

THE EFFECT OF THE RESOURCES-BASED LEARNING MODEL IN ECOSYSTEM LEARNING TO IMPROVE STUDENT LEARNING OUTCOMES

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Abstract: This study aims to determine the effect of the Resource Based Learning (RBL) model in Ecosystem learning and its effect on biology learning outcomes at SMAN 3 Mataram. This type of research is research using a quantitative approach. The sample of this research was the students of class IX of SMAN 3 Mataram, which amounted to 32 students of X MIPA 1 for the control class and 32 students of X MIPA 2 for the experimental class. The research data was obtained from a questionnaire on implement the lesson plan and a learning outcome (post-test score) on ecosystem materials. The data analysis results show that the questionnaire score interval level for implementing the Resource Based Learning (RBL) model is 100% (very high). The conventional model shows the score interval that is implemented is 87.5%, and that is not implemented is 12.5%, and the level of validity of the questions in the cognitive domain, including the very valid criteria and the level of reliability of the questions in the cognitive domain, the criteria for reliable. The results of the data analysis of learning outcomes showed differences in the average post-test scores between the experimental class through the application of learning using the resource-based learning (RBL) learning model and the control class through the application of the conventional learning model. The post-test mean in the experimental class was 91.36, while the post-test mean in the control class was 71.69. The significance value of the count sample obtained is 0.532, the significance value obtained is greater than 0.05 H_0 is rejected, and H_1 is accepted, which means that the use of the Resource-based Learning (RBL) learning model is effective on student biology learning outcomes at SMAN 3 Mataram.

Keywords: *Biology Learning Outcomes, Resources-based Learning, Learning Outcomes*

INTRODUCTION

Process education is an interaction that happens between two parties, that is, the teacher and the student. Education is also a process study that occurs in school, not outside school. Definition Study is a change in appearance due to practice [1]. There is three problem tree in the study: the problem about the factor that influences the study, the process of the Study, The process of the study, and the problem about the study results. So, the study is something process that happens to somebody until he obtains something from the process.

Learning is a process of transferring knowledge from textbooks and teacher insight. Learning is not only to gain knowledge, as Benjamin Bloom has classified in Bloom's Taxonomy that in the teaching and learning process, students must obtain six learning objectives in the cognitive domain: knowledge, understanding, application and analysis, analysis, synthesis, and evaluation. These six goals can achieve optimal evaluation of learning outcomes [2].

Biology is an activity That uses logic in life daily. Biology is capable of being associated with real life. Biology as a science puts forward three aspects- minds-on, hands-on, and hearts- the ability to use the mind to build concepts through direct experience accompanied by a scientific attitude [3]. Every day, we do activities That are elements of biology, such as planting plants and looking to change one creature's

life. All activity is an element of biology. That role of biology knowledge is urgently applied in education and become something field studies must study by para students from level education kindergarten until college.

Learning one's role Is dominant for realizing quality, good process, and graduating of education. Process Learning also has its influence, which could cause the quality of education to become low. It means learning depends on the ability of the teacher to carry out or pack process learning. Teachers need to have the ability to convey material learning to the participants. As a result, learning is conducted on the origin road, the origin Theory is delivered, and the origin material is finished, questioning whether the participant understands the material or not and not enough attention from the teacher. So, Biology is a lesson That needs a Skilled brain that must trained with a method that is following or is suitable for the child's condition.

Learning outcomes can be achieved optimally from students' understanding, extensive teacher insight, and other learning process supports, such as syllabi, lesson plans, teaching materials, learning methods, instructional media, and evaluation. To further optimize learning outcomes and activate interactions between teachers and students, a method is needed to support a lesson to increase the success rate of

student learning outcomes [4]. Based on the observations carried out at 3 State Senior High Schools in Mataram, there are several problems in the learning process and problems in teaching and learning processes, so students participate less in learning, resulting in less student learning values. It impacts KKM scores that have been determined to be 75 and only about 40% of minimum completeness criteria (MCC) biology scores that have been applied. This problem is caused because the students' abilities still need to be expanded to memorization, and they experience difficulties if they are faced with questions that require analysis and understanding, so it is necessary to apply a learning model capable of solving these problems. One of the models that can be used is the Resource i-based learning (RBL) model by using the learning can make it easier for students to master the skills regarding the breadth and diversity of information sources the Resource Based Learning (RBL) model.

