I. Introduction

Pendidikan Matematika Realistik Indonesia (PMRI) is an innovation in mathematics learning in Indonesia by using principles of Realistic Mathematics Education (RME) which merges a view about what is mathematics, how to learn mathematics, and how mathematics should be learned. RME is first developed by Freudenthal Institute established in 1971 in Netherland. PMRI is an approach which suitable with education paradigm now that more emphasizes students as a human that has potential to learn and develop.

PMRI in Palembang has been developed since 2004. There are some schools joined in KKG PMRI (PMRI Teacher Working Group). School that became my observation is MIN 1 Palembang. Since May 2009, I have visited this school along with Kamaliyah. Related to our plan with mathematics teachers in MIN 1 Palembang that we would do classroom observation in new academic year we had prepared some learning tools which would be used. On Thursday, July 22nd, 2010 we had done classroom observation in forth grade. It was the first time we met with the students.

II. Goal

The goals of this observation were to apply PMRI approach in teaching and learning process in fourth grade and to use straws and small boxes in teaching commutative and associative properties.

III. Observation Question

The question of this observation those are:

1. How does forth grader recognize commutative and associative properties with using PMRI approach?
2. Does forth grader can solve the problems about commutative and associative properties with using straws and small boxes?

IV. Data Description

Teacher opened the lesson with explanation some examples about commutative and associative properties related to students’ daily activities, those are: 1. when we have lunch, usually what we do? Eat rice first then drink water or drink water first then eat rice? 2. When you take a bath, what do you do first? Water your body or brush your teeth? 3. When you want to go to school, you wear your shoes and socks. Which one do you wear first? 4. When you have dinner, you eat fish, rice, and vegetables. Which one you eat first? Eat fish and rice first then vegetables or fish first then rice and vegetables?

From those examples, teacher asked student which one applies commutative property, associative property, or none of them. After that teacher asked students to give examples using commutative and associative properties in numbers.

Teacher divided students into five groups which consist of four or five students. Teacher briefly explained what should they do in their group then gave worksheet, straws, and small boxes for each groups. Straws and small boxes were used to help them answered the question in worksheet. While students worked in their groups, teacher watched them and gave guidance to the groups that find difficulties in solve the problems.
After 45 minutes, teacher asked students to collect their works then teacher together with the students concluded the materials that they had learned and wrote the formulas of commutative and associative properties for addition and multiplication in general: 

$$a + b = b + a, \ a \times b = b \times a, \ a + (b + c) = (a + b) + c, \ \text{and} \ a \times (b \times c) = (a \times b) \times c.$$ 

Teacher also led students to prove that subtraction and division not satisfied commutative and associative properties.

At the end of teaching and learning process, teacher praised the students’ works, made conclusion what they learned already, and gave them homework.
V. Analysis

When teacher gave examples from real world, students understood that those were examples of commutative and associative properties. They can recognize if there is an exchange between two numbers called commutative property and if there is a grouping between three numbers called associative property.

For students’ worksheet, teacher provided four problems. Some groups just can answer the question after teacher gave the guidance to them. It was happened because students were not usual to construct their knowledge by themselves. As a result, they found difficulties to write the way how they get the answer. They understood the questions, used straws and small boxes correctly, and if teacher asked them how they can find the solution, they can answer it but they confuse how to write it in their worksheet. So, some groups just wrote the answer without the way and the reason.

Almost of the students worked actively in their group and shared their opinion each other. Teacher tried to give guidance for the students either in group or individually if they found difficulties during teaching and learning process.
VI. Conclusion

From data description and analysis above, it can be concluded that in teaching commutative and associative properties using PMRI, teacher can related to students’ daily activities and then slowly made toward formal notation. Using straws and boxes as model material will help students understand and solve commutative and associative problems.