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Implementation Realistic Mathematics Education to Increased Motivation and Learning Achievment of Mathematics in Elementary School

Asih Imroatus Solikhah[1], Dinar Westri Andini[2], Murgiyanti[3], Aji Kusputranto[4]

[1-2] Universitas Sarjanawiyata Tamansiswa, Indonesia
[3-4]SD Negeri Jurug, Yogyakarta, Indonesia
**Corresponding Author e-mail:* asihimroatus@gmail.com

1. Abstract

Study this low background of motivation and results study tagged math with lack of student involvement in learning as well as the results of the minimum limited. Study this aim to know how to improve motivation and results for mathematics students in class III elementary school Year Teaching 2022/2023 in Bantul on material around stand up flat with an applied approach to Realistic Mathematics Education (RME). Problems in this study is low motivation and results in learning mathematics for students in class III primary school teaching. Type of research used Classroom Action Research (CAR) conducted in two cycles. Each cycle consists of a planning phase, an implementation phase, an observation phase, and a reflection phase. The subject of the study that is the student class III, with a total of 23 students, 11 male students and 12 female students. Data collection techniques include observation, interview, questionnaire, and test. According to the results of the research in cycles I and II, the results of the learning motivation questionnaire in cycle I received a mark percentage of 72% in cycle I and increased to 80% in cycle II in the category good. Achievment learning student in the first cycle, students completed only 16 students with a percentage of 70%, in the cycle II, students experienced an improvement they completed as many as 19 students with a percentage of 83%. So, we can conclude that the application of Realistic Mathematics Education (RME) can increase the motivation and results of teaching mathematics in school.

Keywords: *Realistic Mathematics Education (RME), motivation learning, learning achievment*

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2. Introduction

According to Sari (2018:693), education is a conscious activity carried out with the aim of developing the potency of one's students to socialise knowledge, attitudes, skills and abilities to have social skills that are needed in life to socialize. Through education, no one is free from the concept of learning, which is somewhat exhausting to obtain intelligence. According to Slameto (2018:2), every individual can say, study when in itself-individual the process of activity that results in something change behaviour. Mathematics is one of them forms of learning at the school level. According to Anggraeni (2020:26), mathematics becomes a result of thinking as a human abstract thinking, this makes it difficult for students to learn it. Zulkardi in Supardi (2019:245) states that there are many factors that contribute to the results of teaching mathematics, such as a dense curriculum, learning media that are not effective, a limited choice of learning methods and strategies, an assessment system that is not yet adequate, and teachers who do not have the ability to increase students motivation to learn.

Andriani (2019:81) defines motivation study as encouragement to do a particular activity study, fine from themselves or from outside someone, so that increase mind learning. According to Pertomo (2019:159), motivation can also be described as a drive of the subject, coming from inside and outside, to perform certain activities to achieve a goal. So, motivation is a set of circumstances that lead an individual to perform a certain activity for a certain reason.

According to Kunandar (2014:62), results study is something that are the abilities of a student, such as cognitive, affective, and psychomotor. Study results are skills that each child a haster e experience the learning process. Susanto (2013:5) argues that study results study is level success student in learning material specified lessons with score, as well as obtained from learning material. The according to the study results, students have acquired skills child after doing activity learning (Aufa, 2019:16). Based on the opinions expressed above, we can conclude

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that the results of the study's findings are changes in self-ability someone who is characterised with changes acts in requirements such as mastery, ability, evaluation, and value.

Based on the results of observation and interview with the teachers of the third grade of the school in Bantul with a total of 23 students, it is known that the students of the class 11 students graduate with a percentage of 48%, while the students of the class who are still under minimum limited is 12 students graduate with a percentage of 52%. That can be said that the problem is that the results of mathematics study mathematics are still low. One of the causes is that the learning is not sufficiently innovative, resulting in a learning environment that is not sufficiently conducive and the students who are not sufficiently motivated while learning mathematics.