RBL is an approach designed to facilitate students in overcoming their' skills regarding the breadth and diversity of sources of information in the form of books, journals, newspapers, multimedia, and so on [5]. Resource-based learning is a constructivist learning model that utilizes various learning resources. The preferred Resource Based Learning (RBL) is not the subject matter that must be mastered, but mastery of skills on learning and developing self-confidence. Students are accustomed to searching and finding themselves, so students are used to facing and solving problems. So, this learning requires students to actively find learning resources according to their needs and abilities [6]. According to Butler, "Resource-based learning is one type of constructivist pedagogical theory. Constructivism has, at its base, the assumption that "Knowledge is not transmitted: it is constructed" [7]. So, in the approach to the influence of learning models, the resourced-based learning approach emphasizes students' activeness in finding and understanding information obtained from various learning sources. Students can find out for themselves what they are doing and have the same opportunities to obtain maximum learning outcomes. Some student activities in this learning activity are collecting, using, and displaying synthesized information and evaluation activities [8].

Utilizing fully all sources of information as learning resources, it is hoped that students can easily understand the concept of a lesson.

Based on previous research related to the Resource Based Learning (RBL) learning model conducted by Junianti, namely the Resource Based Learning (RBL) learning model with authentic assessment has a significant effect on improving students' Biology learning outcomes with a significant value of 0.000 (≤ 0.05). Student activity increased to 75.60% of student learning outcomes [9]. Based on this information, it is hoped that using the Resource

Based Learning (RBL) learning model can improve students' metacognition and learning outcomes.

Student activeness in learning by using the RBL strategy is expected to improve learning achievement results. The RBL strategy will make students develop positive attitudes and skills that are very useful for them in the information age they are facing and will face in the future. One attempt to consider individual student differences is resource-based learning (RBL)" [10].

Learning biology has real problems in life that can be related to learning biology material. According to the background above, the authors are interested in conducting research entitled The Influence of the Resource-Based Learning (RBL) Model. In Ecosystem Learning Against Student Learning Outcomes in Class X SMAN 3 Mataram city in 2022.

RESEARCH METHOD

This type of research is research (Quasy Experimental Design) with a model (Nonequivalent Control Group Design), namely by comparing the control group using conventional learning with the experimental group using the experimental method.

This research will be carried out at SMAN 3 Mataram City from April to May for the 2022 academic year, even semester offline. There are two research samples, namely two classes: X MIPA 1, the control class, and X MIPA 2, the experimental class. With 32 students each respondent, why are there only 32 respondents? Because in 1 class, both the experimental and control classes only have 32 students, and this research is only focused on two classes according to the experimental method, the sampling technique is random sampling. Namely, the method used to select a simple random population so that each population has an equal chance of being sampled so that the researcher feels it is sufficient to take a sample of 32 students.

Data was collected through a lesson plan implementation questionnaire for researchers and instrument test questions for class X biology students at SMAN 3 Mataram. The questionnaire used was a lesson plan implementation questionnaire by the researcher and 35 test items, and the researcher filled in the lesson plan implementation sheet during the learning process. The test used is a multiple-choice test with 35 questions. After being validated by subject matter experts, then used in learning with the topic of ecosystem material in class X SMAN 3 Mataram. At the end of the learning activity, students are given a test.

Analysis of research data is using SPSS 16. The hypothesis test used is the two-sample t-test at alpha 0.05. Before analyzing the data using the t-

test, the research data was first tested for normality and homogeneity as a prerequisite for the t-test. The test of the data is the normality of the data used.

RESULTS AND DISCUSSION

Data was collected through an RPP implementation questionnaire for researchers and instrument test questions for biology students in class X SMAN 3 Mataram. The questionnaire used was the RPP implementation questionnaire by the researcher, and the test questions consisted of 35 items and the RPP implementation sheet was filled in for a long time. The test used is a multiple-choice test with 35 questions, after being validated by subject matter experts. They were then used in learning about ecosystem material in class X SMAN 3 Mataram. At the end of the learning activity, students are given a test.

