

SE-007

**APPLICATION OF RESOURCE BASED LEARNING MODEL FOR IMPROVING  
LEARNING OUTCOMES STUDENT IN THE CUBE AND BEAMS MATTER IN  
CLASS VIII SMP NEGERI 5 STABAT T.A. 2013/2014****Asrin Lubis***Department of Mathematics, Universitas Negeri Medan***ABSTRACT**

This study aims to improve students' mathematics learning outcomes using models Resource Based Learning on the cube and block material in class VIII SMP Negeri 5 Stabat AY 2013/2014. This study is Classroom Action Research (CAR). The object of this research is the application of the Resource Based Learning for improving student learning outcomes in the material cubes and blocks in Junior High School eighth grade 5 Stabat T.A. 2013/2014. The subjects were students of class VIII SMP Negeri 5 Stabat T.A. 2013/2014, amounting to 38 students. Before implementing the action, students are given the initial test. From the initial test results obtained show that the learning outcomes of students is low, there are 14 of the 38 students (36.84%) who achieve mastery classical study with an average of 56.34. After administration of the action in the first cycle level student learning in classical completeness is (65.79%) or there are 25 of the 38 students who completed study individually with an average value of 70.45. Furthermore, after the implementation of the action in the second cycle, the level of student learning in the classical completeness is (78.95%) or there are 30 of the 40 students who completed study individually with an average value of 80.11. The results of this study membuktikan that the application of the Resource Based Learning can improve student learning outcomes in the material cubes and blocks in class VIII SMP Negeri 5 Stabat T.A. 2013/2014.

**Keywords:** *Resource Based Learning Model, Improving, Learning Outcomes*

**INTRODUCTION**

Education is one of the most important factors in improving human resources for the progress of a nation. Trianto (2009: 4) says "Upaya yang tepat untuk menyiapkan sumber daya manusia yang berkualitas dan satu-satunya wadah yang dapat dipandang dan seyoginya berfungsi sebagai alat untuk membangun SDM yang bermutu tinggi adalah pendidikan".

Mathematics is one of the subject areas occupy an important role in education. Cornelius (in Abdurrahman 2009:253) argues: Lima alasan perlunya belajar matematika karena matematika merupakan (1) sarana berpikir jelas dan logis, (2) sarana untuk memecahkan kehidupan sehari-hari, (3) sarana mengenal pola-pola hubungan dengan generalisasi pengalaman, (4) sarana untuk mengembangkan kreatifitas, dan (5) sarana untuk meningkatkan kesadaran terhadap perkembangan budaya.

Student learning outcomes in a mathematic less encouraging, even a lot of discussion that the average value of mathematics students in schools is still low compared to other

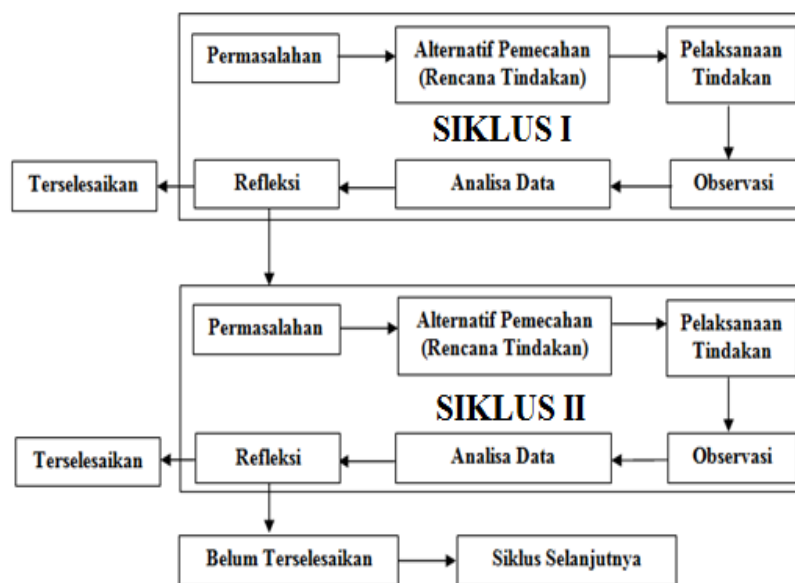
subjects, in addition to the value of the UN Math students also tend to be lower than in other areas of study. In the National Examination (UN), the Education Minister Noah (2012) says that: “Kebanyakan siswa jatuh dinilai Bahasa Indonesia dan Matematika”. Slameto (2010: 54) says that : “Faktor-faktor yang mempengaruhi hasil belajar adalah: (1) Faktor-faktor Internal (Jasmaniah seperti kesehatan, cacat tubuh; Psikologis, menyangkut intelegensi, perhatian, minat, bakat, motif, kematangan, kesiapan; Kelelahan), dan (2) Faktor-faktor Eksternal, seperti Keluarga (cara orang tua mendidik, relasi antar anggota keluarga, suasana rumah, keadaan ekonomi keluarga, pengertian orang tua, latar belakang kebudayaan), Sekolah (metode mengajar, kurikulum, relasi guru dengan siswa, relasi siswa dengan siswa, disiplin sekolah, alat pelajaran, waktu sekolah, standar pelajaran di atas ukuran, keadaan gedung, metode belajar, tugas rumah), dan Masyarakat (kegiatan siswa dalam masyarakat, mass media, teman bergaul, bentuk kehidupan masyarakat).”

