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IMPLEMENTATION OF MURDER TYPE COOPERATIVE LEARNING MODEL IN BIOLOGY LEARNING

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ABSTRAK

Tujuan penelitian untuk mengetahui hasil belajar peserta didik dengan melakukan pembelajaran menggunakan model pembelajaran kooperatif tipe *MURDER* kelas VIII MTsN Sijunjung. Jenis penelitian adalah eksperimen semu dengan rancangan penelitian yang digunakan yaitu *randomized control group posttest only design*. Instrumen dalam yang digunakan pada penelitian ini adalah tes hasil belajar, dengan menyusun tes, uji validasi, uji coba dan analisis butir soal. Teknik analisis data yaitu uji normalitas, uji homogenitas dan uji hipotesis. Hasil penelitian menunujukkan adanya perbedaan rata-rata nilai, simpangan baku dan varians kelas eksperimen dan kelas kontrol. Hasil yang didapat memperlihatkan hipotesis penelitian dapat diterima. Kesimpulan, hasil belajar di kelas eksperimen dengan model pembelajaran kooperatif tipe *MURDER* lebih baik dari kelas kontrol (biasa).

Kata kunci: Pembelajaran kooperatif, MURDER, pembelajaran biologi

ABSTRACT

The purpose of this study was to determine the learning outcomes of students by applying the MURDER type cooperative learning model at MTsN Sijunjung. This type of research is a quasi-experimental research with a randomized control group design post-test only design. The instrument used was a test of learning outcomes, by compiling tests, validation tests, trials, and item analysis. Data analysis techniques are the normality tests, homogeneity tests, and hypothesis tests. The results showed differences in the average value, standard deviation, and variance of the experimental class and the control class. The results showed that the research hypothesis was accepted. In conclusion, the learning outcomes in the experimental class with the MURDER type cooperative learning model are better than the control class (normal).

Keywords: Cooperative learning, MURDER, biology learning

INTRODUCTION

An important component in improving human quality is education. Thus the quality of education must be improved. Efforts to improve quality can be seen from the reforms made by the government, namely changes to the curriculum, changes to the pattern of strategies in delivering material, with the aim of increasing the quantity and quality of teaching staff and inseparable from facilities and infrastructure in the form of tools for learning. In the education system, the activity carried out is learning process.

Learning is a complex process experienced by humans during their lives [1]. Learning is an effort to optimize learning activities, one part of learning is learning biology. Biology learning, introduces living things and their environment to students [2]. In the sense of learning, biology indirectly introduces real life to students. Biology learning discusses human curiosity about self, survival and interaction with the environment [3]. Biology learning includes studies that discuss life other than psychology and sociology. However, in addition to discussing nature, biology also discusses astrology, earth science, physics and chemistry [4]. The teacher hopes that students can learn about themselves and what is in their natural surroundings through learning biology. these learning requires concepts that taught by the teacher. Concepts are very important to be known by students to be able to learn meaningfully and apply them to the environment.

Lack of teacher's ability to apply appropriate strategies in learning biology or to provide variations in learning according to the material to be taught makes a saturated atmosphere in learning and makes biology subjects as rote. In essence, this subject is more of an application in life. This case is should be a concern for biology teachers.

This research was motivated by students who study individually and use conventional strategies that made students feel bored, resulting in low student learning outcomes in biology learning class VIII MTsN Sijunjung. The conditions found in the field were the low results obtained by students

with the results of more than 50% of students not reaching the KKM. one of the solutions is implementation of cooperative learning model, because with the cooperative carried out by the teacher, it is able to help students understand the concept of learning. One of the types of cooperative learning is MURDER which is able to solve the problem, can increase cooperation in learning, and make learning more fun. This strategy consists of several components, namely Mood, Understand, Recall, Digest, Expand, and Murder. The purpose of this study was to determine the results obtained by students in learning biology by applying the type cooperative learning model MURDER in class VIII of MTsNSijunjung in the 2019-2020 school year.

MATERIALS AND METHODS

Type of Research

Research type is a quasi-experimental research design, namely *randomized control group posttest only design* [5].

