

# THE FIRST CYCLE OF DEVELOPING TEACHING MATERIALS FOR FRACTIONS IN GRADE FIVE USING REALISTIC MATHEMATICS EDUCATION

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## *Abstract*

There are 3 questions that will be answered in this study, namely (1) what are the contexts that can be used to introduce the meaning of multiplication of two fractions and to find the result of multiplying two fractions, (2) how to use these contexts to help students construct the understanding of the meaning of multiplication of two fractions and find the result of multiplying two fractions, and (3) what is the impact of the teaching-learning process that has been designed by researchers on the process of students' knowledge construction.

Learning approach which was used in developing teaching materials about fractions is realistic mathematics approach. Lesson plan was created for fifth grade elementary school students. The type of research used is development research. According to Gravemeijer and Cobb, there are three phases in development research, namely (1) preparation of the trial design, (2) the trial design, and (3) a retrospective analysis. This paper presents the results of the first cycle of three cycles that have been planned.

**Key Words:** fractions; realistic mathematics education; design research.

## **Abstrak**

Ada 3 pertanyaan yang akan dijawab dalam penelitian ini, yaitu (1) apa konteks-konteks yang dapat dipergunakan untuk mengenalkan makna dari perkalian dua pecahan dan mencari hasil perkalian dua pecahan, (2) bagaimana menggunakan konteks-konteks tersebut untuk membantu siswa mengkonstruksi pemahaman tentang makna dari perkalian dua pecahan dan cara mencari hasil perkalian dua pecahan, dan (3) apa dampak proses pembelajaran yang dirancang oleh para peneliti terhadap proses konstruksi pengetahuan siswa.

Pendekatan pembelajaran yang dipergunakan di dalam merancang proses pembelajaran pecahan adalah pendekatan matematika realistik. Rancangan pembelajaran yang dibuat adalah untuk siswa kelas V SD. Jenis penelitian yang dipergunakan dalam penelitian ini adalah penelitian pengembangan (development research). Menurut Gravemeijer dan Cobb, ada 3 fase dalam penelitian pengembangan, yaitu (1) persiapan uji coba desain, (2) uji coba desain, dan (3) analisis retrospektif. Dalam makalah ini disajikan hasil yang diperoleh pada siklus pertama dari 3 siklus yang direncanakan.

**Kata Kunci:** pecahan; pendekatan matematika realistik; penelitian pengembangan.

In 2012, the first writer of this paper had the opportunity to accompany a fifth grade elementary school teacher to implement the realistic mathematics approach. In a discussion, conducted between the lessons, the teacher said that one of the topics in grade five that is difficult to be understood by fifth grade students is fractions, especially on the meaning of multiplication of two fractions, and has to obtain the result of multiplication of two fractions.