Based on observations made in class VIII SMP Negeri 5 Stabat indicate that "activities for students to learn mathematics is still lacking. Learning math is still using the conventional method in which a teacher-centered learning and the students just listen to explanations and working on the teacher as the feedback of teaching and learning activities. The results of students' mathematics learning in class VIII categorized especially low. One of the difficult material in mathematics for students of class VIII is a cube and beam. Students having difficulty in studying cubes and blocks. Most of the students have not been able to understand the concept of cubes and blocks, and yet able to determine the elements of the cube and the beam. If the given problem a little bit different from the examples given problem or contained in the textbook, the students will be trouble and do not know the finish. The learning activities are done in a conventional manner, frequently asked questions and giving the task, and interest in learning some students in class VIII in math still not even there are also some students are afraid to learn mathematics. It can be seen from the results obtained studying eighth grade students because there are many students who received grades below the class average. I daily test results of students found that the average student learning outcomes are still low categorized based on the value of the daily tests I to 38 students, obtained 8 students with a percentage value of learning outcomes 21% of students scored very low, 7 students with percentage 18% of the number of students obtaining a low score, 17 students with a percentage of 45% of the students scored moderate, and 6 students with a percentage of 16% of the high number of students. With an average value of 64.87. While completeness Minimum Standards Criteria (KKM) is 70, and the value it has not met the minimum completeness criteria in classical which is about 75% of all students. "This suggests that the results of students' mathematics

learning in class VIII-3 was less than satisfactory and have problems that have been as a research.

Improvements in the implementation of learning mathematics is done with systematic measures through a suitable method so that learners can think logically, critically, and innovative and can create a pleasant learning atmosphere. One way that can be used is to apply learning models Resource Based Learning, as “Resource Based Learning adalah suatu proses pembelajaran yang langsung menghadapkan siswa dengan suatu atau sejumlah sumber belajar secara individu atau kelompok dengan segala kegiatan yang bertalian dengan sumber belajar” Nasution ( in Sutrisno, 2010).

Based on the above, formulated the problem in this study as follows: (1) How does the strategy Resource Based Learning model application in improving student learning outcomes in the material cubes and blocks in Junior High School eighth grade 5 Stabat T.A. 2013/2014? (2) How is student learning activity when applied models Resource Based Learning on the cube and block material in class VIII SMP Negeri 5 Stabat T.A. 2013/2014? (3) How to increase student learning outcomes after application of models Resource Based Learning on the cube and block material in class VIII SMP Negeri 5 Stabat T.A. 2013/2014?



