BirLE-Journal
Budapest International Research and Critics in Linguistics and Education
p.ISSN: 2655-2647
e.ISSN: 2655-1470
Budapest Institute

The Effect of Realistic Mathematics Educations (RME) Approach Based on Ethnomatics on the Improvement of Concept Understanding Ability and Students' Learning Motivation in Elementary School Al-Kausar City of Langsa

Nuraina[1], KMS. M. Amin Fauzi[2], Naeklan Simbolon[3]
[1]*Postgraduate Program in Universitas Negeri Medan, Indonesia*
[2,3]*Universitas Negeri Medan, Indonesia*
aina.nur1992@gmail.com

Abstract

This study aims to determine: (1) The effect of the ethnomatematics-based RME approach on improving the understanding of the fourth grade students' mathematical conceptual understanding of Al-Kausar Elementary School Langsa City, (2) The effect of the ethnomatematics-based RME approach on increasing the learning motivation of fourth grade students of SD Al-Kausar Kota Langsa, (3) There is an interaction between the learning approach and the initial mathematical ability to increase the students' understanding of mathematical concepts in grade IV SD Al-Kausar, Langsa City, (4) There is an interaction between the learning approach and learning motivation towards the increase in the ability to understand the mathematical concepts of fourth grade students Al-Kausar Kota Langsa, and (5) Describing students' ability to understand mathematical concepts in terms of high, medium and low abilities. The sample in this study was selected by total sampling of two classes. The first class (first group) was treated by applying the RME approach based on ethnomatics with a sample size of 25 students and the second class (second group) was treated with conventional learning with a sample size of 25 students. The data in this study were analyzed using 2-way ANOVA. From the research results, it is obtained that there is an effect of the ethnomatematic based RME approach on the improvement of students 'understanding of mathematical concepts, where as much as 47% of the ethnomatematic based RME approach affects the increase in students' understanding of mathematical concepts.

Keywords
RME based on Ethnomatematics; understanding the concept of Learning motivation

I. Introduction

According to Duffin & Simpson (2000) understanding the concept as a student's ability to: (1) explain the concept, it can be interpreted that students are able to re-express what has been communicated to him, (2) use the concept in a variety of different situations, (3) develop several consequences from the existence of a concept, it can be interpreted that students understand a concept as a result of which students have the ability to solve every problem correctly. Irhamna (2020) states that Mathematics is a universal science. Mathematics is also seen as the queen of science. In line with the above, the Ministry of National Education (2003: 2) states that conceptual understanding is one of the mathematical skills or skills that are expected to be achieved in learning mathematics, namely by demonstrating an understanding of the mathematical concepts he has learned,

explaining the relationship between concepts and applying concepts or algorithms in a flexible manner, accurate, efficient.

According to Nasution (2020) to be able to teach mathematics, a teacher must be able to prepare lesson plans so mathematics lessonscan be received by studentsIn fact, students' ability in understanding concepts is low. This can be shown from the results of preliminary observations made on fifth grade students of SD Al-Kausar, Langsa City by being given problems such as "Ibu Ayu has a dining table with a length of 170 cm and a width of 80 cm. If Mrs. Ayu wants to cover the surface of the table with a cloth dangling 15 cm longer than the surface area of the table on each side, how much cloth does Mrs. Ayu need? ". The following is one form of answer that arises from solving the problem.

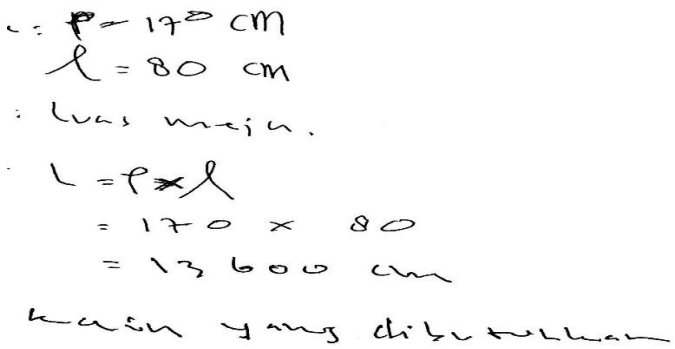

Figure 1. *Student's Answer Patterns in Solving Problems*

From the students' answers above, it can be seen that students have difficulties when faced with a different problem from the example given, namely determining the area of cloth needed by Bu Ayu. In other words, students have not been able to apply the concepts they have learned in different situations. This shows that students only know the concept of this, it can be seen that students can correctly answer the surface area of Mrs. Ayu's dining table, for that in the learning process the teacher must be able to present a learning situation that can maximize student potential.