Alternative chosen solution, that is the application of the approach of Realistic Mathematics Education (RME). According to Iriana (2022:224), RME is a proven method daily application and synchronisation of problems daily in mathematics. Lady (2018:55) argues that RME is method based learning of reality based mathematics, is embedded in the students environment around students. According to Cengiz (2022:226), the RME approach can be used to overcome comprehension problems in mathematics design. Approach This approach is said to increase achievement study students, solve real problems, pay attention to students, and create an atmosphere that supports classroom learning.

A previous study previously carried out by Fitri and Sugiarto (2020) showed that the Realistic Mathematics Education (RME) approach can increase motivation to study mathematics in the classroom IV. According to the research of Hasan (2023), an approach called Realistic Mathematics Instruction (RME) can improve the outcomes in mathematics class.

Based on the background described above, the researcher was motivated to conduct a study entitled "Implementation of Realistic Mathematics Education to Increased Motivation and

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Learning Achievment of Mathematics in Elementary Schools".

3. Methods

The research method used in this study is Classroom Action Research (CAR). According to Arikunto (2019:105), CAR is a study action conducted by the teacher with the purpose of practicing classroom learning qualitatively. This study used the PTK design model (Kemmis and Mc. Taggart) was used in this study which includes planning, implementation, observation, and reflection.

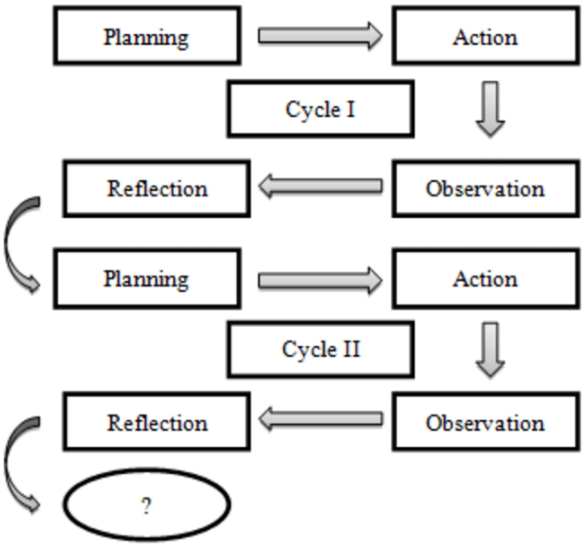

Figure 1. Kemmis & Taggart CAR Cycle Model

Place study it is a school base in Bantul, Yogyakarta. Subject of the study it is a primary school class III elementary school in Bantul with a total of 23 students, with details of 11 boys and 12 girls. Instruments used in the study is observation and guided interviews to identify problems early, questionnaires to determine students motivation to study mathematics students, and sheets tests to determine mathematics study outcomes. The data analysis techniques used in the study are both quantitative and qualitative. The data come

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from the results of observation and interview with classroom teachers, respondents who completed the questionnaire instrument, motivation for studying mathematics, and test material around getting up flat.

4. Results and Discussion

Study this was implemented in the class III elementary school in Bantul in the even semester Year Teaching 2022/2023 with a quantity of 23 students. Research is conducted to increase motivation and results study of mathematics on the matter around getting up flat and use the approach of Realistic Mathematics Education (RME). Study that consisted of 2 cycles with 2 sessions each cycle. Cycle I was held on May 11 and 12, 2023 and cycle II was held on May 15 and 19, 2023. Effort increases motivation and results study mathematics, namely on teme 7 Developmental Technology, subteme 3 Developmental Technology Kommunication, and subteme 4 Developmental Technology Transportation. Focus on research to be purposeful this is associated with motivation and results learn math in school.

1. Questionnaire Motivation

Cycle I

Motivation outcomes study mathematics is measured with a questionnaire as follows.

