



APPLICATION OF APTITUDE TREATMENT INTERACTION (ATI) LEARNING MODEL TO INCREASE MOTIVATION TO LEARN BIOLOGY OF GRADE XI IPA 1 STUDENTS OF PUBLIC HIGH SCHOOL 1 WEST TASIFETO

Paulus Taek

Nusa Cendana University

paulustaeksonbai60@gmail.com

Abstract

This research is a qualitative description research with the subjects being students of grade XI Science 1 SMA Negeri 1 Tasifeto Barat for the 2017/2018 academic year. The results showed that the application of the ATI learning model in general can increase students' motivation to learn biology. This is known from ATI learning tools, ATI learning observation sheets and the results of filling out learning motivation questionnaires. Based on the results of the study, it is known that the ATI learning model applied in class XI Science 1 SMA Negeri 1 Tasifeto Barat is quite effective in increasing motivation in learning Biology. This is indicated by students starting to be diligent in facing biology tasks, tenacious in facing difficulties learning biology, showing interest in various problems, maintaining opinions and not easily letting go of something they believe in, and independent in working or studying biology.

Keywords: ATI Learning Model, Learning Motivation

INTRODUCTION

Education is one of the important needs forever active country in a country. For this reason, efforts need to be made so that the quality of education continues to be improved, one of the efforts to improve the quality of education in schools is to improve and develop the teaching and learning process that occurs in schools.

The basis of the teaching-learning process is the process of communication or delivery of information from information sources through certain media to recipients of information. Learning can bring about behavioral changes in humans obtained through effort. So learning will bring a change to the individuals who learn. Change is not only related to the addition of knowledge, but also in the form of skills, skills, attitudes, understanding, self-esteem, interests, disposition, and self-adjustment. Learning is one activity that requires motivation.

Motivation is a process to activate the power in a person to do something into an action or behavior to meet needs and achieve goals, or the state and readiness in an individual who is mendorong, his behavior to do something in achieving a certain goal. But this motivation does not always arise, so it seems that there are students who are excited, some are lazy.

Teachers are one of the components directly involved in carrying out the learning process so that teachers are required to play their role in order to create quality and potential human resources. In addition, teachers are also required to be able to place themselves as professional teachers in accordance with their expertise.

Biology as the basis of science and is one of the subjects in schools and the National Final Examination (UAN). In many cases it has always been a subject that many parties complain about, especially students, as one of the difficult and difficult subjects. It is said to be difficult and difficult because biology deals with abstract numbers. Most biology teachers in the learning process tend to use conventional methods, namely classical, lectures, and there are some teachers who have used creative and innovative learning models but have not used learning models that are in accordance with variations in the abilities of students, so that in the learning process the teacher's attention is still lacking on differences in thinking skills and learning needs of each student.

In general, the process of education and teaching in schools today is still running classically, meaning that a teacher in a classroom faces a number of students between 20-40 people at the same time delivering the same learning material. In fact, it is not uncommon for teachers to use the same

method for all students. In classical teaching like this, teachers assume that all students in one class have the same *ability*, readiness and maturity and learning speed.

According to Bloom (Nurdin, 2005), students in the classroom are classified into three groups consisting of high, medium and low ability learners. In learning activities, these three groups have differences in receiving and understanding lessons. Students who have high ability with just one delivery already understand, while students who have medium ability with two new deliveries can receive lessons, while students who have low ability with two deliveries are not necessarily adequate, they must be given guidance and motivation in learning.

The results of Biology education research conducted by Chotimah (Lopo, 2013) show the fact that:

1. The most dominant method used in learning biology is lectures or can be referred to as delivery models.
2. Demonstrations and experiments are learning methods that are rarely used in Biology activities.
3. Printed books are the source and core of Biology learning so that teachers tend to pursue the target of conveying the entire contents of the book.
4. Learners' reading interest is low.
5. Students who actively ask or answer questions from teachers or friends are still very low.

Based on experience while teaching at SMA Negeri 1 Tasifeto Barat which is in grade XI Science 1 students, it was found that:

1. Students are not diligent in facing Biology tasks, only 13.3% of students are diligent in facing Biology tasks.

This can be seen from:

- a. Very low frequency of learner learning
- b. Want to experience further the material that is learned is very low
2. Students are not tenacious in facing difficulties, only 20% are tenacious when facing difficulties.

This can be seen from:

- a. Only 2-6 learners often ask friends or teachers when having learning difficulties,
- b. Only 2-4 learners come to consult with the teacher when experiencing difficulties.
3. In showing interest in various problems, learners are very low. This can be seen from:
 - a. Only 13% of students dare to express their opinions.
 - b. Only 6.6% of students are able to do challenging Biology problems.
 - c. Only 16.6% of students are able to solve varied biology problems.
4. Students cannot defend their opinions, only 13% of students are able to defend their opinions.