Analysis of research data is using SPSS 16. The hypothesis test used was the two-sample T-test at alpha 0.05. Before analyzing the data using the t-test. The research data was first tested for normality and homogeneity as a prerequisite for the t-test. The data normality test uses the Kolmogorov-Smirnov test, while the homogeneity test uses the One Way ANOVA test. The t-test aims to determine whether there is a significant difference between the two sample means [11].

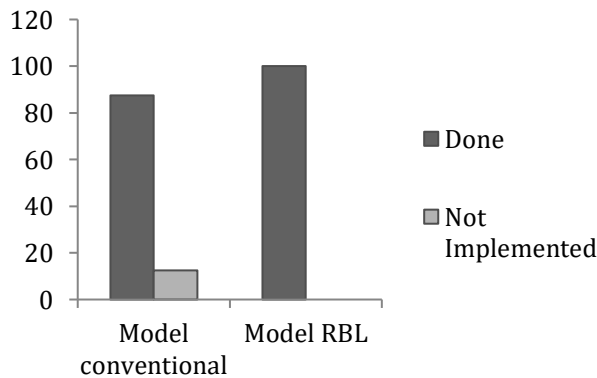


Figure 1. Graphics Difference average results Study post-test and pre-test

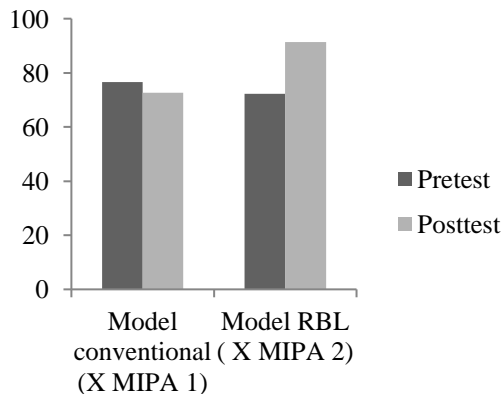


Figure 2. Graphics Difference average questionnaire implementation

Data on student learning outcomes were obtained from the results of the final test of the learning process or the post-test of the control and experimental classes. Based on the results of the data analysis, there is a difference in the average learning outcomes between the control and experimental classes. In the control class, the 32 students obtained an average of 71.69, while the experimental class obtained an average of 91.36 out of 32 students. The post-test comparison also shows that the learning outcomes in the experimental class are higher than in the control class.

The normality test results using the Kolmogorov-Smirnov formula are presented in Table 1. The data is normally distributed if the significance value exceeds 0.05 (> 0.05). Table 1 shows that the normality test of learning outcomes in the control class achieves a significance value of 0.611, while the experimental class has a significance value of 0.127.

Table 2. Test Normality

Statistics	Model conventional (X MIPA 1)		Model RBL (X MIPA 2)	
	Pretest	Posttest	Pretest	Posttest
Level	0.563	0.611	0.792	0.127
Sig (α)	0.05			

The results of the homogeneity test using the One Way Anova formula are presented in Table 2. The data can have a homogeneous variant if the significance value exceeds 0.05 (> 0.05). Table 2 shows that the homogeneity of the variance of learning outcomes in the control and experimental classes has a significance value of 0.637 for the control and 0.476 for the experimental classes. Based on the homogeneity test results, the results obtained from the control and experimental classes were homogeneous.

The results of the hypothesis test using the t-test of two independent samples are shown in Table 3. The test results show that the post-test results between the conventional and RBL models obtain a calculated significance value of 0.532, t count of 2.632 with a Sig level (α) of 0.05. It indicates that the value of tcount (2.632) > ttable (2.042) results in a test decision that Ho is rejected and H1 is accepted (Table 4), which means that the use of the Resource Based Learning (RBL) learning model is effective on students' biology learning outcomes at SMAN 3 Mataram. Based on the acquisition of the average value of the experimental class, which is higher than the control class, it means that the application of the RBL learning model causes a higher increase in learning outcomes compared to the conventional learning model.