Population and Research Sample

The population is all students in class VIII MTsN Sijunjung registered with the number of classes, namely 4 classes. As for the sample, the experimental class in this study is class $VIII_4$ and the control class in this study is class $VIII_2$. This was obtained by using *simple random sampling*.

Research Procedure

In this study consisted of three steps, namely preparation, implementation and completion. Activities in preparation were (a). Review the research school; (b). Consultation with the biology teacher concerned; (c) The selection of research samples, namely the selection for the experimental class and the selection for the control class; (d). Determination of research schedule; (e). Analyzing the material used in biology learning at MTsN class VIII in the second semester; (f). Planning the teaching and learning implementation process by applying thecooperative model *MURDER type;* (g). Designing a Learning Implementation Plan (RPP) from the material being taught; (h). Carry out test questions. At the implementation stage, several activities

were carried out in the experimental class and the control class. For the experimental class, the learning is carried out by applying the type cooperative model *MURDER*. The core steps of the activities were (1) *Mood* (creating learning conditions); (2) *Understand* (interpretation of the material); (3) *Recall* (imitation with easy to understand language); (4) *Digest* (a review of the material before it is presented to other students); (5) *Expand* (students share the information they know about the subject matter); (6) *Review* (see the extent of understanding of the material).

Research Instruments The

Procedures for developing test instruments were (1) compiling tests; (2) carry out test trials; (3) perform item analysis. The technique used to analyze the data was the t test formula [6]. The t test was conducted for students' learning hypotheses with the type cooperative model that was *MURDER* more successful than what was obtained by students in the conventional learning process. Previously, data analysis was in the form of normality test using the Liliefors test and homogeneity test using the f test.

RESULTS AND DISCUSSION

Theresearch was conducted at the pre-learning stage and also during the learning implementation. Activities that at the time of pre-implementation of learning in the form of normality test, homogeneity test, population average similarity test. The three stages used for data from the population before conducting research at the implementation stage. At the pre-implementation stage, the normality and homogeneity test data of the population were normally distributed. for the analysis of data on the average class population using ANOVA test formula one direction, then the result that the population has in common is average with $f < f\ (k - n - k)\ _{\alpha}1$, or $0.0089 < 2.60$.

After the above test was carried out, the sample class was determined randomly so that the experimental class of this study was class $VIII_4$ and the control class was class $VIII_2$. Prior to research activities, the activities carried out were selecting substances and preparing research instruments. The

substance taken is the material of the circulatory system. The research instrument that the researcher prepared was in the form of an essay test, this test was first validated by a Biology Lecturer, namely Mr. AidhyaIrhas Putra, S.Si., MP and a study teacher at MTsNSijunjung namely Mrs. Nailal Huda and Supriati. After being validated further with a trial first in class VIII.1 MTsNSijunjung and analyzed the results.

Activities at the implementation stage were carried out for 5 meetings, 4 meetings for material delivery by applying the cooperative learning model *MURDER* in the experimental class and conventional learning models with lectures in the control class and at the last meeting to test the final results of the treatment for both classes. The results obtained in this study of average value, standard deviation, variance grade sample and the thoroughness of the sample class is written in Table 1.

Table 1.

Kelas		N	S^2	S	X Min	X Max	%Tuntas	% T.Tuntas
Eksperimen	85,71	28	222,66	14,92	42	100	78,57%	21,43
Kontrol	74,4	30	341,77	18,49	10	100	46,67%	53,33%

Based on Table 1, it is found that there is a variation of the average value, standard deviation and variance between the experimental class and the control class. From the description above, it can be seen that the average value is higher for the experimental class than the average value for the control class. The research data obtained at the implementation stage were also tested for normality and homogeneity, and the data obtained were normally distributed from both samples and had a homogeneous variance, the next step was to test the hypothesis. For data hypothesis is seen in Table 2

Table 2. Data Test Results Class Samples Hypothesis

Kelas	$\bar{x}$	N	S	t_{hitung}	t_{α}

Eksperimen	85,71	28	222,66	2,55	1,645
Kontrol	74,4	30	341,766		

Based on Table 2, the hypothesis in this study is acceptable. Because from the data obtained the value of t_{count}>t_{table}. Where if the value of $t_{arithmetic}$that the author obtained is higher than t_{table}, therefore the research hypothesis can be accepted [7]. It was concluded that the data in the form of learning outcomes using thetype cooperative model was *MURDER* better than the learning outcomes obtained in conventional learning. This proves that in learning students are active in expressing opinions, actively asking questions and also students helping each other and discussing in groups, and students are happy in receiving lessons, making them able to appreciate and listen to the delivery of material in learning [8].

