



***Effectiveness of Monopoly Learning Media on Ecological Topics
Class X SMA/MA***

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Abstract

This study aims to determine the effectiveness of monopoly learning media on ecological topics on student learning outcomes. This research is a quantitative research approach in the form of pre-experimental. The subjects of this study were all students of class X IPA. Collecting data in this study by providing pre-test and post-test sheets, namely before and after using monopoly learning media in learning activities. The results were obtained based on the calculation of the effectiveness test, namely before using the monopoly learning media (pre-test) the average value was 37.49 while after using the monopoly learning media (post-test) the average value was 77.83. The scores of the pre-test and post-test showed a difference in students' interest in learning. So it can be concluded that the monopoly learning media on ecological material for class X SMA/MA is considered effective because it is seen to increase student interest in learning and student learning outcomes.

Keywords: *Effectiveness; monopoly learning media; ecology.*

INTRODUCTION

In general, education is a series of planned efforts to influence society, groups, and individuals to carry out what is expected of educational actors (Notoatmojo, 2012). This shows that the education provided by the school is not only superficial but also directed. Therefore, teachers do various things to help students achieve their educational goals (Anwar, 2014). In addition, in education, it is important to have creativity and innovation so that students become enthusiastic, motivated, and interested in learning and participate in learning at school enthusiastically (Mardia, 2017).

The world is changing. Never before has it been clearer that humanity faces enormous challenges. This is by no means an exhaustive discussion, nor is it intended to impose the authors' point of view, but rather to stimulate debate and look ahead and enrich a much-needed aspect of education for sustainability. Regarding the learning process, activities are usually

carried out by educators and learners. Educators are teachers and learners are learners. In learning materials, there is a close relationship between learning behavior and teaching with the help of a teacher (Rusman, 2015). Self-directed learning is the active process in which students play an important role in managing their learning.

The biology learning process is often faced with material that involves a lot of concepts, facts, and principles that students must learn in biology lessons (Ulfa & Rozalina, 2017). Most natural (or biological) topics are complex compounds whose mechanical properties are usually excellent considering the weak components that compose them. Also, this is because many different organisms have evolved similar solutions to natural challenges (e.g. Environmental conditions, predation) (Adawiyah, 2021). It therefore requires a deep understanding of the material on the part of the students.

Therefore, ecological materials are difficult to teach by teachers and difficult to understand by students. For some students, learning biology is a little less interesting and a bit boring, students tend to have difficulty understanding. In the process of learning biology, each student must master the core material to apply what he learns. Learning is a process designed to create interaction between educators, students, and learning resources in a learning environment. According to Pane & Dasopang (2017), this interaction creates a learning process will be good. Ideal learning occurs systematically and can provide students with meaningful activities. With optimal and well-designed learning, learning objectives in terms of improving the quality of student competencies are effectively achieved.

In this case, a teacher does not have to be professional but must have good teaching skills for students, and also can deal with information and the environment to facilitate student learning activities (Deriliana, dkk. 2016). Quality learning is achieved when teachers have diverse techniques and good teaching and teaching facilities and are supported by an ideal learning environment. The implementation of the learning process is carried out in several ways, including through the use of learning media which means learning media is very important in the learning process. In achieving the competence of students by expectations, the use of effective learning strategies is an important factor that cannot be ignored.

The use of learning media that functions as a mediator, container, and liaison for learning messages greatly affects the success of student learning (Mardiah, 2017). In line with an opinion (Ulfaeni dkk., 2017) Success in the learning process is obtained by good learning, good learning can be achieved because there are good ways and learning processes as well, where this arises through learning facilities as support. Media can trigger attention, interest,

feelings, and thoughts in the learning process (Sadiman, 2012). Interventions in the form of the use of effective learning strategies, generally target student motivation and knowledge (Mieke dan Nyoman, 2019).

Adequate media learning objectives will improve the learning experience, enabling students to improve learning outcomes by using media in learning. The existence of the nature of play in this learning process will provide opportunities for students to play a more direct role and encourage enjoyment of the material provided. Monopoly game was chosen as one of the learning media for learning biology on ecological material because it has variety, is fun, populist, familiar to everyone, and are easy to play (Khairunnisa, 2018). Pratiwi dkk (2012) revealed that the Monopoly game was chosen because it is a game that is relatively popular and easy to play. Monopoly is the most popular board game in the world whose goal is to control all plots by buying, renting, and exchanging properties in a simplified economic process. How to play this monopoly is to roll the dice one by one to move the pieces.

