

IMPROVING UNDERSTANDING OF THE CONCEPT OF MULTIPLE WITH MANIPULATIVE OBJECTS THROUGH A REALISTIC APPROACH IN CLASS II ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

Mathematics subjects in grade II SDN Pondok Aren 04, Pondok Aren District, South Tangerang City, can be seen as quite preferred subjects by students. Student activity in learning mathematics is quite good, although the desired results have not been maximized. The objectives of the research are; (1) to find out whether students' understanding of multiplication using a realistic approach grade II SDN Pondok Aren 04 Pondok Aren District, South Tangerang City, Antapani District increased?, and (2) to find out whether students' interest in teaching mathematics in grade II multiplication is better?. The method used in this study is an analytical descriptive method with a class action model. The results obtained from the study are (1) learning mathematics using a realistic approach can increase students' understanding in multiplication. It can be seen from the results obtained by students in mathematics learning there is an improvement, and (2) student attitudes in learning mathematics using a realistic approach can increase student interest in mathematics, so that mathematics is no longer a difficult subject to understand and understand.

KEYWORDS Mathematics; multiple; manipulative approach; realistic approach



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INTRODUCTION

Mathematics subject in class II SDN Pondok Aren 04, Pondok Aren District, South Tangerang City can be seen as a subject quite liked by students. Student activity in learning mathematics is quite good, although the desired results are not optimal. The results of the tests students took were not neatly arranged and the level

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of accuracy was still low and the scores obtained were still of a sufficient standard (60). Data from the results of the learning evaluation in semester 2 of the 2006-2007 academic year showed that only 38% of students scored above the average of 60. From these data it is clear that mathematics in their view is still considered a subject that is difficult to understand and understand.

Mathematics is one of the subjects that must be studied by every student, because through mathematics students are trained to think logically, rationally and critically in acting so that they are able to survive and succeed in the competitive arena (Indahwati, 2016). In GBPP Mathematics it is stated that the general objectives of giving mathematics at the primary and secondary education levels are to: (1) prepare students to be able to face changes in life and in a world that has developed through practice acting on the basis of thinking logically, rationally, critically, carefully, honestly, effectively and efficiently. (Ministry of Education and Culture 1994), and (2) prepare students to be able to use mathematics and mathematical mindsets in everyday life and in studying various sciences (Depdikbud 1994:1) (Daga, 2020).

Mathematics makes a major contribution in equipping students for the future (Indahwati, 2016). Therefore students must understand mathematics seriously, but in reality until now mathematics still has a negative image in the eyes of students (Maisarah et al., 2021). Most students think that mathematics is a difficult and frightening subject, the experience of learning mathematics is like a nightmare, the atmosphere is always tense, anxious and depressed (Rahman, 2018). Mathematics (an exact science) for children is generally an objectionable subject if not a hated subject (Ruseffendi, 2006).

The impact of this negative image is that student learning outcomes in mathematics have so far not been satisfactory, the average student daily test scores are still low. Understanding is the main factor that influences the success of a student. Students with higher understanding will achieve brilliant achievements. However, most students currently have low learning comprehension, so the results they have achieved so far have not been satisfactory.

Efforts to improve student learning outcomes in mathematics are the responsibility of all parties, including teachers, government and society. Teachers as educators and teaching students in schools are not only required to choose appropriate learning methods or techniques, they are also required to create comfortable learning situations so that students' potential can be optimally developed which can ultimately improve learning outcomes.

In teaching mathematics in grade II, the teacher should pay attention to the facts of the mental development of children's thinking. The concrete operational period, from 7 or 8 years old to 11 or 12 years old and the logical processing stage can be done with the help of concrete objects or under certain circumstances (Mifroh, 2020). It is intended that students understand and understand more about the concepts given.

Arithmetic operation is a term that is made in general from the whole arithmetic work on addition, subtraction, multiplication and division.

Data on mathematics learning outcomes in semesters 1 and 2 using the lecture method through a conventional approach did not show any significant changes to

class II students at SDN Pondok Aren 04, Pondok Aren District, South Tangerang City. This can be seen from table 1.

Table 1. 2017/2018 Academic Year Report Card Grades

Number	Semester	Lots of students	Math report card score
1	I	33	53
2	II	33	64

Along with the progress of science and technology that continues to develop, in line with that, various learning with various approaches is used, one of the approaches is Realistic Mathematics Education which was developed in the Netherlands since the 1970s. This approach emphasizes human activity, mathematics in terms of this is not seen as "strict science", but it has been considered that mathematics is an activity of human life (a human activity) (Nusaibah & Murdiyani, 2017).