The low ability of students 'conceptual understanding in elementary schools was also revealed by the results of research conducted by Sumaryati, Rahayu & Utaminingsih (2018) that the pre-cycle value of the material number 25 students was 31.33, which shows the understanding of students' mathematical concepts at low qualifications. Handayani (2015) argues that learning mathematics in Indonesia still emphasizes memorizing formulas and calculating, this causes the understanding ability of students to be less developed.

The low ability of students to understand concepts is influenced by several factors, such as the learning process which tends to be teacher-centered, the lack of active role of students in finding concepts. In other words, students tend to accept mathematical concepts in a finished form which is given by providing examples. Besides that, in the learning process, the teacher does not pay attention to the environment which can be used as a learning resource to support students' conceptual understanding.

A good learning process can be used to build a more effective and efficient mathematics learning. The existence of a process or activity that contains an effort to create an atmosphere or service for the abilities, potentials, interests, talents and needs of students about mathematics, there can be optimal interaction between teachers and students and between students and students in learning mathematics as a vehicle for

developing intelligence, abilitie and shape the personality of students. Therefore, in teaching mathematics to students, teachers should be able to choose the appropriate learning model and method to help students understand the mathematics subject matter.

One learning model that is thought to foster students' interest, motivation and conceptual understanding is the Realistic Mathematics Education (RME) model. RME according to Murniati, et al., (2013) is a learning strategy that invites students to be more active and creative in thinking and communicating ideas in solving math problems for students. Meanwhile, according to Dickinson, et.al. (2010) that RME can be used at every level of education, so that it is easy to develop according to conditions. Fauzan (2011) states that RME provides opportunities for students to act actively in seeking answers to problems faced and trying to examine, search for, and summarize themselves logically, critically, analytically, and systematically. This will encourage students to improve reasoning and think freely,

To optimize the application of RME in the learning process, the learning setting will involve the environment (in this case the cultural aspect) as a learning resource. Siagian et.al., (2018) explained that learning mathematics by utilizing the environment can create learning activities that emphasize active student involvement (student centered), namely exploration, experiment, discussion or other activities to reveal natural phenomena or everything that happens in daily activities by utilizing the surrounding environment. The environment referred to in this case is a cultural aspect that has a value / content of mathematics in it, which is referred to as ethnomatematics.

Local culture which is a learning resource by applying the RME approach in this study is a protected forest located in Langsa City, where there are Aceh traditional houses and other Acehnese cultures that can be explored in mathematics learning. According to Herawaty, et. al., (2018) in his research, students' metacognition process based on ethnomatematics as a horizontal mathematical process. Ethnomatematics is mathematics that considers quantitative, relational and cultural aspects of society integrated with concrete things that can be observed or understood by students through the process of mathematics.

In addition to choosing the right learning model, another factor that affects the achievement of students' conceptual understanding is student motivation in learning mathematics. This is in line with the results of research by Mueller, Yankelewitz, & Maher (2011) that motivation is a predictor that determines student learning outcomes. The higher the motivation of a student to learn mathematics, the higher the learning outcomes achieved. Consistent with research conducted by Hamdu and Agustina (2011), which concludes that there is an influence on learning motivation and learning outcomes and is in line with research by Winarno (2012) which concludes that there is a positive and significant influence between learning motivation on student learning outcomes. Motivation is a series of attempts to provide certain conditions.

II. Review of Literatures

2.1 Realistic Mathematic Education (RME) Approach

Realistic mathematics education (RME) is the delivery of mathematical topics that start from real things or have experienced by students. This does not mean that everything has to be taught concretely (there is an object). Realistic mathematics learning is basically the use of reality and the environment that students understand to facilitate the learning process of mathematics, so as to achieve the goals of mathematics education better than in

the past. What is meant by reality are things that are real or concrete that students can observe or understand through imagining. According to Wijaya (2012: 21) realistic mathematics education is learning that uses realistic problems, namely problems that can be imagined (imaginable), or real in the minds of students. These problems can be in the form of fictional stories or essays, and games. According to Susilowati (2018: 46) the Realistic Mathematics Education (RME) approach is an alternative learning which requires students to construct knowledge with their own abilities through activities they carry out in learning activities.

