

**PENGEMBANGAN E-KOMIK INTERAKTIF BERNUANSA  
KEARIFAN LOKAL BALI UNTUK MENINGKATKAN PEMAHAMAN  
KONSEP BANGUN RUANG SISI DATAR PADA SISWA KELAS VIII**

Oleh

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**ABSTRAK**

Salah satu penyebab rendahnya pemahaman konsep matematika siswa adalah media pembelajaran yang belum mampu memfasilitasi keterlibatan siswa secara optimal. Penelitian ini bertujuan untuk mengembangkan e-komik interaktif berbasis kearifan lokal Bali yang memenuhi kriteria valid, praktis, dan efektif dalam meningkatkan pemahaman konsep siswa kelas VIII pada materi bangun ruang sisi datar. Penelitian ini menggunakan pendekatan Research and Development (R&D) dengan model pengembangan ADDIE. Teknik pengumpulan data yang digunakan meliputi observasi, wawancara, angket, dokumentasi, serta tes pemahaman konsep. Subjek penelitian terdiri atas 27 siswa kelas VIII.3 dan seorang guru matematika di SMP Laboratorium Undiksha Singaraja. E-komik yang dikembangkan memiliki fitur seperti menjodohkan gambar, *pick one, drag and drop, multiple choice* dan *text entry* yang didukung dengan *feedback* interaktif. Fitur-fitur ini disebar pada setiap *chapter* untuk mendorong keterlibatan aktif siswa dalam memahami konsep, mengintegrasikan bangunan tradisional Bali seperti Meru Pura, Bale Bengong, dan Atap Jineng, serta dikembangkan menggunakan Articulate Storyline 3 yang dihosting melalui SCORM Cloud untuk merekam respons siswa berupa progres belajar, waktu akses, jawaban siswa, dan ketuntasan yang diperoleh. Hasil uji validasi dengan *Learning object review instrument* (LORI) memperoleh rata-rata skor ahli media 4,6875 dan ahli materi 4,8 dengan kategori “Sangat Baik”. Kepraktisan berdasarkan UEQ menunjukkan seluruh aspek berkategori “*Excellent*”. Efektivitas berdasarkan *pre-test* dan *post-test* dengan instrumen yang sudah dinyatakan valid dan reliabel memperoleh N-gain 0,62 (kategori sedang) dan ketuntasan belajar 81,5% (kategori sangat baik). Berdasarkan dari hasil penelitian yang diperoleh, e-komik interaktif yang dikembangkan dinyatakan valid, praktis, dan efektif untuk meningkatkan pemahaman konsep bangun ruang sisi datar siswa SMP.

Kata Kunci: E-komik interaktif, kearifan lokal Bali, pemahaman konsep matematika.

# **DEVELOPMENT OF AN INTERACTIVE E-COMIC BASED ON BALINESE LOCAL WISDOM TO IMPROVE EIGHTH-GRADE STUDENTS' UNDERSTANDING OF POLYHEDRAL CONCEPTS**

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## **ABSTRACT**

One of the causes of students' low understanding of mathematical concepts is the use of learning media that has not optimally facilitated student engagement. This study aims to develop an interactive e-comic based on Balinese local wisdom that meets the criteria of validity, practicality, and effectiveness in improving the conceptual understanding of eighth-grade students on the topic of polyhedra (solid figures with flat surfaces). This research employed a Research and Development (R&D) approach using the ADDIE development model. Data collection techniques included observation, interviews, questionnaires, documentation, and conceptual understanding tests. The research subjects consisted of 27 students of class VIII.3 and one mathematics teacher at SMP Laboratorium Undiksha Singaraja. The developed e-comic features activities such as matching images, pick-one questions, drag-and-drop, multiple choice, and text entry, all supported by interactive feedback. These features are distributed across each chapter to encourage active student engagement in understanding concepts. The content integrates Balinese traditional structures such as *Meru Pura*, *Bale Bengong*, and *Atap Jineng*, and is developed using Articulate Storyline 3, hosted via SCORM Cloud to record student responses including learning progress, access time, answers, and mastery levels. The validation results using the Learning Object Review Instrument (LORI) showed an average score of 4.6875 from media experts and 4.8 from subject matter experts, both categorized as "Very Good." Practicality based on the User Experience Questionnaire (UEQ) indicated that all aspects were classified as "Excellent." Effectiveness, measured through pre-test and post-test using instruments that were proven valid and reliable, yielded an N-gain score of 0.62 (moderate category) and a learning mastery level of 81.5% (very good category). Based on these findings, the developed interactive e-comic is considered valid, practical, and effective in improving junior high school students' understanding of polyhedral concepts.

**Keywords:** Interactive e-comic, Balinese local wisdom, mathematical conceptual understanding