Table 3. Test homogeneity

Statistics	Pretest		Post-test	
	Control	Experiment	Control	Experiment
Sig	0.658	0.637	0.824	0.476
Level Sig (α)	0.05			

Table 4. Results t-test two independent sample

Statistics	Post-test Model Conventional Model RBL
ttable	0.532
tCount	2.632
LeveliSig.	0.05

The data analysis results showed differences in the post-test averages in the two classes, where the experimental class had a higher average than the control class. It shows that using the Resource Based Learning (RBL) learning model is more effective than using conventional learning models. These results align with the research conducted by Ardi [12]. The measure of the results of hypothesis testing shows that the difference in these values is significant at the 95% level of confidence. So, it can be concluded that applying the Resource-based learning (RBL) learning method by utilizing the internet has a significant positive effect on student biology learning outcomes. It shows that the RBL learning model has more influence on the ecosystem material.

The application of the RBL learning model causes experimental class students to participate in the learning process actively; this can be observed when students participate in group discussions regarding ecosystem material, and students are directed to look for learning resources not only in books but also on the internet can also be used as a source of learning to look for good material during discussions. They can work with member groups, answering questions, being active with their group mates, and respecting the opinions of others.

Learning outcomes are influenced by two factors, namely internal factors and external factors, namely internal factors. Factors originating from within the student include two aspects, namely physiological (physical) and psychological (spiritual) aspects. At the same time, external factors that come from outside the student's self or external are also classified into two parts: social factors and non-social factors Hidayat [13]. These two factors play an important role in influencing one another, so the teacher pays attention to these factors during the learning process. The application of the RBL learning model is very influential in both of these factors because this model directs students not to use the internet playfully but rather that the internet can be

used as a source of learning both in and outside of school so that the RBL model itself is the main choice in learning.

The student-centered learning process places students at the heart of the learning process by respecting the diversity of potentials that involve them directly in the learning process. Using the RBL model not only presents a different learning process experience but indirectly trains students in effectiveness, cooperation, respecting each other's opinions, thinking, communicating, and utilizing internet media with useful learning resources to develop the students' competencies.

It is in line with Ahmad Yani's opinion [14]. Applying the Resource-Based Learning learning model can influence an effective teaching and learning process. Besides that, it makes it easier for students to learn independently in learning activities and can measure the abilities of students so that students' self-confidence arises.

Some examples of learning resources include textbooks, newspapers, libraries, laboratories, teachers, fellow students, radio, television, HP, slides, films, and even classrooms and school buildings that can be used as learning resources. In line with that, the 2004 curriculum emphasized that the learning process must be student-centered, the teacher is not the only source of learning but acts as a facilitator, dynamist, and motivator in teaching [15].

This study uses the Resource Based Learning learning model, which can influence the effective teaching and learning process. Besides that, it makes it easier for students to learn independently in learning activities and can measure the abilities of students so that students' self-confidence arises. The advantages of learning using various sources will increase independence, activeness, and discipline. Because there are various sources, students can learn easily, and with these learning resources, the teacher is not the only source of information for acquiring knowledge. Therefore, teachers must be able to use their abilities to help students related to learning resources.

In the learning process, students must be active and be able to develop their creative ideas in solving various kinds of biological problems. With this Resource-based learning model, students are expected to be more responsive in solving biology problems and able to apply creative

thinking in solving biology problems. In addition, students are expected to understand how to find and select the right information, use this information, process and create new knowledge based on this information, and present this information to others.

