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EFFORTS TO IMPROVE MATHEMATICAL CREATIVE THINKING ABILITY OF STUDENTS IN CLASS VIII-A SMP BPK PENABUR HOLIS BANDUNG IN MATERIALS OF GEOMETRY FLAT SIDE OF SOLID FIGURE THROUGH REALISTIC MATHEMATICS EDUCATION APPROACH

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Abstract

This research aimed to analyze the role of Realistic Mathematics Education (RME) approach in enhancement, and achievement of Mathematical Creative Thinking Ability (MCTA) in flat side of solid figure of Pyramid dan Prism learning of Junior High School students' would improve students' mathematical creative thinking in terms of students' minimum criteria of mastery learning (KKM). The method used was classroom action research with planning, implementation of the action, evaluation, and reflection design in 3 cycle. The subject of this research was 8th-A graders in SMP BPK Penabur Holis Bandung. The instrument used an essay test on MCTA, observation sheets, and interview sheets. Data analysis was done quantitatively, in quality and descriptive basis. The results showed that: (1) Students ' learning through RME was better than their previous grades, (2) MCTA of students whose study used the RME approach enhancement 32.28% from cycle I to cycle II and 6.45% from cycle II to cycle III, (3) Students' MCTA in each indicator have equalization.

Keywords: Mathematical Creative Thinking, Pyramid, Prism, Realistic Mathematics Education

Abstrak

Penelitian ini bertujuan untuk menelaah peranan pendekatan Realistic Mathematics Education (RME) dalam peningkatan, dan pencapaian Kemampuan Berpikir Kreatif Matematik (KBKM) siswa SMP pada materi bangun ruang sisi datar tentang limas dan prisma ditinjau dari Kriteria Ketuntasan Minimum (KKM). Metode yang digunakan adalah penelitian tindakan kelas dengan desain perencanaan, pelaksanaan tindakan, evaluasi, dan refleksi pada 3 siklus. Subjek pada penelitian ini adalah kelas VIII-A di SMP BPK Penabur holis Bandung. Instrumen yang digunakan adalah tes uraian KBKM, lembar observasi, dan lembar lembar wawancara. Analisis data secara kulitatif, kuantitatif, dan deskriptif. Hasil penelitian menunjukkan bahwa: (1) Hasil belajar siswa lebih baik dari nilai-nilai siswa sebelumnya, (2) KBKM siswa yang pembelajarannya menggunakan pendekatan RME meningkan 32.28% dari siklus I ke Siklus II, dan 6.45% dari siklus II ke siklus III, (3) Kemampuan berpikir kreatif siswa pada setiap indikatornya mengalami pemerataan.

Kata Kunci: Berpikir Kreatif Matematik, Limas, Prsima, *Realistic Mathematics Education*

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INTRODUCTION

Mathematics as a basic science from all fields of science is very important for us to know. Therefore, mathematics needs to be taught at all levels of formal education, from elementary schools to tertiary institutions. The importance of mathematics can be seen from the benefits and usefulness of mathematics in everyday life, also for the development of science. Therefore, the Ministry of National Education continues to improve the curriculum, including the ability to think logically, analytically, systematically, critically and creatively as a Mathematics Subject Competency Standard.

According to the Ministry of National Education (Fitriyani, 2017), life skills are abilities in a person to be brave in facing life's challenges without feeling pressured, proactively and creatively searching and overcoming all problems by finding solutions. To find and overcome a problem requires thinking skills. Thinking skills will arise when students are faced with a problem that must be solved. The thinking skills needed to solve problems are critical, systematic, logical and creative thinking. The ability to think creatively is needed by students given that today science and technology are developing very rapidly and allows anyone to obtain information quickly and easily with abundant from various sources and anywhere in the world. This resulted in rapid changes in the order of life and global changes in life. If students are not equipped with the ability to think creatively then they will not be able to process, assess and retrieve the information they need to face these challenges. Therefore the ability to think creatively is an important ability in mathematics.

The ability to think creatively is a person's ability to give birth to something new, both in the form of ideas and real work that is relatively different from what was before. Laurence (Wijaya, 2012) said, the skills that must be learned are creativity. A person's failure to carry out an innovation or create creation is not because of a lack of potential to be creative but because of a lack of knowledge managing all the potential he has to achieve a goal. According to Adams and Hamm (Wijaya, 2012), the ability to think creatively as a natural potential in humans which can be increased through practice and awareness. A learning environment that can develop creative potential optimally, is needed by students who have creative potential since they were born. Creative thinking is very important to be developed so that students can be useful for themselves and also others. Ruseffendi (1991) says creative people benefit both themselves and others.