In learning realistic mathematics education (RME), students are invited to be active, free to come up with ideas and they are also expected to share their ideas, meaning that they are free to communicate their ideas to one another and the learning process takes place interactively, and students become focused and all activities in class. In addition, the realistic mathematics approach places students as subjects as well as objects in learning mathematics. As subjects, students try on their own to solve a problem or to understand a mathematical concept and find problem solving algorithms without or with teacher guidance. Meanwhile, as an object, students as a component whose ability will be enhanced in learning mathematics.

Meanwhile, the teacher as a facilitator, meaning that the teacher provides various kinds of contextual problems about the material to encourage students to find the concept or procedure in it and help them compare these ideas, guiding them to make decisions about which idea is better for them. Meanwhile, students reduce their dependence on the teacher's activities in solving questions. The teacher facilitates the discovery process in problem-solving situations with a variety of questions, stimulation, motivation and a little hint.

2.2 Ethnomatematics Based Learning

Inin short, the notion of ethnomatematics is mathematics in culture. Ethnomatematics consists of two words, ethno (ethnicity / culture) and mathematics. That means that ethnomatematics is mathematics in culture. The term ethnomatematics was introduced by D'Ambrosio a Brazilian mathematician in 1977. In linguistic terms, the prefix "ethno" is defined as something very broadly referring to the socio-cultural context, including language, jargon, code of behavior, myths and symbols. The root word "mathema" tends to mean explaining, knowing, understanding, and carrying out activities such as coding, measuring, clarifying, concluding, and modeling. The suffix "tics" comes from the word techne and means the same as technique (D'Ambrosio, 1994: 449).

Ethnomatematics can also be defined as the study of the relationship between mathematics and related socio-cultural backgrounds which shows how mathematics is generated, transferred, disseminated and specialized in diverse cultural systems (Zhang & Zhang, 2010). In ethnomatematics, it can be studied how people understand, express and use cultural concepts that are described mathematically. Because the culture in each region has differences, learning related to ethnomatematics also includes learning based on multicultural education. According to Danoebroto (2012: 94), "mathematics learning based on multicultural education aims to optimize mathematics learning achievement while fostering awareness, understanding, tolerance, mutual understanding,

Ethnomatematics is also seen as a special method used by a certain cultural group or society in mathematical activities. Mathematical activities are activities in which there is a process of abstracting from real experiences in everyday life into mathematics or vice versa, including grouping, counting, measuring, designing, building tools, making patterns, counting, determining locations, playing, explaining, and so on. (Rachmawati, 2012).

2.3 Ability to Understand Mathematical Concepts

According to Sardiman (2014: 42) understanding or comprehension can be interpreted as mastering something with the mind. Understanding can be interpreted by capturing the meaning which is the ultimate goal of every study. Understanding has a very basic meaning that puts learning parts in proportion. Without it, knowledge and attitude will be meaningless. Furthermore, according to Driver and Leach (in Afrianti, 2011: 16) understanding is the ability to explain a situation or an action. Meanwhile, understanding the concept according to Hiebert (in Afrianti, 2011: 20) is the strength associated with the information contained in the concept that is understood with the schemata it has previously had. The 2004 Ministry of National Education curriculum states "...

Given the importance of understanding the concept, Hiebert and Carpenter (Dafril, 2011) revealed that teaching that emphasizes understanding has at least five advantages, namely:

1. Understanding provides generative.
2. Understanding spurs memory.
3. Understanding reduces the number of things to remember.
4. Understanding enhances the transfer of learning.
5. Understanding influences student beliefs.