**Figure 1.** Implementation Procedures Classroom Action Research

## METHODOLOGY

The research was conducted in SMP Negeri 5 Stabat. Time implementation is done in the second semester of T.A. 2013/2014. The subjects were students of class VIII-3 SMP Negeri 5 Stabat T.A. 2014/2015, amounting to 38 people. The object of research is the application of the

Resource Based Learning in cubes and blocks of matter. While this kind of research is a Classroom Action Research. Stages in each cycle consists of problems, planning, implementation, observation, data analysis and reflection. In this study if the student learning outcomes in the first cycle not achieve mastery, then proceed to the second cycle the same stage of their activities by stages in the cycle I. The cycle will stop if the learning outcomes of students achieve mastery in the classical style. The procedures of classroom action research as expressed Arikunto (2009: 16) are as in Figure 1.

## RESULTS AND DISCUSSION

Before the plan of action, given the initial test to study the subject is class VIII-3 SMP Negeri 5 Stabat were 38 students, to determine the initial capability and picture difficulties experienced by students in solving problems related to the cube and the beam. Students' ability to understand and solve problems related to the cube and the beam as shown in Table 1.

**Table 1.** List of Initial Test Scores

No. Students	Score of Student	Percentage	Mastery level	Description
S1	31	31%	Very Low	Not mastery
S2	76	76%	Medium	Mastery
S3	44	44%	Very Low	Not mastery
S4	34	34%	Very Low	Not mastery
S5	82	82%	Tinggi	Mastery
S6	80	80%	Tinggi	Mastery
S7	42	42%	Very Low	Not mastery
S8	66	66%	Medium	Not mastery
S9	73	73%	Medium	Mastery
S10	40	40%	Very Low	Not mastery
S11	61	61%	Low	Not mastery
S12	44	44%	Very Low	Not mastery
S13	76	76%	Medium	Mastery
S14	41	41%	Very Low	Not mastery
S15	35	35%	Very Low	Not mastery
S16	57	57%	Low	Not mastery
S17	65	65%	Medium	Not mastery
S18	52	52%	Very Low	Not mastery
S19	73	73%	Medium	Mastery
S20	55	55%	Low	Not mastery
S21	38	38%	Very Low	Not mastery
S22	40	40%	Very Low	Not mastery
S23	12	12%	Very Low	Not mastery
S24	30	30%	Very Low	Not mastery
S25	47	47%	Very Low	Not mastery
S26	55	55%	Low	Not mastery
S27	30	30%	Very Low	Not mastery
S28	74	74%	Medium	Mastery
S29	52	52%	Very Low	Not mastery
S30	77	77%	Medium	Mastery
S31	50	50%	Very Low	Not mastery
S32	83	83%	Tinggi	Mastery
S33	72	72%	Medium	Mastery
S34	73	73%	Medium	Mastery
S35	70	70%	Medium	Mastery
S36	58	58%	Low	Not mastery
S37	81	81%	Tinggi	Mastery

S38	72	72%	Medium	Mastery
<i>The Sum of students who completed = 14 people, the Sum of students who did not complete = :24 people, percentage of complete classical (PKK) = 36.84%, percentage of classical not mastery = 63.13%, class average = 56.34 (Very low)</i>				

From the results of the test the ability of the initial 38 students, obtained an average value of 56.34 with the spread of student mastery level students, as many as 17 people have very low mastery, 5 students who have low mastery, 12 people have moderate mastery, 4 people have a high mastery, and there is also none of the students who have a very high mastery.

The difficulties experienced by students in solving problems related to the cube and the beam are as follows: (1) Students have difficulty in defining their own understanding of the cube and the beam, (2) Students having difficulty in determining the elements of the cube and the beam, (3) Students have difficulty in determining the nets on the beam, and (4) Students having difficulty in determining the amount of wire length in making the beam frame.