Table 1. Motivation Results Study Cycle I

No	Indicator	Percentage
1.	There is encouragement and need for learning	70%
2.	There is desire and desire to success	70%
3.	There are hopes and aspirations for the future	67%

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4.	There is an interesting activity in study	76%
5.	There is a situation that encourages learning	74%
6.	There is an award in studies	77%
	Percentage Average	72%
	Category	Enough

Based on Table 1 above indicator (1) indicates that there is encouragement and need in study to succeed at 70%. Indicator (2) is present and there is a desire to succeed at 70%. Indicator (3) there are future hopes and aspirations, for the future with a high percentage of 67%. Indicator (4): activity that is interesting for study reaches 76%. Indicator (5) consists in a situation conducive to learning and has reached 74%. Indicator (6) consists in the study of 77%. Percentage average questionnaire motivation learning in cycle I of 72% with category enough.

Cycle II

Table 2. Motivation Results Study Cycle II

No	Indicator	Percentage
1.	There is encouragement and need for learning	81%
2.	There is desire and desire to success	79%

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3.	There are hopes and aspirations for the future	76%
4.	There is an interesting activity in study	83%
5.	There is a situation that encourages learning	77%
6.	There is an award in studies	85%
	Percentage Average	80%
	Category	Good

Based on Table 2 above indicator (1) indicates that there is encouragement and need in study to succeed at 81%. Indicator (2) is present and there is a desire to succeed at 79%. Indicator (3) there are future hopes and aspirations, for the future with a high percentage of 76%. Indicator (4): activity that is interesting for study reaches 83%. Indicator (5) consists in a situation conducive to learning and has reached 77%. Indicator (6) consists in the study of 85%. Percentage average questionnaire motivation learning in cycle II of 80% with category good.

Learning motivation scores reached 72% in cycle I and 80% and in cycle II. For that matter, study mathematics students in grade III school base their experience improvement from cycle I to cycle II by 8%. Motivation increased based on the students experience of real students. This is in line with the study of Fitri & Sugiarto (2020), who found that the learning process is influenced by the situation of actual students, which may be caused by the teaching method of teaching teachers and motivational factors of motivation. In addition, elements of appropriate learning media that interest students also encourage them to continue learning. According to the study of Arukah (2020), the use of learning media during the learning process can increase students interest and enthusiasm among students and improve their motivation to learn. So, we can conclude that using Realistic Mathematics

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Instruction (RME) can increase motivation to study mathematics in school. Following This chart shows how motivation for studying mathematics can be increased with Realistic Mathematics Education (RME).

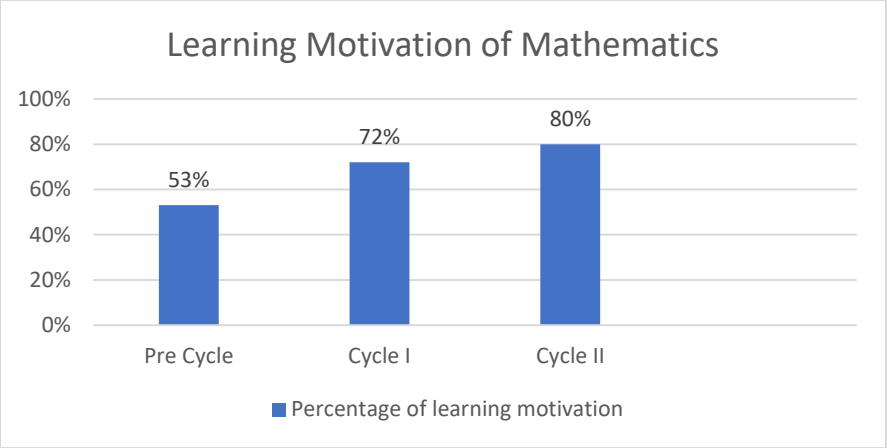

Figure 2. Chart Increased Motivation Learning of Mathematics

2. Achievment Learning

Cycle I

Study results the student class III can be determined as follows based on the results of the test evaluation in cycle I as follows.

Table 3. Achievment Learning Cycle I

Amount Student	Minimum Limited	Completeness Percentage	Incompleteness Percentage
23	70	70%	30%

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Table 3 above shows that of the 23 students there are 16 students completed minimum limited 70 which is a percentage of 70%. The students who did not complete minimum limited 70 include as many as 7 students with a percentage of 30%.