In this study, what is meant by understanding mathematical concepts is the ability of students to understand something with thoughts that are related to what is previously known so that they can define, identify, interpret data and be able to apply concepts that are in accordance with their cognitive structure. Based on this description, the indicators of concept understanding in this study are: (1) the ability to restate a concept; (2) ability to clarify objects; (3) the ability to give examples and not examples; (4) ability to present concepts in various forms of mathematical representation; (5) ability to develop necessary or sufficient conditions; (6) the ability to use, utilize and select certain procedures;

2.4 Learning Motivation

Everyone in doing work or teaching and learning really needs motivation. Strong motivation can make a person able to achieve the desires he has. Conversely, low motivation will not be able to achieve the desires it has. Likewise with students in the learning process. If students are motivated, they will be able to accept the learning delivered by the teacher. Meanwhile, students who do not have motivation in learning will not be able to accept the lessons conveyed by their teachers. According to research Yulianingsih (2017) explains that "motivation is an absolute requirement in learning". So that the role of motivation in the learning process is prioritized in determining learning outcomes.

The driving force or mental impulse in students that causes learning activities is the existence of learning motivation. According to Sadirman (2011: 75) learning motivation is the overall driving force in students that causes learning activities, which ensures the continuity of learning activities and which provides direction for learning activities, so that the goals desired by the learning subject can be achieved. Meanwhile, learning motivation according to Suprijono (2009: 163) suggests that learning motivation is internal and external encouragement to students who are learning to make behavior changes. In general, this change in behavior is supported by several motivational indicators.

Based on the above opinion, it can be concluded that the success of students in learning is supported by learning motivation in which there are several indicators that encourage students to be enthusiastic about learning. Not only students, teachers must also know learning motivation to help students learn successfully. As stated by Suparta (2015)

in his research entitled The Effect of Cooperative Learning Model Make A Match Technique on Learning Motivation and Social Studies Learning Outcomes, explains that "teachers must live up to the role they play so that they can create a truly quality learning process by providing learning experiences. meaningful and able to foster a learning culture for students, which in turn will affect student motivation and learning outcomes.

III. Research Methods

This research is a quasi-experimental research. This research was conducted in Class IV SD Al-Kausar, Langsa City, which was held in the even semester of 2019/2020. The population in this study were fourth grade students of SD Al-Kausar, Langsa City, which consisted of classes IV-a and IV-b with 25 students each. This study took two homogeneous randomized parallel classes by applying different learning. The first class (the first group) was treated by applying the ethnomathematic-based RME approach and the second class (the second group) was treated with conventional learning. This research was conducted to determine the ability of understanding mathematical concepts and student motivation through the application of an ethnomatematic based RME approach. The design in this study used a factorial design which was categorized as a 2 x 3 factorial design. The instruments used in this study were a test of the ability to understand mathematical concepts and a student motivation questionnaire. The instrument test was done by calculating the validity, reliability, difficulty level, and distinguishing power so that the data obtained from the research results were valid. The research tools used in this study were arranged in the form of learning plans and student worksheets (LKPD). Data processing is carried out based on the problems in this study. Starting with the prerequisite test for data analysis such as the homogeneity and normality test before analyzing the hypothesis using the t test and two-way ANOVA, and descriptively to describe students' ability to understand mathematical concepts in terms of high, medium and low abilities. Research data processing was carried out using the SPSS 22 application. The data obtained from the results of the preliminary and final tests were analyzed to determine the increase in the ability to understand mathematical concepts and student motivation. The normality test is intended to determine whether the data from each learning group is normally distributed or not. The normality test was carried out by means of the chi-square test. The homogeneity test is intended to determine whether the two distributions, namely the experimental group and the control group, have the same variances or not. Hypothesis testing used two-way ANOVA analysis with the F test and a significance level of 0.05.

IV. Discussion

Based on the research results that have been described, then this section will describe the descriptive research results. The discussion of the results of the study was carried out on students' understanding of mathematical concepts, student learning motivation, and the interaction between the learning approach and the students' initial mathematical abilities towards increasing understanding of mathematical concepts and students' motivation.

4.1 There is an Effect of an Ethnomatematic Based RME Approach on the Improvement of Students' Understanding of Mathematical Concepts

Based on the results of the study, the average gain score normalized understanding of the mathematical concepts of students who were given learning with the ethnomatics-based RME approach was 0.49, while the average gain score of students who were given

learning with conventional learning was 0.46. Based on the inferential test with two-way ANOVA, the results of this study indicate that students who were treated with the ethnomatematic-based RME approach had a higher average value of improvement in mathematical communication compared to students treated with conventional learning. As well as the magnitude of the influence of the ethnomatematics-based RME approach on the improvement of students' understanding of mathematical concepts by 47%.