Another definition of creative thinking is the thought process that is used when students want to bring in or come up with a new idea. Some experts provide definitions of creative thinking that are essentially the same, Johnson (Riyanto, 2007), Fauzi (Supardi, 2012), and Yamin (2011), which reveal many new possibilities. Therefore, the ability to think creatively is a person's ability to give birth to something new, both in the form of ideas and real work that is relatively different from those that have already existed to solve a problem. Juhari (Indriana, Arsyad, & Mulbar, 2015) mentioned that mathematics is a tool that functions to develop creativity, and its development is based on reasoning, logical thinking, critical, objective and rational in everyday life and in the development of science and technology. As for the indicators

of creative thinking, Munandar (Anisa, 2012) argues, fluent thinking, flexible thinking, original thinking, elaborative thinking.

Guilford (Supardi, 2012) distinguishes between attitude and no attitude traits related to creativity. Attitude characteristics of creativity (creative thinking) include fluency, flexibility (flexibility), and originality in thinking, these characteristics are operationalized in the divergent thinking test. But creative productivity is not the same as divergent productivity. The extent to which a person can produce creative achievement is determined by the characteristics of non-attitude (affective). Puccio and Murdock (Sumarmo, 2012) suggest that creative thinking includes aspects of cognitive, affective and metacognitive skills. Broadly speaking, it can be concluded that the ability to think mathematically creative is a mental activity that is used to find many possible answers to a problem, and generate ideas or new ideas, relatively different from those that have existed before.

Ruseffendi (Indriana et al., 2015) explains that to reveal or capture creative people, open questions (divergent) should be used because divergent questions require those asked to suspect, make hypotheses, check whether or not the hypotheses, review the solution thoroughly and thoroughly draw conclusions. From these descriptions show that it should be the ability to think creatively mathematically developed or improved in learning mathematics in schools At least there are three aspects of thinking skills, namely: problem solving, critical thinking and creative thinking. People tend to look at creative thinking as generative.

The facts on the ground show that the average scores of Class VIII-A SMP BPK Penabur Holis junior high school students still do not reach the KKM where the questions used are still routine. Therefore, based on the importance of students' mathematical creative thinking abilities and student learning outcomes beforehand is still a low need to hold efforts in overcoming these problems. Likewise, several studies have found that secondary school students still experience difficulties in solving mathematical problems and in mathematical reasoning. But after getting innovative learning that involved the education of values and characters, their problem solving abilities and mathematical reasoning increased and showed a positive attitude towards learning mathematics

To overcome the above problems, a learning approach is needed that can encourage students to be active, creative and think critically and have a positive attitude in achieving the expected competencies. Many approaches/models/ methods of teaching mathematics are relevant, one of which is to apply the Realistic Mathematics Education (RME) approach in mathematics learning. Research on learning with the RME approach was also conducted in SMP by (Pertiwi, 2018) which compared student learning outcomes using the RME approach and ordinary learning. The results of this study also showed that students behaved more positively when taught with the RME approach.

The RME approach is an approach that emphasizes bringing mathematics to meaningful teaching by linking it to real life that is realistic. Students are presented contextual problems, namely problems related to realistic situations. The word realistic here is intended as a situation that can be imagined by students or describe situations in the real world. The RME approach has several advantages according to Suwarsono (Hadi & Plomp, 2009) including, Providing clear understanding to students about the relationship between mathematics and everyday life and about the usefulness of mathematics in general for humans, mathematics is a field of study that can be constructed and developed itself by students and by others not only by those who

are called mathematicians, the way to solve a problem or problem does not have to be singular, and it doesn't have to be the same between one person and another, learning mathematics learning process is the main thing and to learn mathematical people have to go through the process themselves and find their mathematical concepts with the help of teachers, combining the advantages of various other learning approaches that are also considered superior namely between the problem solving approach, constructivism approach, and learning-based approach environment.