From the above results compiled perencanaan action to address student difficulties with using the model of the Resource Based Learning. Alternative solutions (plan of action) to overcome the difficulties experienced by students in the following manner: (1) to describe or illustrate directly to the students a dice, rubik and milk boxes. (2) Give each group a LKS (Student Activity Sheet), props such as cube models and beams made of cardboard, cube frame and beams are made from plastic straws (pipette) and guiding groups of students learn to overcome difficulties in determining unsur- cube and beam elements. (3) Calling each group leader to stand on their own group, then the teacher invites the students to Menemuan nets cubes and blocks with cutting / trimming some segments or ribs on the model cube and beam made of cardboard. (4) Come to the group behind the seat to provide direction and guide the group to seek information from the model framework cubes and blocks of plastic straw or pipette is to address student difficulties in determining the length of wire / pipette into cubes and beam framing. To achieve the intended effort, composed Learning Implementation Plan (RPP), Student Activity Sheet (LKS), and the observation sheet process of learning activities and student learning activity observation sheet.

Learning activities in the first cycle is done as much as 2 meetings. Teaching and learning activities are carried out in the first meeting and the second meeting by applying alternative solutions as planned. At this stage of learning undertaken by an observer observed that teachers of mathematics in class VIII-3 SMP Negeri 5 Stabat. Observations were made through observation sheet compiled to identify the various things going on in accordance with the planning of learning. In addition, do also the observation of students in learning activities. Learning activity observed with regard to the attitude and perseverance of students in the following study. Overall the results of observation and action execution records were analyzed

to discover the extent of achievement of the implementation of the actions taken and the achievement of student learning outcomes. From the analysis, it was concluded through the reflection of learning outcomes as follows: (1) Students who sit in front of the already motivated and interested in participating in learning, (2) Some students have dared to ask, answer, and express opinions, especially the seat in front, (3) There are students who had dared to mempresentasikan their discussion, (4) students are aware determine the elements and beam cube and cube nets and beam based on the results of tests of learning I, (5) Some students value is already completed or reached KKM.

**Table 2.** List of Test Results Study I Score

No. Students	Score of Student	Percentage	Level Of Mastery	Description
S1	43	43%	Very Low	Not Mastery
S2	92	92%	Very Hight	Mastery
S3	62	62%	Low	Not Mastery
S4	44	44%	Very Low	Not Mastery
S5	81	81%	Hight	Mastery
S6	82	82%	Hight	Mastery
S7	86	86%	Hight	Mastery
S8	76	76%	Medium	Mastery
S9	83	83%	Hight	Mastery
S10	50	50%	Very Low	Not Mastery
S11	61	61%	Low	Not Mastery
S12	44	44%	Very Low	Not Mastery
S13	88	88%	Hight	Mastery
S14	41	41%	Very Low	Not Mastery
S15	72	72%	Medium	Mastery
S16	87	87%	Hight	Mastery
S17	84	84%	Hight	Mastery
S18	70	70%	Medium	Mastery
S19	86	86%	Hight	Mastery
S20	74	74%	Medium	Mastery
S21	73	73%	Medium	Mastery
S22	40	40%	Very Low	Not Mastery
S23	46	46%	Very Low	Not Mastery
S24	74	74%	Medium	Mastery
S25	77	77%	Medium	Mastery
S26	55	55%	Low	Not Mastery
S27	54	54%	Very Low	Not Mastery
S28	74	74%	Medium	Mastery
S29	57	57%	Low	Not Mastery
S30	56	56%	Low	Not Mastery
S31	73	73%	Medium	Mastery
S32	83	83%	Hight	Mastery
S33	87	87%	Hight	Mastery
S34	91	91%	Very Hight	Mastery
S35	86	86%	Hight	Mastery
S36	83	83%	Hight	Mastery
S37	86	86%	Hight	Mastery
S38	76	76%	Medium	Mastery

Based on the test results of the first cycle of learning outcomes acquired mastery learning students as seen in Table 2.