It is natural that there is an increase in the understanding of mathematical concepts of students who are treated with the ethnomatic-based RME approach significantly because of the RME approach. in development berbased on the idea that mathematics is a human activity and mathematics must be connected in a tangible way to the context of students' daily lives. The RME approach combines views of what mathematics is and how students learn mathematics. Mathematical concepts taught through the RME approach are represented in the context of the life around students, so that students will feel how the concepts are constructed and what the benefits of these concepts are learned for themselves and their lives. Thus students will have a strong memory of the concepts they have learned. This is in line with the view of Gravemeijer (1994) which states that mathematics should be kept close to students and must be linked to everyday life.

In accordance with its characteristics, the RME approach can activate students in learning, because during the learning process, students are trained to solve challenging problems that exist in students' real world lives. In the process of solving the problem, students will construct their ideas and relate them to the concepts they have learned.Tarigan (2006: 4) also argues that realistic mathematics learning is a learning approach that refers to realistic student reasoning. So it refers to the development of a logical, critical, honest mindset oriented to mathematical reasoning in solving problems.

According to Susilowati (2018: 46) the Realistic Mathematics Education (RME) approach is an alternative learning which requires students to construct knowledge with their own abilities through activities they carry out in learning activities. The main idea of learning using the RME learning model is that students should be given the opportunity to reinvent mathematical concepts with adult guidance (Gravemeijer, 1994).

The RME approach can also help students become aware of a problem that is around them, and can increase student learning activities in class by not only listening, taking notes, and memorizing what the teacher explains, but students will also be actively involved in their learning, both in terms of communicating. mathematical ideas and in presenting the learning outcomes they get. In this study, the RME approach was designed with ethno-mathematical elements, so that the learning design in presenting the concepts taught to students is related to cultural aspects that are around students. According to Herawaty, et. al., (2018) in his research, students' metacognition process based on ethno-mathematics is a horizontal mathematical process. Ethnomatematics is mathematics that considers quantitative, relational and cultural aspects of society integrated with concrete things that can be observed or understood by students through the process of mathematics.

Surat's research results (2018) state that learning mathematics based on culture (ethnomatematics) is one way to make mathematics learning more meaningful and contextual which is closely related to cultural communities. In addition, culture-based mathematics learning will be an interesting, fun, and innovative alternative to learning because it allows contextual meaning to occur based on students' experiences as members of a cultural society so that it is expected to participate in supporting the literacy movement.

4.2 There is an Influence of an Ethnomatematic Based RME Approach on the Improvement of Student Learning Motivation

Based on the research data, it was obtained that the average normalized gain score of students' learning motivation who was treated with the ethnomatematic-based RME approach was 0.55 and 0.44 for students who were given conventional learning treatment. The results of this study indicate that the ethnomatic-based RME approach has an effect on increasing student motivation. Where the great influence of the ethnomathematic-based RME approach is 40.7% on the increase in student motivation.

The sample in this study were fourth grade elementary school students aged between 9-10 years. In this age range, children's cognitive development is at a concrete operational stage. According to Piaget's cognitive theory, the thinking of elementary school children is called concrete operational thinking. The concrete operational meaning referred to by Piaget is a condition in which children are able to function their minds to think logically about something that is concrete or real (Bujuri, 2018). According to Ibda (2015) at the concrete operational stage, children are mature enough to use logical thinking or operations, but only for current physical objects. In this stage, the child has lost the tendency towards animism and artisticism. His egocentricity is reduced and his ability to do conservation tasks is better. However, without a physical object in front of them, children at the concrete operational stage still have great difficulty completing logical tasks.

Based on Piaget's theory, children at the concrete operational stage need physical objects in front of them. One of the physical objects designed in learning with the ethnomatematics-based RME approach is the traditional Acehnese cultural house located in the protected forest of Langsa City. In introducing the concepts learned, students are invited to observe the parts of the Aceh traditional house that are related to flat geometric shapes. So that concept attachment will last longer because students construct these concepts through observation activities and with activities like this make students feel happy and also foster student learning motivation.