The realistic approach uses a real world situation or a context as a starting point in learning mathematics. At this stage students carry out activities to organize problems and identify aspects of the problems that exist in these problems.

With realistic learning it is hoped that the achievement and interest of class II students at SDN Pondok Kacang Timur 03 Pondok Aren District, South Tangerang City can increase. In addition, the benefits that can be achieved are the strong multiplication concept so that it is possible to receive more complex material at the next level. Their assumption of mathematics as a subject that is difficult to understand and understand can be minimized by reviving students' enthusiasm for learning mathematics.

Seeing the problems described above, the writer needs to conduct research on students' understanding of mathematics associated with a realistic approach. The purpose of study are; (1) to find out whether students' understanding of the multiplication of whole numbers using a realistic approach to class II at SDN Pondok Aren 04, Pondok Aren District, South Tangerang City, Antapani District, has increased?, and (2) to find out whether students' interest in teaching mathematics in class II multiplication is better?

RESEARCH METHOD

The method used in this research is analytic descriptive qualitative method with a class action model. It is called descriptive analytic because this research focuses on current solutions from the data collected, compiled, explained and then analyzed (Sugiyono, 2017). While the approach used is a qualitative and quantitative approach. This research consisted of two cycles of action, each of which had stages of planning, acting, observing, and reflecting.

Operational definition

Understanding

Understanding comes from words understanding. Understanding is the basis for carrying out a law or concept meaningfully (Sharifah, 2017). Understanding means that students understand something but the understanding stage is still low. The ability to understand at this stage, for example, is able to transform information into a more meaningful parallel form. His actions were carried out on orders (orders) without anything to do with others or seeing their use. Understanding that there is a concept in each learning needs to be pursued optimally as one of the abilities that must be possessed by students after studying mathematics.

Polya and Skemp suggest that understanding consists of two types namely (Tianingrum & Sopiany, 2017); (1) Instrumental Understanding, in this understanding students only memorize something separately or can apply something to routine and simple calculations, (2) Rational Understanding, this understanding allows students to relate things to other things freely, correctly and are aware of the processes being carried out. The mathematics used in this study is focused on understanding the concept of multiplication to solve problems on multiplication material (Siregar et al., 2021).

Understanding of concepts is a change that makes individuals better understand the objects they face and can develop their ability to use numbers related to everyday life (Febriyanto et al., 2018). According to Bruner the level of one's understanding to know or understand the world around it, there are three stages of presentation of objects namely (Nurdyansyah, 2019): enactive is related to concrete objects in learning, iconic refers to the presentation in the form of data images or graphics, and symbol, using words as symbols.

In this study what is meant by understanding is the ability of students in the cognitive domain of stage 2 according to Bloom's Taxonomy. Indicators of this understanding are understanding the mathematical problem posed in its own sentence, making a mathematical model of the given problem, solving the problem.

Multiplication

Multiplication is repeated addition.

Manipulative stuff

Manipulative objects are learning aids that can be manipulated or tweaked and grouped. By using manipulative objects, it is hoped that students will find it easier to understand the mathematical concepts they are studying, and can improve students' skills in counting. In this study, what is meant by manipulative objects are objects used in learning, for example leaves, marbles, and sticks.

Realistic Approach

RME (*Realistic Mathematics Education*) or realistic mathematics learning is an approach that starts from real things for students, emphasizing process of doing mathematics skills, discussing and collaborating, arguing with classmates so that they can find their own strategies or ways of solving problems and in the end use that mathematics. to solve problems both individually and in groups (Kamarullah, 2017).

This means student-centered learning, the teacher acts as a facilitator, moderator and evaluator and assesses student answers. With this approach students

are trained to respect the opinions/ answers of other students. In this case, learning mathematics using a realistic approach student are given the opportunity to be active in learning (students discuss in finding strategies/ steps for solving problems) and the material provided is based on context or things that are real or have been experienced/known to students and associated with everyday life situations.

In this study, what is meant by a realistic approach is a way of learning whose characteristics are the teacher gives real problems to students, students work to solve problems, and students construct mathematical models from the material discussed.

