

**DESAIN DIDAKTIS UNTUK MENGATASI  
HAMBATAN BELAJAR PADA PEMECAHAN MASALAH MATEMATIS  
MATERI PECAHAN DI KELAS V SEKOLAH DASAR**

**DISERTASI**

Diajukan untuk Memenuhi Syarat untuk Memperoleh  
Gelar Doktor Program Studi Pendidikan Matematika



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**DESAIN DIDAKTIS UNTUK MENGATASI HAMBATAN BELAJAR  
PADA PEMECAHAN MASALAH MATEMATIS MATERI PECAHAN  
DI KELAS V SEKOLAH DASAR**

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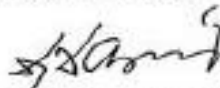
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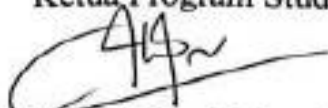


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## ABSTRAK

Ryky Mandar Sary (2023). Desain Didaktis Untuk Mengatasi Hambatan Belajar Pada Pemecahan Masalah Matematis Materi Pecahan Untuk Siswa Kelas V di Sekolah Dasar

Pecahan merupakan materi penting dalam pembelajaran matematika karena dapat diterapkan dalam kehidupan sehari-hari. Namun, masih ada siswa yang menghadapi kendala dalam proses pembelajaran. Beberapa penelitian menunjukkan bahwa hambatan belajar yang dihadapi siswa ketika mempelajari pemecahan masalah matematis materi pecahan adalah karena kurangnya pemahaman siswa dalam memecahkan masalah pecahan dan keterampilan prosedural pada konsep pecahan. Oleh karena itu, diperlukan suatu desain pembelajaran yang sesuai dengan hambatan belajar yang dialami siswa. Penelitian ini bertujuan untuk membuat desain didaktis rekomendasi untuk mengatasi hambatan belajar siswa pada pemecahan masalah matematis materi pecahan di kelas V sekolah dasar. Pendekatan penelitian yang digunakan adalah penelitian kualitatif dengan metode fenomenologi hermeneutika. Analisis data dilakukan dalam tiga tahap dalam *Didactic Design Research* (DDR) yaitu prospektif, metapedadidaktik, dan retrospektif. Alat yang digunakan antara lain lembar observasi, tes, pedoman wawancara, studi dokumen, dan rekaman audio. Partisipan dalam penelitian ini adalah 50 siswa dari sekolah dasar di kota Semarang. Hasil penelitian menunjukkan bahwa terdapat hambatan belajar yang dihadapi siswa berupa hambatan ontologis, epistemologis dan didaktis. Setelah menerapkan desain didaktik hipotetik, beberapa perbaikan dilakukan, terutama dalam pengembangan prediksi respon siswa, dan antisipasi didaktis dan pedagogis dengan tujuan menyempurnakan desain didaktik.

Kata kunci: desain didaktis, hambatan belajar, pecahan, pemecahan masalah matematis.

## ABSTRACT

Ryky Mandar Sary (2023). Didactical Design to Overcome Learning Obstacles in Mathematical Problem Solving of Fraction Materials for Grade V Students in Elementary School

Fractions are important material in learning mathematics because they can be applied in everyday life. However, there are still students who face obstacles in the learning process. Some research shows that the learning obstacles students face when learning mathematical problem solving of fraction materials are due to the lack of student understanding in solving fraction problems and procedural skills on the concept of fractions. Therefore, a learning design that is in accordance with the needs and characteristics of students is needed. This research aims to make didactical design recommendations to overcome student learning obstacles in mathematical problem solving of fractions in grade V elementary school. The research approach used is qualitative research with hermeneutic phenomenology method. Data analysis was conducted in three stages in Didactic Design Research (DDR) namely prospective, metapedidactic, and retrospective. The tools used included observation sheets, tests, interview guidelines, document studies, and audio recordings. The participants in this study were 50 students from elementary schools in Semarang city. The results showed that there were learning obstacles faced by students in the form of *ontogenic obstacle*, *epistimological obstacle* and *didactical obstacle*. After implementing the hypothetical didactic design, some improvements were made, especially in the development of didactic and pedagogical predictions of student responses with the aim of refining the didactic design.

Keywords: didactical design, learning obstacle, fractions, mathematical problem solving.

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