Use of RME approach in learning of KPK and FPB to increase critical thinking skill

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Abstract This paper is a Classroom Action Research conducted in 5th grade of Primary School. This research was conducted in three cycles to see the effectiveness of Realistic Mathematics Education approach in learning about the Biggest Fellowship Factor and Multiple Fellowship in Improving Student Critical Thinking Abilities. Critical Thinking is one of four 21st century skill through Mathematics. In the process of lesson, students will be trained in other skills; communication and collaboration. The background of this research is students who have a concept of mathematical form but not able to solve daily lives problems. The implementation of the study in the first cycle of learning to use the problems in their daily lives with completion student by using a real object. In second cycle of learning with daily lives problems, the students do a simulation of FPB. In third cycle of learning with daily lives problems and students solve problems using the math concept, the students has been managed to construct a concept. Author argues that this concept will be able to be used to solve the problem and match the way with the RME approach. The result of research proven learning Realistic math can improve students Critical Thinking abilities.

1. Introduction
Critical Thinking skills is one of four 21st Century skill through Mathematics the other skill is problem solving communication and collaboration. Problem solving is also one of the mathematical literacy capabilities as defined by PISA (Program for International Student Assessment). Mathematical literacy is a person's ability to formulate, use and interpret mathematics in various concepts including mathematical reasoning, using concepts, procedures and facts as tools to describe, explain and predict a phenomenon. In problem solving student need to have critical thinking skill. That means that mathematical literacy can help a person recognize the role of mathematics in life and as a basis in determining the decisions society needs.

The objective of learning mathematics in elementary school as stated in Permendiknas no 22 of 2006 stated that the objectives of mathematics education in elementary school are (1) understanding the concept of mathematics, explaining the interconnection of concepts and applying concepts or algorithms with accurate, efficient and precise in problem solving. (2) used reasoning in patterns and traits, performing mathematical manipulations in generalizing, compiling evidence or explaining mathematical ideas and statements. (3) to solve problems that include the ability to understand problems, design mathematical models, solve models and interpret the solutions obtained. (4) communicating ideas with symbols, tables, diagrams or other media to clarify the problem (5) having
an appreciation of the usefulness of mathematics in life, that is to have curiosity, attention, and resilience and confidence in problem solving.

In fact, mathematics learning in elementary schools in general can not increase students' critical thinking skills. In a test problem that contains indicators of problem solving ability, less than 10% of students in action classes are able to find solutions to the problem correctly, whereas the concepts tested have been mastered by students is evidenced by the ability of students to answer mathematical problems in the form of operations. Moreover, the problem of a problem is not routinely considered a very difficult problem so that students often do not find solutions and increasingly do not like mathematics.

Based on the background that has been presented then the problem formulation in this Research are: (1) Does use of RME approach increase Student’ Critical Thinking? (2) Whether the FPB and KPK Concepts can be built with the RME approach.

2. Method
This Action Research class is implemented in three cycles, the standard of Competence to be built is the concept of numbers on the Competency Standards; Performs integer count operations on troubleshooting. Direct learning using the RME approach, so students do not learn about the concept of FPB and KPK first and then use it in problems as sequenced in the standard content of KTSP 2006, but using the problem to learn the concept of FPB and KPK.

3. Result and Discussion
3.1. First Cycle
First cycle learning use FPB concept with cooperative learning model. Students are grouped as many as 4 people and begin to solve the FPB problem conditioned by the teacher by using the objects that have been prepared by the students first. The items prepared are a variety of candies and small transparent plastic bags to pack. The problem presented is "Each group provides 12 chocolate candies, and 8 fruit flavored candies. You will pass out the candies you have in a plastic bag containing two types of candy, each of which is the same number in each bag. You should be able to give the packet of candy to as many friends as possible. How many friends can be given the packet of candy?.

Students in groups then divide the two types of candy by way of trial and error. Then present the work of their group in front of the class. After the group discussion the students were directed to show the relationship between the number of plastic bags used with the amount of each type of candy. It is found that the number of plastic bags used is a factor of 8 and 12 because all the candies are not left after being distributed equally in each bag (FPB).

Presented another problem without a real object, namely: "To celebrate his birthday Andi will share snacks at a number of orphans, Andi's mother prepares 30 pieces of steamed brownies and 24 chocolate pudding. To be fair it must be ensured that every child gets the same number of cakes and puddings. How many children can deliver Andi's birthday packages? ."

When it finished and done next are presentation process and reflection process the students are again asked to connect between the number of packages and cake and pudding cake at the end of the quiz study, 23 students can solve the problem correctly but only 15 students can conclude the relationship between the number of packets and the number of objects distributed.

3.2. Second Cycle
The second cycle learning is how to construct the concept of KPK. Students learn outside the room, students are asked to guess if students stand every 4 tiles and girls every 6 tiles, on which tiles will they both stand parallel? Each group makes an estimate, and the student who is tasked to stand at the points in question makes the proof of concept. Students make the relationship between tiles to ... with 6 and 4.

The experiment with the students stood continuing by using many different tiles, and each group made an estimate with and showed the relationship between many tiles between students and students tied to the number of tiles that were passed together until they could stand parallel. After completion of
the individualized quiz lesson, 25 students can solve the problem correctly and 20 students can conclude that the completion is the KPK of both number.

3.3. Third Cycle
The third cycle, two problems are presented, namely the problem of completion can use the concept of KPK and FPB. Students discuss to resolve the issue without any real object or real activity. Students find the relationship between each number used with the prime number, the factor of the number, and the multiple of that number. Student can conclude that every original number is connected and can be expressed as prime number or multiplier of prime number. Students are assigned to solve the problem by using prime factorization. All groups can find the right solution but with different times. From the three learning cycles presented it is directed that the students build their knowledge about the concept of the Biggest Fellowship Factor and the smallest Multiple Fellows gradually from concrete, symbolic to find formulas as the abstract thinking stage and then can use the formula to solve the problem use the concept of the Biggest Faction Factor and Multiples.

4. Conclusion
Based on the results of classroom action research that has been implemented it can be concluded that the use of RME approach can improve students' problem solving skills, can improve students' social skills and can make students master mathematical concepts and use them to solve different problems. This study can also prove that the biggest Concept Factors and Smallest Partnership Multiples are construct with Realistic Mathematics Education approach. In learning mathematics, the characteristics of mathematics, especially the characteristics of concepts in mathematics should be taken into consideration in determining the learning approach to be used. The order of learning should not always be aligned with the order in the curriculum content standard, if possible it can be conveyed reversed. A concept is built through a real problem and not a concept first learned then, mastery of concepts used to solve problems.

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6. References
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