Monopoly has been adopted by Monopoly games in general are as follows:



Figure 1. Monopoly media

The use of this monopoly learning media can reduce the difficulty of the teacher to explain the initial way in the game. Monopoly can be a suitable and interesting learning medium to increase student learning. The learning process carried out by teachers with the help of media and teaching materials can be easier to provide learning materials and students can be more helpful when learning (Suitriani, 2016). The role of the teacher in the learning process is no longer only a source of information, through the existence of teaching materials, the teacher plays a direct role as a facilitator who helps and guides students when learning (Magdalena, 2020). In biology learning, learning media is adopted from games monopolies in general that have been modified by regulations and Add questions that students must answer following learning needs to make a monopoly learning media that is suitable, effective, and interesting and can improve students' interest in learning and learning outcomes (Alimmatus, 2008).

Papalia et al (2008) states characteristics of high school (SMA) children, in general, are sixteen to nineteen years old and at the stage of adolescent development. This period is a transition period between children and adults which contains major changes in physical conditions, cognitive and psychosocial. Theoretically, students generally tend to experience learning stress, but according to conditions the student's own internal thoughts which involve negative thoughts and beliefs in himself and his personality. According to Meriyati (2015), the characteristics of school children Upper Middle School (SMA) is a transitional period in children's lives towards adult life which is in the process of learning by implementing an interesting learning model and preparing facilities or media that allow students to think critically, reflectively, and positive and developing appreciation and interest in learning. Besides that, Supeno (2020) stated that Senior High Schools (SMA) are demanding students to increase their knowledge and develop their abilities to think. By using monopoly learning media you can arouse students' enthusiasm, interest, and thinking abilities thereby causing learning outcomes to increase and making it possible to know their abilities.

Based on the problems and results of the explanation above, the researcher considers it necessary to examine the effectiveness of developing monopoly learning media, and what is ecological material suitable for use in learning. Like whether students are interested in the material and happy with the learning process and whether students participate in playing Monopoly games as learning media.

RESEARCH METHODS

This research technique is descriptive quantitative involving students from class X science. This research takes place from October 2021 – January 2022. It explains that the sample is part of the number and characteristics possessed by the population. The sample of this research is the students of class X.

The sampling technique used in this study is a non-probability sampling technique with saturated sampling or census type, which uses all students of class X as the sample. This research is quantitative experimental research with a One-Group Pretest-Posttest Design research design. That is, only one experimental class is used as a research subject without a control class (Sugiyono, 2016).

Table 1. One-Group Pretest-Posttest Design

Pre-test	Treatment	Post-test
T ₁	X	T ₂

This research was conducted by comparing the pretest and posttest scores of students after being given treatment in learning using monopoly learning media. Data collection techniques using tests and questionnaires. This study uses a test instrument in the form of essay questions that have been tested for validity. The instrument consists of 5 questions in each meeting and a different topic. Then the test scores obtained by students in the pretest and posttest are calculated to get the final result value to get a comparison. A questionnaire is a data collection technique used by using forms that contain questions asked in writing to someone or a group of people to get answers or responses and information needed by researchers. This questionnaire aims to find out how students respond to using monopoly media on ecological topics. The results of the questionnaire on media sourced will be analyzed descriptively and the analysis of data will be tested using a t-test.

RESULTS AND DISCUSSION

The results of this study using students of class X using pre-test and post-test sheets obtained the following data, namely:

Table 2. Students' pre-test and post-test results

Criteria	Pre test	Post test
Nilai minimum	9.09	45.45
Nilai maximum	72.72	90.90

Based on the table above, the results of the effectiveness of the pre-test score with an average of 37.49 while the post-test score with an average of 77.83. The student's pre-test results are below the Minimum Completeness Criteria (KKM) which is 65.00 which has been determined by the school. Based on the activity table from the results of the *pretest* and *posttest*, it is continued with the homogeneity test and normality test to determine the effect of the effectiveness of monopoly learning media on ecological topics.