**Table 3.** Student Mastery Level Description Cycle I

Percentage of Mastery	Level of Mastery	Sum of Student	Percentage	Mastery Score average
90% - 100%	Very High	2	5,26 %	70,45 (70,05%) Medium
80% - 89%	High	13	34,21 %	
65% - 79%	Medium	10	26,32 %	
55% - 64%	Low	5	13,32 %	
0% - 54%	Very Low	8	21,05 %	
	$\Sigma$	38	100%	

**Table 4.** Percentage Of Mastery Student At THB I

Description	Sum	Percentage
Students who pass the study	13	34,21 %
Students who have not been thoroughly studied	25	65,79 %
$\Sigma$	39	100%

The results of the above tests, when compared with the initial tests, an increase in students' mastery learning. Retrieved 25 of 38 students (65.79%) have achieved mastery learning (value  $\geq 70$ ), while 13 other students (34.21%) was not finished. Of the 38 students there are 2 students received grades between  $90 \leq x \leq 100$  categorized students with very high mastery, 13 students received grades between  $80 \leq x < 89$  categorized students with high mastery, 10 students received grades between  $65 \leq x < 79$  categorized students with moderate mastery, 5 students received grades between  $55 \leq x < 64$  categorized students with low mastery, and 8 students who obtained a value of  $\leq 54$  categorized students with very low mastery. The average value obtained was 70.45 classes are categorized with moderate mastery. But in this case not yet achieve mastery in classical ie 75% of the many students who earn a score of  $\geq 70$ .

Based on the success indicators defined in this study it can be concluded that the research has not been successful despite improving student learning outcomes for classical completeness student has not reached 75%. Because the test results to learn I do not achieve mastery in classical learning outcomes are  $\geq 75\%$  of students who have learning completeness  $\geq 70$ , then it needs to be done to improve learning in order to reach the target of research. Therefore, research continues into the second cycle.

To improve and enhance the success that has been achieved in the first cycle, then the implementation of a second cycle is planned: (1) Keeping researchers no longer focused on students who sit in front when explaining the material to walk backwards, or walk to the center so that students can behind pay attention and do not talk again when the researchers explain

the material, (2) researchers to form study groups in pairs to make it more conducive heterogeneous and researchers can better discuss saan memperhatikan students, (3) researchers are expected to carry out the learning by extending the question and answer session both among researchers and students, students with a good friend in the group or outside the group, so that students are more daring and familiar expressed his (opinion), (4) researchers give a gift of chocolate to the students is done so that the students interested and dare to ask, answer, or expression, (5) Researchers conducted brain gymnastics game when students are bored, bored, and many students are bermain-play. This was done to make the students who are already bored, and saturated in order to stimulate the brain to concentrate back, (6) is directing the students to be able to understand the given problem by guiding students to get around to the back to see students who have difficulty in solving the problem.

**Table 5.** List of Test Results Study II Score

No. Students	Score of Student Results	Percentage	Level of Mastery	Description
S1	63	63%	Low	Not Mastery
S2	91	91%	Very Hight	Mastery
S3	86	86%	Medium	Mastery
S4	68	68%	Medium	Not Mastery
S5	83	83%	Hight	Mastery
S6	86	86%	Hight	Mastery
S7	78	78%	Medium	Mastery
S8	87	87%	Hight	Mastery
S9	83	83%	Hight	Mastery
S10	76	76%	Medium	Mastery
S11	81	81%	Hight	Mastery
S12	68	68%	Medium	Not Mastery
S13	93	93%	Very Hight	Mastery
S14	73	73%	Medium	Mastery
S15	87	87%	Hight	Mastery
S16	93	93%	Very Hight	Mastery
S17	95	95%	Very Hight	Mastery
S18	67	67%	Medium	Not Mastery
S19	86	86%	Hight	Mastery
S20	76	76%	Medium	Mastery
S21	77	77%	Medium	Mastery
S22	65	65%	Medium	Not Mastery
S23	63	63%	Low	Not Mastery
S24	86	86%	Hight	Mastery
S25	61	61%	Low	Not Mastery
S26	73	73%	Medium	Mastery
S27	81	81%	Hight	Mastery
S28	79	79%	Medium	Mastery
S29	77	77%	Medium	Mastery
S30	68	68%	Medium	Not Mastery
S31	86	81%	Hight	Mastery
S32	85	85%	Hight	Mastery
S33	91	91%	Very Hight	Mastery
S34	87	87%	Hight	Mastery
S35	84	84%	Hight	Mastery



S36	91	91%	Very Hight	Mastery
S37	93	93%	Very Hight	Mastery
S38	77	77%	Medium	Mastery

After learning implementation in accordance with the planning of the second cycle, based on the analysis of the results of observation and action through reflection summarized as follows: There has been a change towards the better, because it is conducive students during the discussion, had not talked in the back of the class, had dared to ask, answer and express opinions. While the analysis of the test results of the second study conducted concluded that there has been an increase in student achievement test. This increase occurred after application of the Resource Based Learning models are designed in the second cycle which beracuan on observations in the cycle I. The results of the test on the second cycle can be seen as in Table 5.

