

ABSTRAK

Arisandhi, Komang Pipit (2026), *Pengembangan E-LKPD Berbasis Masalah Matematika Realistik Untuk Meningkatkan Kemampuan Pemahaman Konsep Matematis Siswa Kelas IV Pada Materi Pecahan*. Tesis, Pendidikan Dasar, Program Pascasarjana, Universitas Pendidikan Ganesha.

Tesis ini sudah disetujui dan diperiksa oleh Pembimbing I: Prof. Dr. Nyoman Dantes dan Pembimbing II: Prof. Dr. I Made Ardana, M.Pd.

Kata-kata kunci: E-LKPD, matematika realistik, pemahaman konsep matematis, penelitian pengembangan, pecahan.

Penelitian ini merupakan penelitian dan pengembangan (*Research and Development*) yang bertujuan untuk mengembangkan E-LKPD berbasis masalah Matematika Realistik pada materi pecahan serta menguji validitas, kepraktisan, dan efektivitasnya dalam meningkatkan kemampuan pemahaman konsep matematis siswa kelas IV sekolah dasar. Model pengembangan yang digunakan adalah model 4D yang meliputi tahap *define, design, develop, dan disseminate*. Subjek penelitian terdiri atas siswa kelas IV sekolah dasar, guru, serta ahli materi, ahli media, dan ahli bahasa. Instrumen penelitian meliputi lembar validasi, angket kepraktisan, dan tes pemahaman konsep matematis. Analisis data dilakukan secara deskriptif dan inferensial, meliputi uji validitas isi menggunakan formula Gregory, uji kepraktisan berdasarkan respon guru dan siswa, serta uji efektivitas melalui desain *One-Group Pretest-Posttest* dengan analisis uji-t berpasangan, *N-Gain*, dan *Effect Size*. Hasil penelitian menunjukkan bahwa E-LKPD yang dikembangkan memiliki validitas isi sangat tinggi dengan koefisien validitas sebesar 1 pada aspek materi, media, dan bahasa. Hasil uji kepraktisan menunjukkan bahwa E-LKPD berada pada kategori praktis menurut siswa dengan rata-rata persentase 85,31% dan sangat praktis menurut guru dengan rata-rata persentase 92,08%. Uji efektivitas menunjukkan adanya peningkatan signifikan kemampuan pemahaman konsep matematis siswa, yang dibuktikan dengan nilai signifikansi uji-t sebesar 0,001 ($< 0,05$), nilai *N-Gain* rata-rata sebesar 0,67 pada kategori sedang, serta nilai *Effect Size* sebesar 2,82 yang termasuk kategori tinggi. Berdasarkan hasil tersebut, dapat disimpulkan bahwa E-LKPD berbasis masalah matematika realistik valid, praktis, dan efektif untuk meningkatkan kemampuan pemahaman konsep matematis siswa kelas IV pada materi pecahan, serta layak digunakan sebagai media pembelajaran inovatif di Sekolah Dasar.

ABSTRACT

Arisandhi, Komang Pipit (2026), *Development of an E-LKPD Based on Realistic Mathematical Problems to Improve Fourth Grade Students' Mathematical Concept Understanding in Fractions*. Thesis, Elementary Education, Graduate Program, Ganesha Education University.

This thesis has been approved and examined by the First Supervisor: Prof. Dr. Nyoman Dantes and the Second Supervisor: Prof. Dr. I Made Ardana, M.Pd.

Keywords: E-LKPD, Realistic Mathematics Education, mathematical conceptual understanding, research and development, fractions.

*This study is a Research and Development (R&D) project aimed at developing a problem-based Realistic Mathematics E-Worksheet (E-LKPD) on fraction topics and examining its validity, practicality, and effectiveness in improving fourth-grade elementary school students' mathematical conceptual understanding. The development model employed was the 4D model, consisting of the define, design, develop, and disseminate stages. The research subjects included fourth-grade elementary school students, teachers, as well as material experts, media experts, and language experts. The research instruments comprised validation sheets, practicality questionnaires, and a mathematical conceptual understanding test. Data analysis was conducted using descriptive and inferential methods, including content validity testing using Gregory's formula, practicality analysis based on teacher and student responses, and effectiveness testing through a One-Group Pretest–Posttest design with paired sample *t*-test, *N*-Gain, and Effect Size analyses. The results showed that the developed E-LKPD demonstrated very high content validity, with a validity coefficient of 1.00 in the aspects of content, media, and language. The practicality test indicated that the E-LKPD was categorized as practical according to students, with an average percentage of 85.31%, and very practical according to teachers, with an average percentage of 92.08%. The effectiveness test revealed a significant improvement in students' mathematical conceptual understanding, as evidenced by a *t*-test significance value of 0.001 (< 0.05), an average *N*-Gain score of 0.67 in the medium category, and an Effect Size of 2.82, which falls into the high category. Based on these findings, it can be concluded that the problem-based Realistic Mathematics E-LKPD is valid, practical, and effective in improving fourth-grade students' mathematical conceptual understanding of fractions and is feasible to be used as an innovative learning medium in elementary schools.*