Table 3 . The results of the normality test and homogeneity test

Statistics	Probability value	Information
Normality test	P- value = 0.210 > 0.05	Normal
Homogeneity test	P- value = 0.96 > 0.05	Homogeneous

Based on Table 3, it can be seen that the data is said to be normal and homogeneous, so the test can be continued with the T-test. Hypothesis testing in this research is to prove the effectiveness hypothesis that has been formulated and to obtain conclusions. Testing using a two-party correlated t-test, it was found that hypothesis0 (H0) stated that the learning media monopoly on ecological material was ineffective, while hypothesis (Ha) stated that monopoly on ecological material was effective.

Table 4. T-test result

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest- Posttest	-40.33688	18.76705	4.69176	-50.33713	-30.33662	-8.597	15	.000

Table 4 above shows that the significant value is smaller than 0.05 ($0.000 < 0.05$), so H₀ is rejected and H_a is accepted, meaning that monopoly learning media on ecological topics is effective on student learning outcomes before treatment and after treatment. According to Badriyah (2015), effectiveness refers to success in terms of whether or not the targets that have been set are achieved. If the results are close the target means the higher the effectiveness.

One of the reasons for this student's incompleteness is that students' understanding of ecological material is still low. After applying monopoly learning media, it can be seen that student learning outcomes have increased. This can be seen from the results of the post-test students who have completed. It can be said that this research and development using monopoly learning media is effective because it can be seen from the learning outcomes of students who

increase after using the monopoly learning media. The increasing value of students before and after using this monopoly learning media is said to be effective. Learning with Monopoly game media is more effective than conventional learning without Monopoly game media, this is indicated by the acquisition of points for observing student learning activities. This monopoly game media can be applied as an effective means of learning activities (Swamilaksita, 2017). in line with the statement of Hikmawati et al (2013), the use of teaching-learning media will make learning more interesting, and the meaning of teaching materials will be clearer so that it can be better understood by students.

This learning media causes interest in students which is shown when the teacher enters the class by bringing monopoly learning media with ecological material. It can be seen that students want to know what the teacher has brought as seen from the many responses of students who ask the teacher what they have brought and create space. the class became rowdy. Slameto (2008) state of interest is a feeling of preference and interest in a particular thing or activity, without anyone telling you to. At the beginning of the lesson the teacher gives an apperception here and it is also clear that the students are enthusiastic in answering questions given by the teacher, students are seen to have an interest in learning and the learning process begins with the interaction between teachers and students who have shown good interest in learning so that teachers can easily manage the learning process using monopoly learning media for ecological material. According to Fauziah (2021), students' interest in learning is needed in learning, so that students have an interest in the material being taught. Interest in something learned influences further learning and influences the acceptance of new interests. So "Interest in something is the result of learning and supports further learning".

The results of this study support the theory of Dick and Reiser (Warsita, 2008) which states that effective learning is learning that allows students to acquire certain skills, knowledge, and attitudes and makes students happy. When students enjoy learning, they will easily absorb the knowledge provided by the teacher. Test effectiveness suggests that the effectiveness of the learning process is measured by how well students achieve the learning objectives that have been set. The effectiveness test is seen as coming from the achievement of learning objectives so the effectiveness test is a test to see whether the learning objectives have been achieved by using products developed for learning activities (Alfiriani,dkk. 2017).

The effectiveness of the media described in the results of this study includes aspects of product effectiveness, aspects of product efficiency, and aspects of user interest in the product

(Suciati, 2016). Teaching aids used by teachers in learning contribute to a more active learning process that is fun and of high quality. The success of a learning media is reflected in the effectiveness of using the media after it is used by students. If the level of effectiveness shows an influence caused by the learning resources used in student activities that affect the learning outcomes achieved by students in the class (Deriliana,dkk. 2016).

Based on the reality in the field, there are advantages of monopoly, namely being able to overcome learning time, can be a reference in learning media, can increase students' interest and motivation to learn which can be seen from the willingness to learn, one of which is by noting important material when using monopoly media. The use of learning media cannot separate the advantages and disadvantages, because the media is a tool to channel learning (Hui et al, 2021). The available media is only limited to visual media in the form of images, resulting in students being disinterested in engaging in learning. This makes the learning environment passive and uncomfortable (Suparno, 2021). The selection of learning strategies that are appropriate to the requirements of the students will have repercussions on the optimal acquisition of the learning outcomes of the students.