RESULT AND DISCUSSION

Initial Conditions

The research was conducted in class II SDN Pondok Kacang Timur 03, Pondok Karen District, South Tangerang City. The problem found in this class is about multiplication. Before conducting the research, researchers categorized students into 3 categories, namely high, medium and low. The results seen are from the first semester math report card scores. These values can be seen in the following table:

Table 2. Category of Students by Score of Class II Reports

No	Subject	Category
1	A	Good
2	FM	Good
3	A. N	Very good
4	US	Fair
5	AT	Very good
6	AM	Good
7	AR	Good
8	DA	Good
9	FF	Very good
10	ID	Fair
11	IP	Good
12	LR	Very good
13	MA	Good
14	Mr	Good
15	MA N	Fair
16	MF	Good
17	MA	Very good
18	MK	Very good
19	NH	Good
20	NA	Fair
21	PK	Very good
22	RD	Very good
23	R.H	Good
24	RN	Very good
25	SA	Very good
26	S	Fair
27	SS	Very good
28	YES	Good
29	Y	Good
30	UY	Fair

No	Subject	Category
31	A A	Very good
32	SV	Fair
33	FA	Good
34	RR	Fair
35	Y.C	Good
36	D	Good

From the results of the first semester math report cards, it can be seen that 10 students are in the high category, 16 students are in the medium category and 10 students are in the low category.

Research data

After knowing the results of the first semester, the researcher prepared research instruments, both learning instruments and data collection instruments. The research instrument was prepared for 2 cycles. The learning instruments are in the appendix and the data collection instruments are in attachment 4. The following is the data from the research:

Cycle I Research Results

The results of this study came from tests and non-tests. This data is presented as follows:

Table 3. High Category Student Formative Test Score

No	subject	Score	Origin Category
1	AN	90	Very good, Very good
2	AT	100	Very good, Very good
3	AM	90	Good, Very good
4	AR	80	Good, Very good
5	DA	90	Good, Very good
6	FF	90	Very good, Very good
7	LR	100	Very good, Very good
8	MA	90	Good, Very good
9	Mr	90	Good, Very good
10	NH	100	Good, Very good
11	PK	90	Very good, Very good
12	RD	90	Very good, Very good
13	RN	90	Very good, Very good
14	SS	90	Very good, Very good
15	A A	80	Very good, Very good
16	SA	80	Very good, Very good

Table 4. Students' Formative Test Score Medium Category

No	Subject	Score	Origin Category
1	A	70	Good, good
2	FM	70	Good, good
3	IP	70	Good, good
4	MF	70	Good, good
5	RH	60	Good, good
6	S	60	Fair, good
7	YES	60	Good, good
8	FA	70	Good, good
9	D	60	Good, good
10	Y	60	Good, good

Table 5

Low Category of Students' Formative Test Score

No	Subject	Score	Origin Category
1	Y.C	50	Fair, fair
2	NA	40	Fair, fair
3	RR	40	Fair, fair
4	UY	50	Fair, fair
5	SV	40	Fair, fair
6	US	20	Fair, fair
7	ID	20	Fair, fair
8	MA	40	Fair, fair
9	man	50	Fair, fair
10	MK	50	Fair, fair

Cycle I non-test results

1) Cycle I Questionnaire Results

The questionnaire was filled in by students at the end of each cycle. The number of students who filled out the questionnaire in cycle I was 36 people. The following table is the result of the cycle I questionnaire recapitulation expressed in percentage form.

Table 6. Results of Cycle I Student Questionnaire

No	Question	SS %	S%	TS %	STS %	Total %
1	Learning mathematics that has just been studied is very interesting	68,42	21,05	2,63	7,89	100
2	Learning using aids encourages me to study more actively	50	18,42	21,05	10,52	100
3	I like to study math problems related to everyday life	55,26	26,31	7,89	10,52	100
4	I like to exchange opinions with friends when solving problems	44,73	15,78	21,05	18,42	100
5	With the math lesson that I just did, I feel that I understand the lesson faster	68,42	18,42	2,63	10,52	100
6	I became more courageous in expressing my opinion during the lesson	65,78	13,15	10,52	7,89	100

No	Question	SS %	S%	TS %	STS %	Total %
7	I feel satisfied and happy with the results obtained after following the mathematics lesson that was just conducted	65,78	18,42	5,26	10,52	100
8	I like the class atmosphere that occurs during learning	65,78	14,78	2,63	14,78	100
9	Guidance from the teacher made me think more actively and more easily solve problems	71,05	10,52	13,15	5,26	100
10	Acquired material is remembered longer	50	15,78	10,52	23,68	100