This is seen from:

- a. When appointed to answer, learners give answers hesitantly,
- b. Unable to defend an opinion when asked back,
- c. Quickly swayed by friends' answers.
5. The independence and ability of students to solve Biology problems is very low, only 13% are able to solve questions from 30 students in one class. This is seen from:
 - a. Students cannot solve the problem until they get the final result;
 - b. There are learners who don't try to do it at all;
 - c. There are students who work to completion, but the process is not right so that the final result is not correct.

6. The existing learning facilities in schools are inadequate so that they do not support the motivation to learn students. This can be seen from the textbooks in the school library are very lacking, there are only a few Biology books.

Based on the data above, it is known that Biology learning in class XI Science 1 has a problem, namely the lack of motivation to learn students so that it has an impact on low learning outcomes.

The root cause of the above problem is several factors. The first factor is less actively involved learners in the learning process. Students act more as passive recipients of information, not as subjects who carry out learning activities. Second, the learning methods and models used during the learning process in the classroom have not been able to arouse student learning motivation. The learning model used in the classroom is still unable to appreciate and accommodate individual differences in students

so that it has an impact on low learning motivation. In general, teachers still apply a direct learning model where students in learning only hear and record what is conveyed by the teacher.

As a result of teaching that uses this direct learning model, teachers often do not care about individual differences in each student. Students who are quick to grasp teaching (clever) will be hampered by their progress by other friends because they classmates must progress together. Conversely, students who are slow (less clever) seem to be forced to walk quickly following a lesson material, a lesson that he has not mastered yesterday, the teacher has stepped up to provide new material. Not to mention that every student has differences in their physical condition. This leads to ineffective and unpleasant learning.

Based on these problems, it is necessary to develop an action that can increase student motivation and a good understanding of concepts in the Biology learning process. This can be done with learning that can stimulate student activeness in learning while increasing student learning motivation. For a teacher, teaching Biology is not enough just to rely on mastering the material. The right learning strategy and model are needed so that students feel happy and excited about learning Biology, so that students are motivated to learn and the completeness of learning Biology can be achieved. The solution to overcome these problems is the application of learning models that can help students in increasing motivation to learn Biology which is considered difficult according to the abilities of each student.

Nurdin (Rachnavia, 2013), suggests a learning model that pays attention to the diversity of individual students based on their abilities according to the above problems is the ATI learning model. This model is a learning model that is oriented to student activities, namely learning actions adjusted to the initial abilities of students. This method is useful for fostering student motivation in Biology subjects, thereby helping to increase student learning motivation and the quality of student mastery of Biology lessons which have been considered difficult and difficult for students. The essence of managing Biology learning using the ATI learning model is to prioritize the active role of students, and teachers only act as designers, facilitators and guides of the learning process. Here students learn and interact according to their respective abilities, so that the learning needs of each child will be met.

The ATI learning model provides advantages in improving the learning atmosphere in the classroom, especially in classes where the abilities of students vary. This model provides opportunities for teachers to develop their professional performance by using a variety of teaching methods in three forms of treatment. First, *self-learning treatment* that uses modules for *high-ability* students. Second, *regular teaching* treatment for students with moderate initial ability and third, special treatment in the form of *re-teaching* or tutorials for students with low ability. This model is one answer to the demands that require learning services that can appreciate the difference in the ability (*aptitude*) of students because it has several advantages, including:

1. Students can progress according to their respective abilities fully and precisely,
2. Fostering pleasant personal relationships between teachers and learners,
3. Reduce barriers and prevent elimination of students who are classified as slow (Nurdin, in Siyampriyati, 2011).

With the compatibility between the abilities of students and their way of learning, it is expected to increase student learning motivation in the teaching and learning process. This study aims to find out how to apply the ATI learning model so as to make students become active both physically and mentally in increasing the motivation to learn Biology students of grade XI Science 1 SMA Negeri 1 Tasifeto Barat.

RESEARCHMETHOD E

Place and Time of Research

This research was conducted at SMA Negeri 1 Tasifeto Barat for the 2017/2018 academic year. The time of the study is in September until it is completed.

Research Subjects

The subjects of this study were students of grade XI Science 1 SMA Negeri 1 Tasifeto Barat Academic Year 2017/2018 which in following biology subjects generally have problems, namely in the learning motivation of students who are still low.

Research Procedure

The research procedure used in this study is a type of *classroom action research*, so the procedure is carried out in the form of cycles. The implementation of actions in each cycle is carried out through the procedure:

1. Planning
2. Action Execution
3. Observation
4. Evaluation and
5. Reflection

The procedure of this research activity is planned to consist of 2 cycles. The cycle is stopped if the class condition is stable, in this case there is an increase in student motivation after learning using the ATI model. Each cycle is carried out based on the indicators to be achieved in each factor investigated.