Judging from the advantages of this approach can provide contextual problems according to the real environment/real world, then students are required to think creatively as well as a positive attitude towards mathematics. This means that each student must solve the problem by the ideas or new ideas they find and ways of thinking that are reasonable (rational) and deep focused on deciding what is believed and what to do and the relationship between mathematics itself with real life. The description above, researchers are interested in an alternative form of learning to train students' mathematical creative thinking abilities and reflect active student involvement, namely mathematics learning with the Realistic Mathematics Education approach. Therefore, research that focuses on efforts to improve the mathematical creative thinking abilities of students at BPK Penabur Holis Bandung Middle School class VIII-A.

Based on the background of the problem above, in this case, the researcher formulated the problem, namely whether the mathematical creative thinking ability of junior high school students by using the RME approach can be increased in the material to build flat side spaces?

In line with the above problems, the outline of this study aims to examine the mathematical creative thinking ability of students of BPK BPK Penabur Holis Bandung VIII-A class by using the RME approach to the material on the flat side space building.

METHOD

The method used in this research is Classroom Action Research (CAR) or classroom action research, which is research that is intended to provide information on how appropriate actions to improve teacher abilities and student potential. Therefore, this research is focused on actions as an appropriate effort to improve the ability of teachers to teach and increase ownership of students' specific creative mathematical thinking abilities in mathematics learning on the BRSD topic. The subject of the study was class VIII-A at BPK Penabur Holis Bandung Junior High School in the 2018/2019 school year. Each cycle is carried out according to the desired changes achieved. Before the action is carried out, the students 'previous grades are analyzed to find out the students' initial abilities and relate to the topic to be taught namely BRSD. Each cycle in this study includes the following procedures: 1) planning, 2) implementation, 3) observation and evaluation, 4) reflection. The test used to measure mathematical creative thinking skills consists of four-item questions in the form of descriptions in each cycle, and there are observation sheets and interview sheets. The results of the study were analyzed descriptively, quantitatively, and qualitatively.

RESULTS AND DISCUSSION

Results

The recapitulation of the results of research into students' mathematical creative thinking abilities using the Realistic Mathematics Education (PRME) Approach is presented in Table 1 below:

Table 1. Recapitulation of Test Results

	Problem routine test		**Problem routine test math creative thinking skills**							
	Daily tests	**%**	**Cycle I**	**%**	**Cycle II**	**%**	**Cycle III**	**%**	**All Cycle**	**%**
$\bar{x}$	60,81	60,81	73.50	73.50	75.21	75.21	77.39	77.39	75.37	75.37
Gain	-	-	.32	32.28	.064	6,45	.087	8.79	0.37	37.15
KKM ≥ 70	9 Stud	32.14	15 Stud	53.57	21 Stud	77.78	21 Stud	77.78	21 Stud	77.78
KKM < 70	18 Stud	64.29	12 Stud	42.86	6 Stud	22.22	6 Stud	22.22	6 Stud	22.22
max	98.24		99		98		98		83,33	
min	19.62		54		58		50		45,00	

Note: (SMI) creative thinking = 20 which is changed on a scale of 100

Table 2. Recapitulation of The Achievement of MCTA Based on Indicators

Indicator	**Cycle I**	**Cycle II**	**Cycle III**
Fluency	88,86%	66,14%	82,57%
Flexibility	65,57%	58,14%	79,29%
Elaboration	78,57%	57,14%	71,43%
Originality	60,71%	61,29%	76,29%

Table 3. Recapitulation of Student Difficulties in Resolving The Problem MCTA

Indicator	**Cycle**	**Full Indicator**		**Answer Less precise Or wrong**		**Not Answer**		**Difficulty**
		Jml	**%**	**Jml**	**%**	**Jml**	**%**	
(*Fluency*)	1	17	60,71%	11	39,29%	0	0%	Students misunderstand the intent of the problem, accustomed to working on routine causes students to struggle to do non-routine problems, not in accordance with the minimum asked about
	2	7	25,00%	21	75%	0	0%	
	3	7	25%	21	75%	0	0%	
(*Flexibility*)	1	2	7,14%	26	92,86%	0	0%	Students misunderstand the intent of the problem, accustomed to working on routine causes students difficulty working on non-routine problems, wrong entering the value, wrong in analyzing, cannot determine a different angle of view
	2	9	32,14%	19	67,86%	0	0%	
	3	3	10,71%	25	89,29%	0	0%	
(*Elaboration*)	1	9	32,14%	19	67,86%	0	0%	Students misunderstand the intent of the problem, accustomed to working on routine causes students difficulty working on non-routine, difficult to make problems and resolve their own problem, can not associate the topic of the problem with other materials
	2	5	10,71%	25	89,29%	0	0%	
	3	12	42,86%	16	57,14%	0	0%	
(*Originality*)	1	9	32,14%	19	67,86%	0	3,85%	Students misunderstand the intent of the problem, accustomed to working on routine causes students to struggle to do non-routine problems, sub the value, wrong in analyzing
	2	7	25%	21	75%	0	0%	
	3	10	35,71%	18	64,29%	0	0%	