Conventional learning with the characteristics of conventional learning students learn individually, students receive information passively, learning does not pay attention to the experiences gained by students, test results are not an assessment of the learning process but from the final results [9]. In the research that has been carried out in the form of a series of activities starting from the delivery of information related to the material and followed by giving questions by the teacher.

Learning is done by applying the MURDER type cooperative model to improve student learning outcomes. The results obtained prove that the research that the researchers conducted at MTsNSijunjung can improve students' cognitive outcomes by applying thetype of cooperative learning model *MURDER* rather than the conventional one. From the results of previous research on the use of thetype cooperative model *MURDER* can improve students' cognitive outcomes. This research is in sync with that conducted by Fadhilah and Asani who use theCooperative Model *Type* MURDER Learning *Outcomes* onon ICT materials [10] and also research using MURDER in Biology learning [11]. Where the results obtained by this learning model can improve students' cognitive learning

outcomes compared to results with conventional learning.

According to John R Hayes, thelearning strategy *MURDER* found in the book "*the complete problem solver*" is "*The acronym MURDER stands for the six parts of Dansereau et al.'s (1979) study system: Mood, Understand, Recall, Digest, Expand, and Review*": and also narrated by Sari (2014), where he states that the stages of thetype cooperative model *MURDER* are, firstly *Mood is* related to the situation of the heart, secondly *understand* is related to understanding which can be carried out by looking for information and understanding it and giving a sign. in parts that are not yet understood. *Third, recall is* related to repetition, *fourth, digest is* related to study, *fifth, expand is* related

to development, and the *sixth* is *review* which is related to follow-up learning [12].

1. Mood (Heart Situation)

A good heart situation in learning can be seen from the enthusiasm that is had when learning takes place, so that it can concentrate in the learning process and achieve maximum results [13].

The situation of the heart can be seen in a person in a short time or a few days. We can't predict moods and even occur with unexpected events, even mood situations can have an impact on activities in daily life and ways of thinking and interacting. The characteristics of the *mood. mood*/situation are as follows:

1) The causes are often standard.
2) Takes a long time (hours or days)
3) Consists of two main dimensions of positive impact and negative impact)
4) Indicated by an unclear expression
5) Is the result of thinking ability [14].

Moodcan affect a person in understanding the learning material received. With *mood* a positivewill make learning more effective. You do this by managing time, learning environment and learning attitudes that are tailored to the student's personality. To help make the learning process fun, it is necessary to do several things, such as arranging a conducive space and managing learning so that it can be lively and varied by using relevant learning

models, media and learning resources [15].

2. Understand

Understandin learning "*In using the system, you are encouraged when first reading a text to mark any parts of the text you don't understand*". That is, the step in learning using this system, students are encouraged when first reading a text to mark some parts of the text that are not understood. Understanding can be interpreted as mastering certain things with the mind, therefore learning must be understood in a meaningful way. Understanding requires the ability to capture the meaning or meaning of a concept. In learning, the element of understanding is needed by students. In understanding a material, you must fully concentrate on the material by really understanding each sentence and digesting the meaning of the sentence. Understanding is dynamic and must be *creative* because it can produce imagination and a calm mind and really understand the content of the learning material so that students can provide *answers* to questions posed by the teacher regarding learning materials [16].

3. *Recall*

Recallinlessonthis"*After initial reading, you are instructed to recall the information you have been reading about and to transform it using on.* That is, after reading, students are asked to repeat (back) the information they read so that what they read can become their own understanding.

Repetition in understanding a learning theory has been stated in the Qur'an, when Allah SWT told the prophet Adam to repeat the names of objects. It is proven that repetition can improve understanding in learning. *Recall* (repetition) means rearranging the information that has been received [17]. So with repetition, memory will increase.