Learning media is not a teaching system but a means of providing material to increase learning effectiveness. The research results of Falahudin & Sanjaya (2014) state that learning material packaged through learning media will be better, and clearer, and attract the attention and enthusiasm of students. Learning media can make it easier for students to make the lesson atmosphere more active and not watching. Students become more independent because they involve each individual directly even when playing in a group and make students feel and do it themselves, so they gain direct experience and knowledge indirectly. Teachers do not have to explain lesson material repeatedly.

Learning habits will influence learning itself, which aims to gain knowledge and learn efforts to achieve achievement and high learning outcomes will make it easy to answer

questions or questions given by the teacher. Students learn because they are driven by their mental strength, mental strength in the form of desire, attention, desire, or ideals. Mental strength can be classified as low or high encouraged as motivation to learn. There are many benefits to using learning media as learning facilities to attract students' attention (Mardliyyah, 2019). Motivation is a mental impulse that moves and directs human behavior, including learning behavior. According to Sardiman (2012), motivation is a psychological factor that is non-intellectual. Its typical role is in terms of growing passion, and feeling happy and enthusiastic about learning. Students who have strong motivation will have a lot of energy to carry out learning activities. Learning activities are the process of changing behavior as a result of experience and training. This means that learning activities aim to change behavior, whether involving knowledge, skills or attitudes, even covering all aspects of the organism or personality (Djamarah and Zain, 2010).

Therefore, monopoly media allows students to more quickly understand the material given. In addition, students are more active in answering questions and active in learning so this monopoly learning media is considered effective and suitable for use in learning. Monopoly learning media is media that is used by playing while learning in the classroom which can provide a good learning experience fun and create active participation from students through competition in the Monopoly game itself. So you can avoid boredom, and feelings of sleepiness during the learning process. Use of application learning media Playing aims to train cooperation and improve the understanding of students towards the material taught (Maya et al, 2016). The percentage value of students' responses to monopoly learning media for ecological topics is as follows:

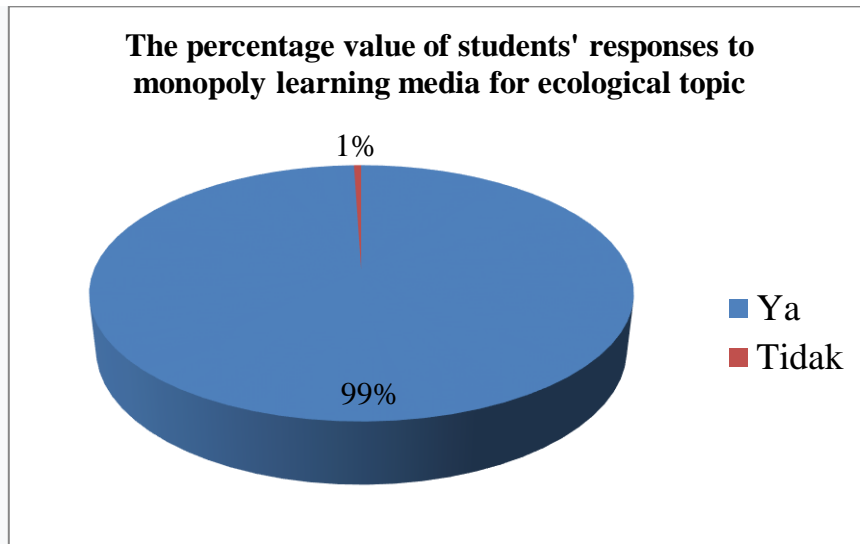


Figure 2. Responses to monopoly learning media for ecological topics result



Figure 3. Students' responses to monopoly learning media for an ecological topic

CONCLUSION

Based on the results of the research that was directed, it was concluded that the monopoly learning media on the ecological material of class X SMA/MA with data collection techniques obtained increased results from the pre-test score with an average of 37.49 while

the post-test score with an average of 77.83. The post-test score has also exceeded the Minimum Completeness Criteria (KKM) of 65.00. The occurrence of student effectiveness such as interest, participating in playing Monopoly, being able to answer questions, and so on in learning results in increased scores. It is proven that monopoly learning media on ecological topics is considered effective so that it is feasible and can be used in the learning process.

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