2) Observation Results of Cycle I

Observation results can be seen from the attachment sheet

Cycle II Research Results

The results of this study came from tests and non-tests. This data is presented as follows

Table 7. High Category Student Formative Test Score

No	subject	Score	Origin Category
1	AN	90	Very good, very good
2	AT	100	Very good, very good
3	AM	90	Good, very good
4	AR	80	Good, very good
5	DA	90	Good, very good
6	FF	90	High, high
7	LR	100	High, high
8	MA	90	Good, very good
9	Mr	90	Good, very good
10	NH	100	Good, very good
11	PK	90	Very good, very good
12	RD	90	Very good, very good
13	RN	90	Very good, very good
14	SS	100	Very good, very good
15	A A	90	Very good, very good
16	SA	90	Very good, very good

No	subject	Score	Origin Category
17	FA	90	Good, very good
18	Y	80	Good, very good

Table 8. Students' Formative Test Score Medium Category

No	subject	Score	Origin Category
1	A	70	Good, good
2	FM	70	Good, good
3	IP	70	Good, good
4	MF	70	Good, good
5	RH	70	Good, good
6	S	60	Fair, good
7	YES	60	Good, good
8	D	70	Good, good

Table 9. Low Category of Students' Formative Test Score

No	subject	Score	Origin Category
1	Y.C	50	Fair, fair
2	NA	40	Fair, fair
3	RR	40	Fair, fair
4	UY	50	Fair, fair
5	SV	40	Fair, fair
6	US	30	Fair, fair
7	ID	30	Fair, fair
8	MA	40	Fair, fair
9	man	50	Fair, fair
10	MK	50	Fair, fair

Cycle II Non Test Results

1) Cycle II Questionnaire Results

The questionnaire was filled in by students at the end of each cycle. The number of students who filled out the questionnaire in cycle I was 36 people. The following table is the result of the cycle I questionnaire recapitulation expressed in percentage form.

Table 10. Results of Student Quotes Cycle II

No	Question	SS %	S% %	TS %	STS %	Total %
1	Learning mathematics that has just been studied is very interesting	61,53	15,38	7,69	15,38	100
2	Learning using aids encourages me to study more actively	53,84	23,07	10,25	12,82	100
3	I like to study math problems related to everyday life	69,23	10,25	5,12	15,38	100
4	I like to exchange opinions with friends when solving problems	46,15	15,38	23,07	15,38	100
5	With the math lesson that I just did, I feel that I understand the lesson faster	74,35	15,38	5,12	5,12	100

No	Question	SS %	S%	TS %	STS %	Total %
6	I became more courageous in expressing my opinion during the lesson	48,71	25,64	7,69	17,94	100
7	I feel satisfied and happy with the results obtained after following the mathematics lesson that was just conducted	64,10	17,94	10,25	7,69	100
8	I like the class atmosphere that occurs during learning	56,41	17,94	7,69	17,94	100
9	Guidance from the teacher made me think more actively and more easily solve problems	66,66	15,38	15,38	2,56	100
10	Acquired material is remembered longer	53,84	10,25	12,82	23,07	100

2) Observation Results of Cycle II

The results of observations made can be seen in the list of appendices.

Research result

Implementation of Cycle I

The implementation of cycle I includes planning, implementing actions, observing and reflecting.

1) Planning

Based on observations prior to the implementation of the research, the researcher conducted a study of the Curriculum for Mathematics in Grade II Elementary School to prepare a complete lesson plan with learning scenarios which are expected to increase students' understanding of multiplication. As previously disclosed, researchers categorize students into 3 categories, namely high, medium, and low.

2) Implementation

The first observation that the writer made with the subject of multiplication.

First Meeting

The first meeting subject discussed was about multiplication as repeated addition. In the opening lesson, the teacher assigns students to listen to multiplication as repeated addition. Furthermore, in the core activities of the lesson, the teacher discusses how to do multiplication with repeated addition using buttons. Indeed, there were some students who were seen in the learning process while playing, and it was also seen that there were students who seriously followed the teaching and learning process well. Because teachers rarely use props that are in the student's environment so that students in learning are playing while playing. At the end of the activity, the teacher gives an evaluation that students must do individually. Then the results of the evaluation were collected.