Success Criteria

Learning is said to be successful and quality if all or at least most (75%) students are diligent in facing tasks, tenacious in facing difficulties in studying biology, that is, can ask or discuss things that have not been understood with friends or with teachers, show interest in various problems, namely dare to express opinions, like to do challenging questions and varied questions, can maintain opinions and it is not easy to let go of something that is believed actively both physically and mentally in the learning process (Mulyasa, in Sui, 2012). Research can be stopped if the average achievement of the measured indicators has reached the specified target, otherwise if each variable measured has not met the achievement target, the next cycle is continued to achieve the target that has been set.

RESULTS AND DISCUSSION

The results of each achievement of the indicators in the results of the learning motivation questionnaire are as follows:

1. Diligent in facing biological tasks, the achievement of the indicator is 58.7% and is categorized as low. This is because there are still many students who have not prepared / studied in advance the material to be taught, and students do not relearn biological material at home.
2. For tenacious indicators in the face of learning difficulties, biology has an indicator achievement of 77.6% and is categorized as moderate. This is because there are still many students who have not asked friends and teachers when experiencing difficulties in learning biology, rarely invite themes to discuss material that has not been understood, students are less confident that they can complete all the tasks given, and there are students who are less diligent in learning biology even though the material is difficult to understand.
3. For indicators showing interest in various problems, the indicator achievement is 63.3% and is categorized as medium. This is because there are students who rarely look for questions from other biology books and solve them, are less happy when given varied questions to do, students rarely give responses to the results of friends' presentations, do not agree if told by teachers to solve problems on the board, do not dare to present the results of homework or assignments in front of friends, do not feel challenged to solve problems that are considered difficult by friends.
4. For indicators, maintaining opinions and not easily letting go of something that is believed to have an indicator achievement of 72% and is categorized as moderate. This is because there are students

who feel normal when they do not achieve, feel biased if the test results are bad, rarely try to get a test score of more than 80, rarely willing to explain if there are friends who ask questions about biology material, rarely face criticism from friends, rarely express opinions in front of the class.

5. For independent indicators at work, it has an indicator achievement of 66% and is categorized as medium. This is because students are less looking for other sources to complete biology assignments, not trying to complete homework according to their abilities.

In filling out the questionnaire, students' motivation to learn biology in cycle II began to experience a significant increase. This is because students like the ATI learning model. The advantage of the ATI learning model is that students are given *treatment according* to the aptitude of each student so that this can affect the learning motivation of each student, and students' understanding of the material learned better.

The discussion of each indicator achievement in the results of the learning motivation questionnaire is as follows:

1. Diligent in facing biology tasks the achievement of the indicator is 94.67% and is categorized as high, this is because students prepare / learn in advance the material to be taught, and students relearn biological material at home.
2. For tenacious indicators in the face of biological learning difficulties, it has an indicator achievement of 96% and is categorized as high. This is because many students ask friends and teachers when they have difficulty learning biology, always invite themes to discuss material that has not been understood, students are confident that they can complete all the tasks given, and students are diligent in learning physical even though the material is difficult to understand.
3. For indicators showing interest in various problems, the indicator achievement is 94% and is categorized as high. This is because students start looking for problems from other biology books and solve them, happy when given varied questions to do, students give responses to the results of friends' presentations, happy when told to solve problems on the board, dare to present homework results or assignments in front of friends, less challenged to solve problems that are considered difficult by friends.
4. For indicators, maintaining opinions and not easily letting go of something that is believed to have an indicator achievement of 97.3% and is categorized as high. This is because students feel dissatisfied when they do not achieve, feel dissatisfied if the test results are bad, always try to get a test score of more than 80, are willing to explain if there are friends who ask questions about biology material, dare to face criticism from friends, always express opinions in front of the class.
5. For independent indicators at work, it has an indicator achievement of 88% and is categorized as continuous. This is because students are always looking for other sources to complete biology assignments, always trying to complete homework according to their abilities.