Cycle II

Table 4. Achievment Learning Cycle II

Amount Student	Minimum Limited	Completeness Percentage	Incompleteness Percentage
23	70	83%	17%

Table 4 above shows that of the 23 students there are 19 students completed minimum limited 70 which is a percentage of 83%. The students who did not complete minimum limited 70 include as many as 4 students with a percentage of 17%.

Consequently, the data results show a 13% improvement in scores for study mathematics students in cycle I class III by cycle II by 13%. In this matter, the completeness study was completed in accordance with the set indicators that have been set is 80%. This means that the application of Realistic Mathematics Education (RME) can improve the results of mathematics instruction in elementary school. This is in line with research conducted by Hasan (2023) research showing that shows the use of RME can improve mathematics teaching outcomes. RME is purposeful instruction that helps students study mathematics in a meaningful way and improves their understanding of mathematics and how it relates to life. In addition, Courage presents results for discussion and supports learning from results learning. This is consistent with the study by Septian and Komala (2019) study a portion of the group that is not yet courageous posts results for discussion before class. Following these chart enrichment results, study mathematics with Realistic Mathematics Education (RME).

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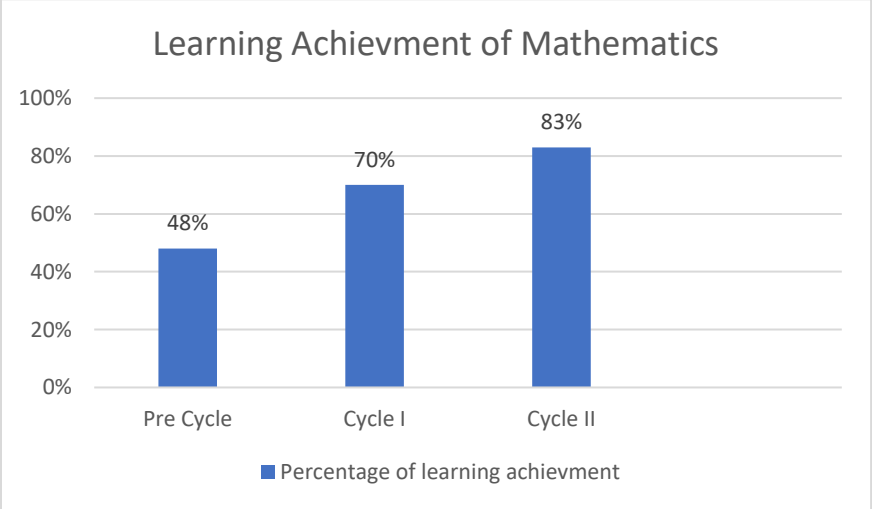

Figure 3. Chart Increased Learning Achievment of Mathematics

5. Conclusion

Based on the results of the research, possible conclusions taken on research this is an application approach Realistic Mathematics Education (RME) can increase motivation and results study mathematics students school fundamental. In cycles I and II, the teacher uses problems in a problem based context, with material around getting up flat. Students are directly engaged in learning as they make measurements and calculations around getting up, using things from the environment to help them understand and remember and find draft what they have already learned and find designs more easily. In percentage motivation, before the cycle 53% study mathematics, and in percentage results study mathematics by 48% (11 students). The Realistic Mathematics Education (RME) approach can increase motivation. Study students in class III on the eye lesson math material to get up flat. This has been shown to increase motivation. Study mathematics in cycle I to acquire a grade

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percentage of 72% with the sufficient category enough, and in cycle II, to acquire a grade percentage of 80% with the good category. In addition, Realistic Mathematics Education (RME) can also increase scores. Study mathematics students in the class III scholastic basic material to get up flat. This can be demonstrated in cycle I to achieve a percentage completeness of 70% (16 students). In cycle II students experienced improvement with a large percentage of 83% (19 students).

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