By using an ethnomatic-based RME approach that presents mathematical problems in accordance with what students experience, it will provide an understanding to students that mathematics plays a very important role in student life. So that students will experience benefits in learning mathematics. Based on the description above, it can be assumed that the increase in learning motivation of students whose learning using the environmentally based PMR approach is more significant than students whose learning uses conventional learning.

4.3 There is No Interaction between the Learning Approach and the Early Mathematics Ability towards the Improvement of Students' Mathematical Concept Understanding Ability

From the results of N-Gain data processing students' understanding of mathematical concepts to see the interaction between the learning approach and the students' initial mathematical ability to increase students' understanding of mathematical concepts between the experimental class and the control class, it was concluded that students' initial mathematical abilities increased students' understanding of mathematical concepts. From the normalized gain average, it can be seen that the understanding of mathematical concepts using the ethno-mathematics-based RME approach is higher when compared to students who use conventional learning. Furthermore, the difference in the average understanding of mathematical concepts between students in the experimental class and

control class respectively for students with low abilities is 0.1109, moderate ability is 0.0708 and high ability is 0.0444.

There is no interaction between the learning approach and KAM towards increasing students 'understanding of mathematical concepts, because the learning approach used in learning is more dominant in influencing the improvement of students' understanding of mathematical concepts. This can be seen from the results of the average difference, it appears that students with the low KAM category get an influence / benefit from the application of the ethnomatematic-based RME approach, namely with a score difference of 0.1109, meanwhile the difference in scores for students in the KAM category is 0.0708 and in the KAM category. 0.0444 high.

This is in line with the characteristics of the learning approach used, where the procedures used in the ethnomathematic-based RME approach provide meaningful learning experiences for students. This is based on the learning design used based on cultural aspects that are close to student life, and students are given student worksheets which are done in groups by demanding the active role of students in completing them. With students taking an active role in learning, of course students will be motivated to learn.

This is in line with the opinion of Wahyudin (2008: 47) in working on problems with other students, students benefit. Often, a student who has one viewpoint on a problem can benefit from the viewpoint of another student, who may reveal another aspect of the problem.

4.4 There is No Interaction between the Learning Approach and the Early Mathematics Ability towards the Improvement of Student Motivation

From the results of N-Gain data processing students 'learning motivation to see the interaction between the learning approach and the students' initial mathematics ability to increase student learning motivation between the experimental class and the control class, it was concluded that there was no interaction between the learning approach and KAM (low, medium and high) to increase student motivation. From the normalized gain average, it can be seen that the learning motivation of students who use the ethnomatics-based RME approach is higher when compared to students who use conventional learning. Furthermore, the average difference in learning motivation between students in the experimental class and control class respectively for low-ability students is 0.2006, medium-ability is 0.1156 and high-ability is 0.0888.

There is no interaction between the learning approach and KAM on increasing student motivation, because the learning approach used in learning is more dominant in influencing the increase in student learning motivation. This can be seen from the results of the average difference, it appears that students with the low KAM category have an influence / benefit from the application of the ethnomathematic-based RME approach, namely with a score difference of 0.2006, meanwhile the difference in scores for students in the KAM category is moderate 0.1156 and in the KAM category. 0.0888 high.

The ethnomatics-based RME approach provides a meaningful learning experience for students. Giving realistic culture-based problems can increase students' curiosity and motivation to find solutions. With group discussions, students can exchange ideas and it is easier to solve the problems given. After solving realistic problems, students are asked to discuss and compare answers with other groups. Through discussion and presentation activities, students are trained to communicate and increase their self-confidence so that in the end they have enthusiasm for learning.

RME is mathematics learning that is carried out through interaction with the environment and starts from real problems experienced by students and emphasizes more process skills in solving the problems given (Ananda, 2018). Then through exploration of real situations or real problems, students reinvention the mathematical concepts they will study (Rohaeti, Hendriana, & Sumarmo, 2019). This learning is considered helpful because it can train students' mathematical reasoning abilities (Yunus, Hulukati, & Djakaria, 2020).

