in cycle I to 80,49 (good) in cycle II.
3. Student learning completeness in cycle I be increased from 91,67% to 97,22% in cycle II.
4. Group appreciation in cycle I is 4 groups get excellent predicate and 3 groups get great predicate. In cycle II, all groups get great predicate.

## References

- Anonimus. 2011. Penerapan Metode Giving Questions and Getting Answer. *Online*. Retrieved , from <http://sejarahklasik.blogspot.com/2010/03/penerapan-metode-giving-questions-and.html>
- Nasution, T. (1995). *Diktat dan Azas-azas Mengajar*. Bandung: Sinar Baru
- Sadiman, A. S. (2002). *Media Pendidikan*. Jakarta: PT. Raja Grafindo Persada
- Slameto. (2003). *Belajar dan Faktor-faktor yang Mempengaruhinya*. Jakarta: Rhineka Cipta
- Slavin, E. R. Translating by Lita. (2008). *Cooperative Learning (Teori, Riset dan Praktek)*. Bandung: Nusamedia
- Silberman, M. L. Translating by Raisul, M. (2009). *Active Learning 101 Cara Belajar Siswa Aktif*. Bandung: Nusamedia
- Sudjana. (1991). *Media Pengajaran*. Bandung: Sinar Baru
- Sumiati and Asra. (2007). *Metode Pembelajaran*. Bandung: Wacana Prima
- Yasa, D. (2008). Aktivitas dan Prestasi Belajar. *Online*. Retrieved October 29, 2011, from <http://ipotes.wordpress.com/2008/05/24/aktivitas-dan-prestasi-belajar/24/02/1>
- Zaini, H., Muthe, B., and Aryani, S. A. (2010). *Strategi*