Based on Table 1, the average student test scores before the action is 60.81 and still far to reach the KKM limit. Only 9 students were 32.14% of students who experienced mastery learning. There is a very large gap between the minimum and maximum value of students, namely 98.24 with 19.62. From the data, it can be seen that daily questions that use routine questions of student scores are still not optimal. Furthermore, researchers can take action learning by using the RME approach to improve the ability to think creatively mathematically, namely using non-routine questions on BRSD material. Seeing that the material geometry is difficult material and seeing the results of the previous value for geometry material is not optimal, then the material

chosen to Build a Flat Side Space as a topic of improvement with improved instruments is the ability to think mathematically creative thinking.

After the first cycle, student learning outcomes reached an average of 73.50 where the average grade of students has exceeded the KKM 70. The value of individual students has also increased from 9 students to 15 students who passed the KKM. From the lowest score of 19.62 to 54.00 it shows that students who have difficulty in mathematics if given the learning with the RME approach can increase. An increase in students by 0.32 means that they are at a moderate level. In cycle II the average student score was 75.21, where 21 students experienced mastery learning and 6 students had not graduated. Even though the maximum value has decreased by 1 point, the minimum value of students has increased from 54 to 58. Seeing the student gain is only 0.06 which is at this low level due to the learning interval of only 1 week. Based on the third cycle the average student score reached 77.39 which experienced an increase of 0.087 at a low level. Even though the minimum grade of students dropped from 58 to 50, the number of students completing the learning remained unchanged.

In Table 3, a calcification of students' difficulties in solving the MCTA questions is presented. Most students find it difficult to work on this MCTA problem shown by not achieving the full answer expected in each indicator. Difficulties occur because students misunderstand the purpose of the problem, accustomed to working on routine problems causing students to work on non-routine problems, not in accordance with the minimum requested problems, incorrectly entered grades, wrong in analyzing, unable to determine different points of view difficult to make problems and solve the problem by yourself, unable to associate the topic of the problem with other material, and wrong in analyzing.

Discussion

At the beginning of the selection of research subjects, the researcher first reviewed the Test of Logical Thinking and Longest, as well as reviewing the average value of students' daily tests at school. Characteristically class VIII-A has a variety of abilities, this causes class VIII-A to be chosen as a subject. Seeing that the material geometry is difficult material and seeing the results of the previous value for the material geometry is not optimal, the material was chosen to Build Flat Side Space as a topic of improvement. This class action research will be carried out in 3 cycles where each cycle consists of 2 meetings namely 1 learning and 1 meeting is a test. Before starting the research in the first cycle, the researchers conducted a learning plan by preparing learning lessons such as lesson plans, worksheets, teaching materials, observation sheets, and interview sheets. Topics covered are prism elements and a prism surface area. The lesson plans and worksheets are designed based on the characteristics of the RME approach, researchers are still doing RME learning in general. During the implementation of the teacher, the model prepares the class with individual settings where students work on worksheets independently but students are allowed to interact with their classmates or ask the teacher. Considering that in everyday life real objects in the form of prisms are very much easier for students to imagine mathematical topics so that individual students can construct their knowledge to collect mathematical concepts /ideas/principles. on the topic of the surface area of the prism, each student gave a BRSD prism made of paper in various forms. Students are allowed to choose 1 prism, then the teacher asks students to break down / dismantle the prism so that a network of prisms is formed. In LKS students are guided to find general formulas in finding the surface area of a prism. Each student's work is asked to present the results of their work. During KBM in the class, the observer records every activity of the model teacher and students in the class.