V. Conclusion

Based on the results of data analysis and research findings that emphasize understanding mathematical concepts and student learning motivation, several conclusions are obtained which are the answers to the questions posed in the problem formulation. These conclusions are as follows:

1. There is an influence of the ethnomatics-based RME approach on the improvement of students 'understanding of mathematical concepts, where as much as 47% of the ethnomatics-based RME approach affects the increase in students' understanding of mathematical concepts.
2. There is an influence of the ethnomathematic-based RME approach on the increase of student learning motivation, where 40.7% of the ethnomatics-based RME approach affects the increase in student learning motivation.
3. There is no interaction between the learning approach and the students 'initial mathematics ability (KAM) to increase students' understanding of mathematical concepts.
4. There is no interaction between the learning approach and students' initial mathematics ability (KAM) to increase student learning motivation.
5. Treatment with the ethnomatematic based RME approach has a positive effect on increasing understanding of mathematical concepts in low ability students with a selection of 0.106 between the experimental class and the control class.

References

Afrianti, V. (2011). *Peningkatan Pemahaman Konsep dan Komunikasi Matematik dengan Pendekatan Penemuan Terbimbing Berbantuan Software Autograph*. Tesis. Medan: Program Pascasarjana Unimed.

Ananda, R. (2018). Penerapan Pendekatan Realistics Mathematics Education (RME) untuk Meningkatkan Hasil Belajar Matematika Siswa Sekolah Dasar. *Journal Cendekia: Jurnal Pendidikan Matematika*, 2 (1): 125-133.

Bishop, J. A. (1994). *Cultural Conflicts in the Mathematics Education of Indigenous People*. Clyton, Viktoria: Monash University.

D'Ambrosio, U. (1994). 'Cultural framing of mathematics teaching and learning', in R. Biehler, R.W. Scholz, R. Sträßer and B. Winklelmann (eds.). *Didactics of Mathematics as a Scientific Discipline*. Kluwer Academic Publishers. Dordrecht. pp. 443–455.

Dafril, A. (2011). Pengaruh Pendekatan Konstruktivisme Terhadap Peningkatan Pemahaman Matematika Siswa. *Prosiding PGRI Palembang*. Tidak Diterbitkan.

Danoebroto, S.W. (2012). Model Pembelajaran Matematika Berbasis Pendidikan Multikultural. *Jurnal Pembangunan Pendidikan: Fondasi dan Aplikasi*, 1 (1): 94-107.

Depdiknas. (2003). *Pedoman Khusus Pengembangan Sistem Penilaian Berbasis Kompetensi SMP*. Jakarta: Depdiknas.

Dickinson, P., Eade, F. & Hough, S. (2010). Using Realistic Mathematics Education with Low to Middle Attaining Pupils in Secondary Schools. *Proceedings of the British Congress for Mathematics Education*. 5 (1): 34-46.

Duffin, J. M., & Simpson, A. P. (2000). A Search for understanding. *Journal of Mathematical Behavior,* 18 (4): 415-427.

Fauzan, A. (2011). Pendidikan Matematika Realistik: Suatu Tantangan dan Harapan. *Jurnal Matematka USD*. 3 (2): 10-20.

Gravemeijer. (1994). *Developing Realistic Mathematics Education*. Utrecht: Freudenthal Institute.

Handayani, H. (2015). Pengaruh Pembelajaran Kontekstual Terhadap Kemampuan Pemahaman dan Representasi Matematika Siswa Sekolah Dasar. *Jurnal Pendidikan Guru Sekolah Dasar*, 1 (1): 142-149.

Hamdu, G., & Agustina. L. (2011). Pengaruh motivasi belajar siswa terhadap prestasi belajar IPA di Sekolah Dasar. *Jurnal Penelitian Pendidikan,* 12 (1): 90-96.

Herawaty, D. (2018). *Students* metacognition on mathematical problem solving through ethnomathematics in Rejang Lebong, Indonesia. *The 6th South East Asia Design Research International Conference (6th SEA-DR IC). IOP Publishing*.

Irhamna, Amry, Z., and Syahputra, H. (2020). Contribution of Mathematical Anxiety, Learning Motivation and Self-Confidence to Student's Mathematical Problem Solving. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal Vol 3 (4): 1759-1772.

Ibda, F. (2015). Perkembangan kognitif: Teori Jean Piaget. *Intelektualitas*, 3 (1): 27-38.

Mueller, M., Yankelewitz, D., & Maher, C. (2011). Sense Making as Motivation in Doing Mathematics: Results from Two Studies. *The Mathematics Educator*, 20 (2): 33-43.