Research with the model that uses the Resource-based learning (RBL) learning model has steps/syntax that are in accordance with how the teacher adapts the lesson plans made by educators to design learning activities and directs students to how to use or utilize the internet as a learning resource following the process the RBL model itself. The RBL steps are as follows:

- a) The first step is to convey the learning objectives, where the educator states the learning objectives that students will study, and as an introduction for students to the material that will be studied.
- b) The second step is to identify problems/problems; this RBL step involves students searching, collecting, and building questions. When the questions begin to be asked, students are guided to determine what information will be needed to answer these questions
- c) The third step is to plan how to find information. Students are facilitated to identify potential sources of information and determine the right way to collect this information, whether through reading books or other printed information, searching the web, observing directly, interviewing, etc. Sources of information must be diverse. Sources of information can include print, non-print, and people.
- d) The fourth step is to collect information. In this step, students must be able to identify (select and sort) what information and facts are important and relevant to the research question and which are not and categorize the findings.
- e) The fifth step is synthesizing information, integrating two elements that produce a new result. Students can unite several ideas to create a perfect or complete conceptual structure. 6. The final step is evaluation. This last step is used after the information found is well organized and students can express their income.

Therefore, teachers need to maximize the use of learning models because they play an important role in helping students understand abstract biology material, as well as helping students learn to get maximum learning outcomes and are categorized as passing according to the KKM standard value of 75. Learning outcomes can be divided into three domains [16].

The determining factors in improving student learning outcomes in schools include feedback, learning models, self-motivation, learning styles, interaction, and instructor facilitation as potential determinants of learning success. One of the determinants of satisfying student learning outcomes is the learning model that has been applied and tested in the learning process. Factors in applying learning

models in the classroom are strongly suspected of influencing learning outcomes. Thus, this study used it as a study [17].

Other results from this study were obtained from the lesson plan implementation questionnaire and learning achievement tests (post-test scores) on ecosystem material. The results of data analysis show that the interval score of the implementation of the RPP Resource Based Learning (RBL) model itself is 100% (very high). The conventional model shows a score interval that is implemented at 87.5% and that is not implemented at 12.5% , and the level of validity of the questions in the cognitive domain, including the very valid criteria, and the reliability level of the questions in the cognitive domain, including the reliable criteria. The results of data analysis of learning outcomes data show differences in the average post-test scores between experimental classes through the application of learning using the Resource Based Learning (RBL) learning model and classes through the application of conventional learning models. The average post-test score in the experimental class was 91.36, while the post-test average score in the control class was 71.69. The significance value of the tcount sample obtained is 0.532, the significance value obtained is greater than 0.05 H_0 is rejected, and H_1 is accepted, which means that the use of the Resource Based Learning (RBL) learning model is effective on students' biology learning outcomes at SMAN 3 Mataram. In line with the results of research conducted by Sri Ira Suharwati, Sumarmi, Based on the results of inferential analysis, it shows that there is an influence of the Resource Based Learning approach on students' Ecosystem biology learning outcomes, especially students' reasoning and communication abilities which state that there is a significant influence of the Resource Based Learning approach on students' interest and learning outcomes [18].

Suppose seen from the number of students who complete based on MCC scores where the increase in the number of students who complete in classes that apply the Resource Based Learning approach is more than classes that do not apply the Resource Based Learning approach. It is in line with the research of Sutriani et al which stated that with a resource-based learning approach, there was an increase in classical mastery from cycle I to cycle II. Students' absorption of classical also increased [19]. The influence of the RBL model can be seen as the influence of the resource-based learning model on the resource-based learning model itself, which has better learning effectiveness than other learning models comparison: "Project-Based Learning or project-based learning model is a learning model that uses projects or activities as media. The result of the project work is a product that is not necessarily in

the form of material but can be in the form of presentations, plays, and others that are presented in public and evaluated for quality [20] because students must learn independently to achieve better learning outcomes[21].

CONCLUSION

Based on the research and discussion results, the use of the RBL learning model in biology learning affects the learning outcomes of SMAN 3 Mataram. The application of the RBL learning model causes a high increase in learning outcomes compared to the application of conventional learning models, so the application of the RBL model is more effective than the application of conventional learning models. Based on the results of the research recommendations that can be given in this study, it is recommended to apply this model further because the stages of this research model are good so that students are more effective, especially in utilizing internet media for learning resources, so that they are optimally useful. Besides that, research using the RBL model itself needs to be applied in biology learning because the scope of biology material is very broad and has varied characteristics. This study only focuses on cognitive learning outcomes, so it is recommended that further researchers examine the application of the learning model, namely the effective, psychomotor, and student-motivational aspects.

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