

ABSTRAK

Penelitian ini bertujuan untuk mengadaptasi buku *Fraction Times Mathematics in Context* untuk pengembangan buku ajar pecahan SMP Berbasis PMRI yang valid dan praktis. Jenis penelitian ini adalah *Research and Development* (R&D) dengan model ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Subjek penelitian terdiri atas 10 siswa kelas VII SMP Joannes Bosco Yogyakarta dengan kemampuan beragam. Validasi dilakukan oleh dosen pendidikan matematika dan guru matematika.

Hasil analisis menunjukkan pembelajaran pecahan dan buku ajar masih prosedural dan belum mendukung pembelajaran dengan konteks nyata, serta konteks dalam *Fraction Times* belum sesuai dengan kehidupan siswa Indonesia, sehingga perlu dikembangkan buku ajar berbasis PMRI melalui adaptasi *Fraction Times* ke konteks Indonesia. Tahap desain meliputi pemetaan materi dan tujuan pembelajaran, mengubah konteks dari Amerika Serikat ke kehidupan sehari-hari siswa Indonesia dan bahasa yang digunakan, serta merancang struktur buku. Tahap pengembangan menghasilkan buku siswa dan buku panduan guru berbasis karakteristik PMRI yang kemudian divalidasi oleh ahli. Hasil validasi menunjukkan buku siswa memperoleh 86,88% dengan kategori sangat valid dan buku panduan guru 84,40% dengan kategori valid. Tahap implementasi dilakukan uji coba terbatas selama dua pertemuan. Tahap evaluasi menunjukkan keterlaksanaan pembelajaran sebesar 85,79% dengan kategori sangat baik, kepraktisan buku siswa 72,50% dengan kategori praktis, dan buku panduan guru 85,76% dengan kategori sangat praktis. Berdasarkan hasil tersebut, dapat disimpulkan bahwa buku ajar pecahan SMP berbasis PMRI hasil adaptasi *Fraction Times* telah memenuhi kriteria valid dan praktis sehingga layak digunakan untuk mendukung pembelajaran yang bermakna untuk materi pecahan SMP.

Kata Kunci: buku ajar, pecahan, adaptasi, PMRI, *Fraction Times*, *Mathematics in Context*

ABSTRACT

This study aims to adapt the book Fraction Times Mathematics in Context to develop a valid and practical PMRI-based middle school textbook on fractions. This is a Research and Development (R&D) study using the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. The research subjects consisted of 10 seventh-grade students at Joannes Bosco Middle School in Yogyakarta with varying abilities. Validation was conducted by mathematics education professors and mathematics teachers.

The results of the analysis show that fraction instruction and textbooks remain procedural and do not yet support learning in real-world contexts; furthermore, the contexts in Fraction Times are not relevant to the lives of Indonesian students. Therefore, it is necessary to develop PMRI-based textbooks by adapting Fraction Times to the Indonesian context. The design phase included mapping the content and learning objectives, changing the context from the United States to the daily lives of Indonesian students and adapting the language used, as well as designing the book's structure. The development phase produced a student textbook and a teacher's guide based on PMRI characteristics, which were then validated by experts. The validation results showed that the student textbook scored 86.88%, categorized as highly valid, and the teacher's guide scored 84.40%, categorized as valid. The implementation phase involved a limited pilot test over two sessions. The evaluation phase showed that the implementation of learning was 85.79%, categorized as very good, the practicality of the student book was 72.50%, categorized as practical, and the teacher's guide was 85.76%, categorized as very practical. Based on these results, it can be concluded that the PMRI-based junior high school fractions textbook adapted from Fraction Times has met the criteria for validity and practicality and is therefore suitable for use in supporting meaningful learning of junior high school fractions.

Keywords: *textbook, fractions, adaptation, PMRI, Fraction Times, Mathematics in Context*