Murniati, L.D, Candiasa, I. M & Kirna, I. M. (2013). Pengembangan Perangkat Pembelajaran Matematika Realistik Untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa SMP. *Jurnal Pendidikan dan Pengajaran*, 46 (2): 23-30.

Nasution, M. (2016). *Pengaruh Model Pembelajaran Berbasis Masalah dan Motivasi Terhadap Hasil Belajar IPA Siswa di Kelas V SD Swasta Muhammadiyah 01 Pematang Siantar*. Tesis. Medan: Universitas Negeri Medan.

Nasution, Y.S., Syahputra, E., and Mulyono. (2020). The Development of Learning Instrument Using Problem Based Learning Model to Improve Critical Thinking of Junior High School Students. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal Vol 3 (3): 1501-1508.

Rachmawati, I. (2012). Eksplorasi Matematika Masyarakat Sidoarjo. *MATHEdunesa*, 1 (1).

Rohaeti, E. E., Hendriana, H., & Sumarmo, U. (2019). *Pembelajaran Inovatif Matematika Bernuansa Pendidikan Nilai dan Karakter*. Bandung: PT Refika Aditama.

Sardiman, A. M. (2014). *Interaksi & Motivasi Belajar Mengajar*. Jakarta: Rajawali Pers.

Siagian, M. D., & Sembiring, M. (2018). Perbedaan Peningkatan Kemampuan Koneksi Matematis Siswa Ditinjau Melalui Aplikasi Pendekatan Pembelajaran Savi Berbasis Lingkungan dan Pembelajaran Ekspositori. *MES: Journal of Mathematics Education and Science*, 4 (1): 59-65.

Sumaryati, I., Rahayu, R., & Utaminingsih, S. (2018). Peningkatan Kemampuan Pemahaman Konsep Matematika Melalui Model Guided Discovery Learning Berbantuan Permainan Kaki Bima. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, 1 (1): 59-66.

Suparta, D.G., Lasmawan, I.W., & Marhaeni, A.A.I.N. (2015). Pengaruh model pembelajaran kooperatif teknik make a match terhadap motivasi belajar dan hasil belajar IPS. *e- Journal Program Pascasarjana Universitas Pendidikan Ganesha Jurnal Program Studi Pendidikan Dasar*, 5: 1-12.

Suprijono, A. (2009). *Cooperative Learning: Teori dan Aplikasi PAIKEM*. Yogyakarta: Pustaka Pelajar.

Surat, I. M. (2018). Peranan Model Pembelajaran Berbasis Etnomatematika sebagai Inovasi Pembelajaran dalam Meningkatkan Literasi Matematika. *Emasains*, VII (2): 143-154.

Susilowati, E. (2018). Peningkatan Aktivitas dan Hasil Belajar Matematika Siswa SD Melalui Model Realistic Mathematic Education (RME) Pada Siswa Kelas IV Semester I Di SD Negeri 4 Kradenan Kecamatan Kradenan Kabupaten Grobogan Tahun Pelajaran 2017/2018. *PINUS: Jurnal Penelitian Inovasi Pembelajaran*, *4* (1): 44-53.

Tarigan, D. (2006). *Pembelajaran Matematika Realistik*. Jakarta: Depdiknas.

Wahyudin. (2008). *Pembelajaran dan Model-Model Pembelajaran*. Bandung: Universitas Pendidikan Indonesia.

Wijaya, A. (2012). *Pendidikan Matematika Realistik*. Yogyakarta: Graha Ilmu.

Winarno, B. (2012). *Kebijakan publik: Teori, proses, dan studi kasus*. Yogyakarta: Caps.

Yulianingsih, N. (2017). *Self Help Emergency*. Yogyakarta: Rapha Publishing.

Yunus, N. A., Hulukati, E., & Djakaria, I. (2020). Pengaruh Pendekatan Kontekstual Terhadap Kemampuan Penalaran Matematis Ditinjau dari Gaya Kognitif Peserta Didik. *Jambura Journal of Mathematics (JJoM)*, 2 (1): 30-38.

Zhang, W., & Zhang, Q. (2010). Ethnomathematics and its integration within the mathematics curriculum. *Journal of Mathematics Education*, 3 (1): 151-157.