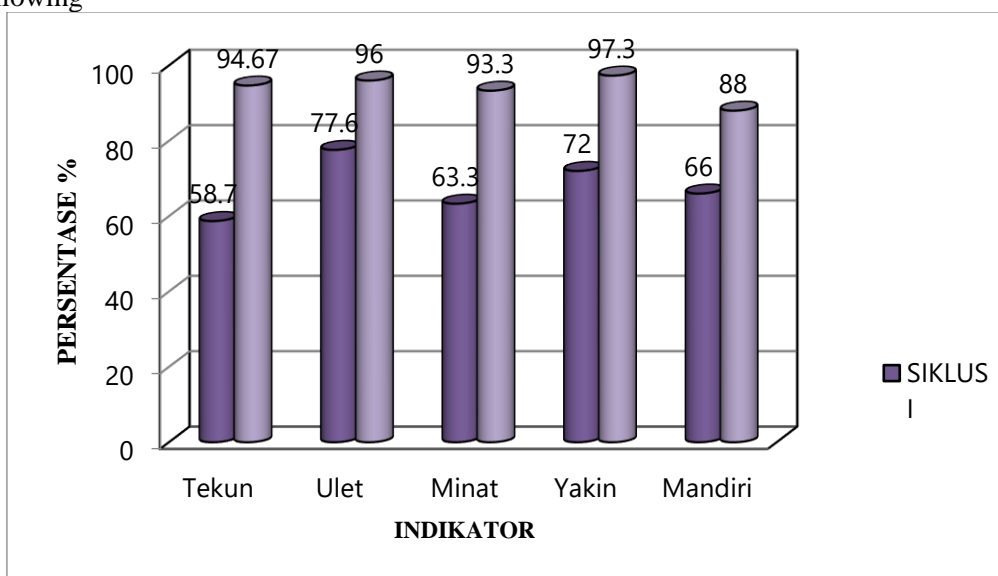
Motivation to learn biology is the overall psychic driving force within students that causes learning activities, ensures the continuity of learning activities and provides direction for learning activities to achieve a goal. To increase motivation to learn biology, a learning model must be used that is able to make students encouraged to learn biology.

In this study, the ATI learning model was used, because it is a model that contains a number of learning strategies (*treatment*) that can be used for students according to differences in their *aptitude*. Through this model learners can learn and interact according to their respective abilities fully and appropriately, fostering a pleasant personal relationship between teacher and learner, so that the needs of each child are met. This ATI learning model treats students according to the ability level of each student. For groups that have high *aptitude*, the *treatment* given is *self-learning* using modules (BAS, relevant reference books) and LDS to do. The selection of independent learning through modules is based on the assumption that students will be able to learn the material and complete tasks according to their abilities.

For groups that have moderate *aptitude*, the *treatment* given is *regular teaching*, researchers give LDS to each group to discuss thinking about their respective answers, after discussing each group presenting the results of their discussion. For groups that have low *aptitude*, the *treatment* given is *regular teaching* + tutorial, researchers provide LDS to discuss finding the answer, in working on LDS researchers provide guidance to each student and researchers provide additional learning hours to repeat the material that has been learned, assuming that students are slow in capturing and

Understand the lesson therefore the material needs to be given gradually and repeated until students understand the material correctly. This learning is carried out outside of class hours, which is held in the afternoon.

Based on the data from the study, which is presented in the table of achievement indicators of student biology learning motivation in the questionnaire, it can be seen that in cycle I, only one indicator was achieved, namely indicator 2 with a percentage of 77.6%, while indicators 1, 3, 4, and 5 have not been achieved, namely with a percentage of 58.7%, 63.3%, 72%, and 66%, respectively. In cycle II, researchers conduct learning by applying the same learning model but pay more attention to several stages of learning that have not been maximally implemented in cycle I. In cycle II, the percentage of achievement of learning motivation indicators is in accordance with success criteria. The achievement of learning motivation indicators are, indicator I (perseverance in facing biology tasks) 94.67%, indicator II (tenacity in facing biology learning difficulties) 96%, indicator III (showing interest in various problems) 94%, indicator IV (maintaining opinions and not easily letting go of something that is believed) 97.3%, indicator V (independent in working) 88%. Data on the achievement of student motivation indicators in cycle I and cycle II can be seen in Figure. 2 The following



Picture. 2 Achievement Results of Indicators on Student Learning Motivation with the ATI Learning Model Every Cycle

Based on the image. 2, the application of the *Aptitude Treatment Interaction* (ATI) Learning model can increase student motivation because the achievement of learning motivation indicators has increased from cycle I to cycle II. This happens because learning activities using the *Aptitude Treatment Interaction* (ATI) learning model, students can be more active where each student is applied (*treatment*) according to their respective abilities (*aptitude*) so that in discussion activities, students convey ideas to each other without feeling embarrassed or inferior because students have the ability (*aptitude*) the same. Learning activities like this make students very eager to compete in learning biology to achieve good achievements.

CONCLUSION

Based on the results of the implementation of actions from cycle I and cycle II in the initial learning process, student motivation is lacking, but after applying the ATI learning model, student learning motivation increases. This can be seen by the increase in observation and the results of filling out learning motivation questionnaires achieved by students at the end of each cycle. Learning Biology using the ATI learning model can increase the motivation to learn Biology students grade XI Science 5 SMA Negeri 1 Tasifeto Barat for the 2017/2018 academic year. This is because students play an active role in the learning process in class so that there is a good interaction or communication between teachers and students as well as between students.

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