1) Cycle I

a. Learning Activities

Before starting the research in the first cycle, the researchers conducted a learning plan by preparing learning lessons such as lesson plans, worksheets, teaching materials, observation sheets, and interview sheets. Topics covered are prism elements and a prism surface area. The lesson plans and worksheets are designed based on the characteristics of the RME approach, researchers are still doing RME learning in general. During the implementation of the teacher, the model prepares the class with individual settings where students work on worksheets independently but students are allowed to interact with their classmates or ask the teacher. Considering that in everyday life real objects in the form of prisms are very much easier for students to imagine mathematical topics so that individual students can construct their knowledge to collect mathematical concepts/ideas/ principles. on the topic of the surface area of the prism, each student gave a BRSD prism made of paper in various forms. Students are allowed to choose 1 prism, then the teacher asks students to break down / dismantle the prism so that a network of prisms is formed. In LKS students are guided to find general formulas in finding the surface area of a prism. Each student's work is asked to present the results of their work. During KBM in the class, the observer records every activity of the model teacher and students in the class. At the 2nd meeting, an evaluation stage was held where students ran the first cycle test with the CBC questions.

b. Student difficulties on BRSD material

Through the RME approach with individual settings, students construct their knowledge. However, some students are confused about processing the instructions in the worksheet, students have difficulty in drawing the right building space because if the position of the lines is not right it causes an understanding of the elements that are not good. Therefore students need personal teacher guidance to help construct their knowledge.

Difficulties of students in solving MCTA questions in solving the problem of the ability to think creatively on each indicator is still not optimal. At each indicator, student achievement is still below 23, the lowest indicator of the ability to think creatively on the indicator originality. Students have difficulty because the questions use variables that cause foreign students because they do not use Arabic numerals.

Students who achieve perfect scores on flexible thinking indicators. The work on these questions requires a high imagination because interpreting the questions requires two different points of view. Most students misunderstand the purpose of the problem or as requested by the problem.

c. Repair

After completing the test the researcher carries out a reflection that is checking student answers and reviewing the results of observations. The result is the highest value of the test before the study and after the first cycle decreased. After the researchers reviewed further which caused a decline in grades because the questions used at the time of the test were non-routine questions, students were still confused working on high-level ability questions. therefore, the researcher made improvements by giving a lot of daily questioning exercises with MCTA questions and class settings would be carried out in groups so that student learning outcomes were better because students had a special domain in discussing with their peers, and reduced the potential for individual learning.

2) Cycle II

a. Learning Activities

In cycle II the material discussed is the elements of the pyramid and the surface area of the pyramid. Before learning, researchers conduct planning, namely designing lesson plans, worksheets, teaching materials, observation sheets, and interview sheets. At meeting 1 in cycle II the material discussed was the elements of a pyramid, At the beginning of learning the teacher divided students into groups and the teacher asked students to sit in groups. Then, the teacher distributes 1 worksheet to each student but is done in a group discussion. When the topic of the surface area of the pyramid the teacher distributed 1 pyramid to each group and students were asked to identify the pyramid until they opened the pyramid nets. At KBM students look more enthusiastic in learning and the position of the model teacher in reviewing the assignment of students is easier with a group setting. The teacher asks student representatives to the group to present the results of their group discussions where the group provides comments or responses. When presenting students are bolder because they have the support of a group of friends and the answer he gave was a shared answer.

b. Student difficulties on BRSD material

When learning difficulties students are ashamed limas. Unlike the prism, the pyramid does not have the upper side. Students find it difficult to determine diverse pyramid nets. Students have difficulty analyzing images.

c. Difficulties of students in solving MCTA questions

student achievement is still not optimal, given the increasing difficulty of the material and the students' vibrational abilities are very necessary. The lowest achievement is the elaborative thinking indicator because students find it difficult to make their own mathematical problems from a situation. Students are accustomed to working on routine problems when students are asked to create problems and solve their problems, students cannot associate the topic of the problem with other material. Also, in other questions, students were wrong in analyzing the questions.

d. Repair

After the test is given the researchers examine and review learning in cycle II. Compared to the first cycle, in the second cycle, the average value of the class increased and students who got mastery learning increased quite a lot. The deficiencies found in the second cycle are the less optimal results of student work on problems with the elaborative thinking indicator most students are wrong in analyzing the questions, students have difficulty in making and solving their problems. Therefore, improvements will be made in the third cycle, namely, in the student worksheets, students will be asked to analyze a lot, submit many problems and solve their problems and will increase the level of teaching and learning questions.