**Tabel 6.** Student Mastery Level Description Cycle II

Percentage of Mastery	Level of Mastery	Sum of Student	Percentage	Mastery Score Average
90% - 100%	Very Hight	7	18,42 %	80,11 (80,11%) Hight
80% - 89%	Hight	13	34,21 %	
65% - 79%	Medium	16	42,21 %	
55% - 64%	Low	2	5,26 %	
0% - 54%	Very Low	0	0 %	
$\Sigma$		38	100%	

The Sum of students who completed = 30 orang; The Sum of students who did not complete = 8 orang; Percentage Of Complete Classical (PKK) = 78,95 %; Percentage Of Classical Not Mastery = 21,05 %; Class average = 80,11 (High)

From the table above it can be seen that there is an increase in student learning outcomes between the first cycle to the second cycle. In the first cycle class average 70.45, while the second cycle of the average value of the class is 80.11. Judging from classical completeness percentage in the first cycle is 65.79%, while in the second cycle is the percentage of completeness klasikalnya 78.95%. This means has reached a classical completeness (75% of students scored above 70).

Based on the analysis of data or the results of tests done students can be concluded that an increase in student learning outcomes after administration of the Resource Based Learning action models. The results of the students' learning experience peningkatansebagai following: (a) the average value of 56.34 in Tests Initial tests Learning Outcomes I 70.45 and the test results of Study II 80.11; (b) Percentage of Initial Mastery Test Classical 36.84% on the test results of the first study to test 63.16% and 78.95% Results of Study II. With classical

completeness percentage in the second cycle, it means completeness belajar classically been achieved because more than 75% of students who scored  $\geq 70$ , so researchers do not forwarded to the next cycle.

## CONCLUSIONS AND RECOMMENDATIONS

As a conclusion from the results of this study are as follows: (1) Strategy implementation model of the Resource Based Learning (a. Presenting props to facilitate students in understanding the cube and beam, b. Maximizing discussion group mates by giving more control to maximize the discussion process, c. Direct approach to students with problems both in the classroom and outside the classroom, d. Giving a gift of chocolate and added value for couples who advanced group presented the results of their discussion, the couple asked and the other groups responded to the presentation renderer group mates, and give praise and applause for students who are active in learning. It is intended that the active participation of students in learning increases), (2) Student learning activities when applied to a Resource Based Learning models that undergo a change towards the better, because students already pay attention to the teacher's explanation, dared to ask, answer, express opinions and mempresentasikan group discussion results to the class. So that students are already active in learning when applied to a model-based Learning Resource on cubes and blocks of matter, (3) Application of Resource Based Learning models can improve student learning outcomes. It can be seen from: (a) The average value of 56.34 in Tests Initial tests Learning Outcomes I 70.45 and the test results of Study II 80.11, and (b) Classical completeness percentage 36.84% Initial tests on the test results of the first study to test 65.79% and 78.95% Results of Study II.

As for recommendations that can be submitted from the results of this study are: (1) 1. Teachers can use the model of the Resource Based Learning as an alternative in the process of learning mathematics, so that the learning is more towards the students thinking logically and critically, and make inculcate students share work together and respect each other's opinion in solving a problem, (2) Teachers can also use the Resource Based Learning model of the cube and the beam material to improve student learning outcomes, (3) To th e students to be more active in the learning process, more bold in asking and express opinions or ideas, especially in the discussions, and (4) To further research so that the results of this research and the device can be considered to apply the model Resource Based Learning on the cube and the beam material or other material that could be developed for further research.

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