Based on the results of research on the implementation of mathematics learning, it shows that the process of learning mathematics that the authors have been doing so far does not use the teaching aids around them. Student interest is

visible but still lacking. This is because counting multiplication by repeated addition is felt by students to be difficult. How to solve the problem feels long. So that students' attitudes toward learning mathematics seem less responsive. This is due to the lack of use of props that are easy to get to use to solve the multiplication questions given but doing them takes a long time and sometimes the numbers are wrong.

Second Meeting

At the second meeting, the main topic discussed was multiplication. At the second meeting the students looked cheerful when they entered the class. After the students pray and greet the teacher, then the teacher takes student attendance one by one. At the beginning of the lesson, the teacher gives explanations and apperceptions regarding multiplication activities and material that will be given at that time

At this second meeting the teacher gave an explanation about multiplication the teacher gave questions in the form of stories and the students listened to what the teacher said, after a while some students were seen raising their hands to answer the questions posed by the teacher, but some were silent. Maybe the silent one doesn't understand what the teacher is asking. In the final activity, the teacher evaluates students by giving questions related to other topics according to the material discussed, which is done individually. There were some students who could not work on the questions given because their understanding was not optimal or the students forgot about the lesson the teacher had delivered a few days ago.

3) Discussion and Reflection

Learning Outcomes of Cycle I

Based on the results of observations and reflections at this stage, it is necessary to make improvements so that the quality of learning mathematics becomes better and the learning objectives that have been set can be achieved. Therefore, so that the learning process of students' attitudes in learning and students' understanding of mathematics can increase, the authors plan a lesson that uses a realistic approach in multiplication.

Cycle Reflection

From learning cycle 1, it appears that there are several things that must be corrected to increase students' understanding of multiplication as repeated addition. After analyzing learning outcomes, questionnaire results, the results of observations, the researcher conducted a reflection, the results of which are as follows: the need for visual aids as a tool to do mathematics, attitudes / student responses during learning, and problems given in the context of everyday life

Implementation of Cycle 2

The implementation of cycle 2 includes planning, implementing actions, observing and reflecting.

1) Planning

Based on the reflection of cycle 1, researchers to prepare learning scenarios that are expected to further improve student learning outcomes in mathematics, especially about multiplication.

2) Implementation

Cycle 2 was held on April 21 2008. In this cycle there were 2 meetings. The first and second meetings respectively discussed the subject of multiplication

First Meeting

The first meeting The main topic of discussion was family. At the student meeting, students looked ready to carry out the teaching and learning process. At this meeting the tool used was a stick to make multiplication easier, the stick was given black for the tens value, and the white one for units. By using a stick for students who quickly catch it, it will be easy, but children who don't do it often feel confused about how to do it. Then the teacher guides students who don't understand using sticks to do multiplication. The teacher tries to give questions and students try to solve them by using existing sticks. In learning by using sticks children feel interested and happy in doing it.

Second Meeting

The learning process at the second meeting was when students lined up with student attitudes as usual. In the initial activities, as usual, students pray and greet the teacher, then the teacher takes students' attendance one by one. At the beginning of the lesson, the teacher gives explanations and apperceptions regarding multiplication activities and material that will be given at that time

At the second meeting the teacher tried multiplication questions without using aids to answer. There were some students who tried to answer the questions given by the teacher. But for students who are in the low category the questions are more difficult. From the attitude of the students showed a sense of pleasure in doing so. This will have a good impact on students so that students will be happy with mathematics, and mathematics for students is no longer a difficult subject to understand. In the test results given by the teacher there is an increase even though only slightly. And for student test results that are in the low category it is difficult to increase.

3) Discussion and Reflection

Learning Outcomes of Cycle II

After the teacher takes action on implementing learning using a realistic approach, then an analysis of observations and reflections on the results of the implementation is carried out based on data and some information that has been obtained when observing learning in the classroom.

The results of this analysis and reflection are explained as follows: (1) learning activities in the second act of carrying out activities individually have shown sufficient results. Although seen from the average value of the individual obtained from the results of the evaluation carried out, (2) student activities carried out in learning are very fun. This can be seen from the enthusiasm of students in answering questions given by the teacher, (3) from the results of observations on learning, for children who are slow in accepting material have difficulty working on multiplication questions with a realistic approach, and (4) attitudes of Students in Learning Mathematics Using a Realistic Approach.