3) Cycle III

a. Learning Activities

In cycle III, the students discussed material is the volume of the pyramid and prism. In the planning stage as in the previous cycles, the researcher prepares teaching materials in the form of learning media, lesson plans, worksheets, observation sheets, and interviews. Class settings remain in groups. At the beginning of learning, students are asked to sit with the group. Students observe demonstrations about the volume of the pyramid and prisms on topics frequently

encountered in daily life. Each student is given 3 worksheets that will be discussed in groups. The learning steps implemented are the same as the previous meeting.

b. Student difficulties on BRSD material

In the material volume of BRSD students have difficulty in constructing their knowledge to find the volume of prism and pyramid, because the base of the pyramid and prism can be n-shaped in terms.

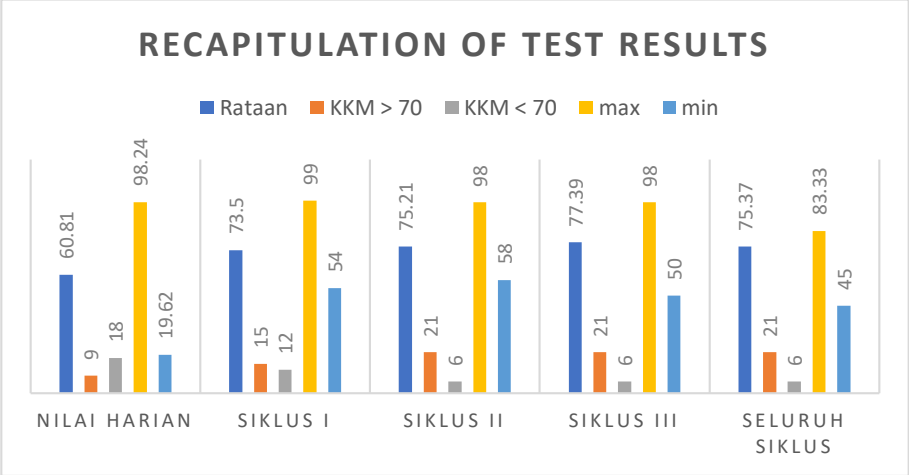
c. Difficulties of students in solving MCTA questions

Students are still low in the indicators of elaborative thinking. Even though the deficiencies in the second and third cycles are still the same, but the choice of increasing the achievement of the indications is quite good, where the material in the third cycle is more difficult. Next is a table presented by students' mistakes in completing the questions in cycle III. Arranging questions on a topic and completing it by yourself is not an easy thing because the elaborative achievement is still not optimal. But in terms of the lowest value is at the original.

d. Repair

After the test, check the answers and analyze the whole cycle III. The results obtained that the average grade increased again. Analyzed more in the achievement of students in each of the CBC indicators as well as each indicator is almost balanced, almost 70-80% of these achievements indicate good student achievement. The increase in students who answered to meet the indicators also became evidence of success in teaching

Graph 1. Recapitulation of Test Results



Overall in this study,

1. Students Creative Mathematical Thinking Ability

Based on Grafik 1 descriptive statistics results of students of class VIII-A SMP BPK PENABUR HOLIS Bandung using the RME learning approaches have increased in learning outcomes. it can be concluded that learning with the RME approach can improve students' mathematical abilities, in addition to reducing the inequality in the ability of each student in the class.

2. Student Performance in Learning in Class

This is because when learning with the RME approach students are required to be more active, creative, and critical in modeling problems, finding problem solving, so that when students are given other problems in the form of mathematical problems, these students are accustomed to

dealing with mathematical creative thinking problems. In line with research conducted by Fajriani (2016) that the achievement and improvement of mathematical creative thinking abilities of junior high school students whose learning uses a model-eliciting activities approach are better than students whose learning uses the usual approach.