4. *Digest*

Digestin learning this is "*step, you attend to the marked parts which are still unclear to you after further reading. In learning to use the system, you are trained to locate the problem a difficult word, sentence, or paragraph and to break it into parts, eg, you are trained to break a difficult word into its roots. If the meaning is still not clear, you are encouraged to look at the context of the difficulty to*

find related information, and if all else fails, to consult outside sources, eg, dictionaries, research librarians, etc." That is to say: at the "Digest" stage, in the learning process students are trained to locate problems, sentences or paragraphs and solve them into certain parts, to the success of a learning process. can be seen from the mastery of the subject matter by students. Material is knowledge that comes from subjects at school. Subjects are skills that have been arranged systematically and logically which are described n in the book and the contents of the book that must be mastered by students [18].

In mastering a material, it is not only guided by one book, because basically a material consists of various sources in obtaining knowledge [15].

5. *Expand*

Expandin this lesson, namely "*In this step, you ask and answer three kinds of questions"*. Meaning: in this step, students ask questions according to the purpose of developing the material in learning in their own words.

Development is aimed at seeing the cumulative results of learning outcomes, so that they can make changes in the behavior of students [16]. Changes in behavior student can include cognitive, affective and psychomotor aspects.

6. *Review The*

reviewin this is "*study Here, you review your errors with the intent of finding their causes and making appropriate changes in your study habits*". Meaning: here the teacher will observe again from the understanding of the students' material. The teacher guides in order to motivate students in providing conclusions from the concepts they have been able to go through the process of learning activities [20]. From the opinion of John R Hayes in the book *The Complete Problem Solver*, that with the 6 stages of implementing MURDER, it becomes a series of learning activities that can improve understanding of the material. This is because the process of delivering the material is done by applying the MURDER type of learning so that students are actively involved and work together.

Line Also in with the opinion, argues that what has been taught to others in a complex and perfect

manner, by involving activities such as seeing, hearing, doing and sharing with others, then the student will be an expert or really understand the subject matter obtained after learning. the learning process is implemented [21]. Along with active learning, MURDER type learning also implements cooperative learning, among student activities in learning such as producing positive interdependence interactions, student responsibility in learning, communication between students [22].

Learning with type cooperative learning *MURDER* also helps in achieving learning objectives and provides opportunities for students to carry out active learning in activities without depending on the teacher [23].

The activities carried out can improve understanding in learning. This was also found from the research that the researchers conducted at MTsN Sijunjung, where by doing the type learning model *MURDER* could increase achievement in learning, this was also done by a researcher named Nazyfah, 2019 stating that the application of the MURDER type cooperative learning model was able to improve cognitive and cognitive outcomes. This is also in line with research conducted by Noviana Salis in 2020 which applies the MURDER type learning model (*mood, understand, recall, digest, expand, review*) in learning Chinese. This proves an increase in student scores. The average value obtained from the class that was given an action in the form of a learning model was better than the class that was given conventional treatment. So it can be said that by implementing the type of cooperative learning model learning *MURDER* (*mood, understand, recall, digest, expand, review*) it is very good in understanding students and can also increase the percentage of students' cognitive outcomes for class X SMA Islam Athirah Makasar [24]. From several studies it is proven that the MURDER type cooperative model during the teaching and learning process can stimulate students' motivation in interpreting the material using their own words. Along with the research that the author has carried out, which shows the increase in cognitive outcomes on the material of the circulatory system

at MTsN Sijunjung with the type cooperative model, *MURDER* the learning outcomes of students with conventional learning types.

CONCLUSION

Conclusion

The implementation of the MURDER type of cooperative learning model can be a solution in education system, especially in the teaching and learning process. It is shown that students' learning outcomes are higher when using the MURDER type cooperative learning model compared to using the conventional model learning in class VIII at MTsN Sijunjung.

Suggestions

Researchers expect to (1). future researchers who apply MURDER cooperative learning are expected to be more effective and efficient in time management; (2). MTsN Sijunjung to be able to socialize the MURDER type cooperative learning model in biology learning as an alternative in answering problems on learning outcomes; (3). Biology teachers at MTsN Sijunjung are expected to be able to carry out learning with this model, because this learning model can improve student learning outcomes with material that has the same characteristics.

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