Based on the information obtained from the results of filling out the observation questionnaire conducted on students, then to find out students' attitudes in learning mathematics using a realistic approach, the results revealed that students' attitudes in learning mathematics showed a positive attitude, namely they took part in lessons enthusiastically and seriously. Indeed, students look active when solving the questions given.

Cycle Reflection

Based on the acquisition of research results for two actions aimed at improving student learning outcomes in the multiplication of whole numbers, that the implementation of the actions in the first cycle or action and the second action has shown the following things:

- 1) The process of learning mathematics using a realistic approach is seen in terms of student and teacher interaction.
 - a) At the beginning of the lesson, the teacher introduced mathematics lessons with a realistic approach as the starting point for the lesson. Then the teacher directs and explains how students learn well. Students provide comments and ask questions about the subject matter.
 - b) During the learning process, the teacher manages the class interactively, guides students and motivates students to actively participate in discussions.
 - c) At the end of the lesson, the teacher together with students concludes the lesson that has been done. Then the teacher evaluates students by giving questions that suit them.

Based on this, there has been an increase in the activity of students and teachers in learning mathematics for the better. Then there was also interaction between students and other students through discussion activities. While the role of the teacher is as a guide who directs students to think.

The attitude of students in learning mathematics using a realistic approach has shown positive results for students in learning mathematics. The positive attitude towards mathematics is marked by the earnest and enthusiastic attitude of students in learning mathematics and students are attentive/ concentrated on the lesson. In learning activities students look active, confident in themselves express his opinion. Based on the results of the evaluation which experienced an increase in the second cycle, it also showed that students' positive attitudes towards mathematics lessons increased student learning achievement.

- 2) The learning outcomes of class II students at SDN Griya Bumi Antapani 13-2 increased by using a realistic approach. This can be seen in the learning in cycles I and II which increased in the results of student evaluations in the form of written answers. Most students can already use a stick to calculate multiplication of whole numbers.

Table 11. Recapitulation of Cycle I and Cycle II

No	Subject	Cycle I	Cycle II
1.	A	70	70
2.	FM	70	70
3.	A.N	90	90

No	Subject	Cycle I	Cycle II
4.	US	20	30
5.	AT	100	100
6.	AM	90	90
7.	AR	80	80
8.	DA	90	90
9.	FF	90	90
10.	ID	20	30
11.	IP	70	70
12.	LR	100	100
13.	MA	90	90
14.	Mr	90	90
15.	MA N	50	50
16.	MF	70	70
17.	MA	40	40
18.	MK	50	50
19.	NH	100	100
20.	NA	40	40
21.	PK	90	90
22.	RD	90	90
23.	R.H	60	70
24.	RN	90	90
25.	SA	80	90
26.	S	60	60
27.	SS	90	100
28.	YES	60	60
29.	Y	60	80
30.	UY	50	50
31.	A A	80	90
32.	SV	40	40
33.	FA	70	80
34.	RR	40	40
35.	Y.C	50	50
36.	D	60	70
Average		69,16	71.94

Discussion

From the results of research conducted in the field, the realistic approach method requires a long time and requires solid preparation to run smoothly. In accordance with Piaget's opinion that ages 7 to 11 years in learning are assisted with concrete objects. By using concrete objects, students' understanding of learning will be embedded and made an impression on their minds (Fadhl et al., 2022). From the results of research that researchers do using realistic, students' understanding will be faster compared to just explaining without using props. The tools they use are tools that are often encountered in their daily lives. So that students' understanding will be fast. We can use the tools in their environment or in the school yard.

By using a realistic approach students can solve problems given by the teacher in accordance with the knowledge possessed by students, and can make models in the form of mathematical concepts, and can compose their own and can be used on other problems. And even realistic learning can be seen by interactions between students and teachers, teachers and students, between students and students and

realistic learning needs to be related to other topics both in mathematics lessons or lessons outside mathematics

CONCLUSION

Based on the results of research and analysis of learning mathematics using a realistic approach as was done in the previous chapter, several conclusions can be drawn, including the following; (1) learning mathematics using a realistic approach can improve students' understanding of multiplication. It can be seen from the results obtained by students in learning mathematics there is an increase, and (2) students' attitudes in learning mathematics using a realistic approach can increase students' interest in mathematics, so that mathematics is no longer a difficult subject to understand and understand.

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