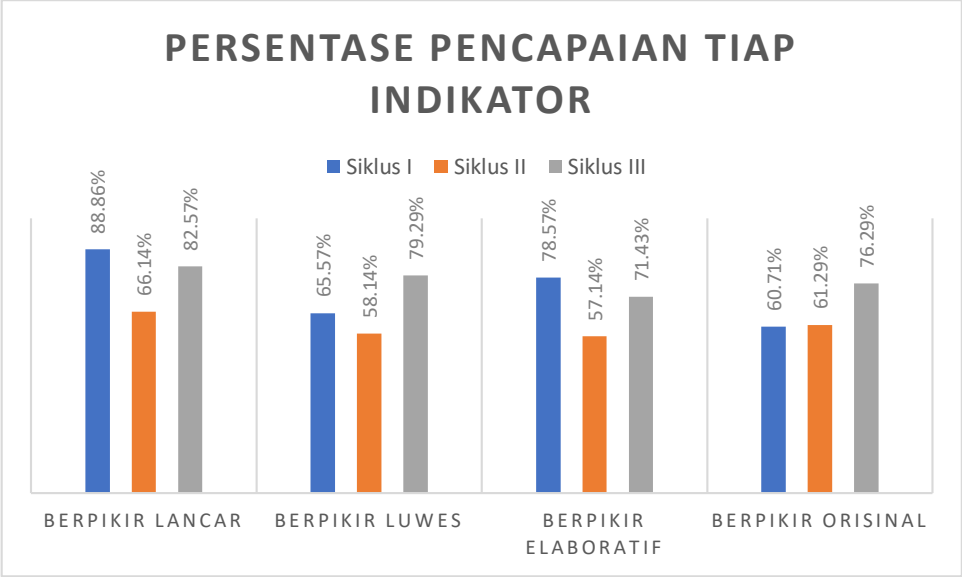
3. Difficulties in the Material to Build Flat Side Space

The material provided in this study is to build a flat side space. In general, students already understand the construction of flat side spaces. However, some aspects have not been mastered by students, namely aspects of developing problem solving strategies, in solving questions in the form of stories. Another aspect is the aspect of mastery of concepts, students find solutions related to story problems. Another difficulty is the aspect of constructing mathematical modeling.

4. Difficulties in Solving Problems of Mathematical Creative Thinking Ability

Difficulties of students when completing creative thinking questions based on Table 2 or graph 2, variations in student answers to each problem: (1) students have difficulty in finding answers in more than one way, but some students are already proficient in completing them; (2) most students have not been able to solve the problem, they have difficulty in finding the cut points with a slightly different form of inequality. This means they are difficult to see the problem with a different perspective; (3) most students have understood questions and can solve problems, but some students have difficulty in expressing new things to make conclusions; (4) story questions made by students are too simple, this shows they have difficulty in expressing and composing a story problem. (5) almost all students find it difficult to construct story problems into mathematical models and students find it very difficult to enrich and develop a product because they are not familiar with non-routine problems.

Graph 2. Percentage of Mathematical Creative Thinking Ability Achievement Every Indicator



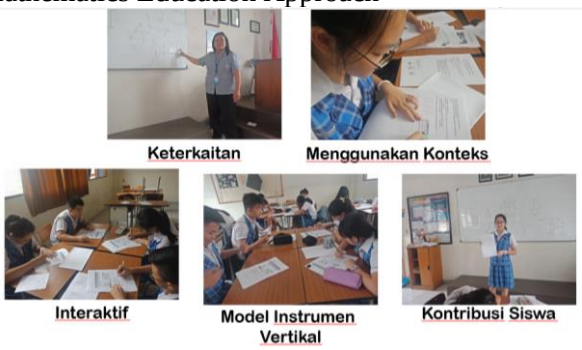


Figure a. Teaching and learning activities

CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that the application of the RME approach can be used as an alternative effort to improve the mathematical creative thinking ability of students of class VIII-A at SMP BPK Penabur Holis Bandung. The average MCTA score in each cycle is good because it is above the KKM according to the technique of making conclusions. Thus, from cycle I to cycle III, the MCTA experienced a steady increase over time. The average test scores of students before the study was 60.81. In the first cycle test, the student's score was 73.50, in the second cycle was 75.21, and in the third cycle was 77.39. Based on the MCTA indicator students are low on the indicator of thinking fluently. Although it did not experience a rapid increase, for the application of the ability of the MCTA in this school gave positive results, namely the ability of students to be more evenly distributed. Students are interested in learning because the things they are learning are close to their environment and useful for their future. Using approaches that are oriented towards real-life causes students to learn meaningfully.

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