

ABSTRAK

Sri Wedani, Ni Ketut. 2026. Pengaruh Model *Case Based Learning* Berbantuan Elektronik-Lembar Kerja Murid (E-LKM) terhadap Keterampilan Berpikir Kritis dan Prestasi Belajar Murid Kelas XI SMA pada Pembelajaran Matematika. Singaraja, Program Studi Teknologi Pendidikan, Program Pascasarjana, Universitas Pendidikan Ganesha, 2026.

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Prestasi matematika yang rendah di kalangan siswa Indonesia, dibuktikan dengan skor PISA 2022 sebesar 354 poin di bawah rata-rata OECD sebesar 485, menggarisbawahi perlunya pedagogi inovatif. Tujuan penelitian adalah meneliti pengaruh model pembelajaran berbasis kasus (*Case-Based Learning/CBL*) yang terintegrasi dengan Lembar Kerja Elektronik Murid (*Electronic Student Worksheets/E-LKM*) terhadap kemampuan berpikir kritis dan prestasi belajar matematika, dibandingkan dengan CBL saja dan Pengajaran Langsung (*Direct Instruction/DI*). Desain kelompok kontrol pra-uji-pasca-uji non-ekuivalen kuasi-eksperimental digunakan di SMA Negeri 2 Amlapura, Bali, semester genap 2025/2026. Tiga kelas dipilih melalui pengambilan sampel acak sederhana dari 369 siswa kelas XI: CBL+E-LKM ($n = 35$), CBL ($n = 35$), dan DI ($n = 34$). Kemampuan berpikir kritis diukur menggunakan tes berbasis esai dan prestasi matematika menggunakan tes pilihan ganda, dianalisis dengan MANCOVA di IBM SPSS 26.0. Hasil penelitian menunjukkan: (1) ketiga kelompok berbeda secara signifikan pada kedua variabel secara simultan (Pillai's Trace $F = 48,074$; $p < 0,001$); (2) keterampilan berpikir kritis berbeda secara signifikan, dengan rata-rata posttest CBL+E-LKM ($M = 32,29$; sangat tinggi), CBL ($M = 30,63$; tinggi), dan DI ($M = 24,32$; tinggi), $F = 905,294$, $p < 0,001$; dan (3) prestasi matematika mengikuti urutan superioritas yang sama, CBL+E-LKM ($M = 7,66$), CBL ($M = 7,26$), dan DI ($M = 6,29$), $F = 139,284$, $p < 0,001$. Temuan ini menegaskan bahwa mengintegrasikan E-LKM ke dalam CBL secara simultan meningkatkan keterampilan berpikir kritis dan prestasi belajar matematika melalui konteks kasus otentik dan dukungan digital, menjadikan CBL+E-LKM sebagai model yang direkomendasikan untuk pengajaran berpikir tingkat tinggi dalam matematika.

Kata Kunci: *berpikir kritis, case based learning, E-LKM, matematika, prestasi belajar*

ABSTRACT

Sri Wedani, Ni Ketut. 2026. The Effect of Case Based Learning Model Assisted by Electronic Student Worksheets (E-LKM) on Critical Thinking Skills and Learning Achievement of Grade XI High School Students in Mathematics Learning. Singaraja, Educational Technology Study Program, Postgraduate Program, Ganesha University of Education, 2026.

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Low mathematics achievement among Indonesian students, evidenced by a PISA 2022 score of 354 points below the OECD average of 485, underscores the need for innovative pedagogy. The objective of this study was to examine the effect of a case-based learning (CBL) model integrated with Electronic Student Worksheets (E-LKM) on critical thinking skills and mathematics achievement, compared to CBL alone and Direct Instruction (DI). A quasi-experimental non-equivalent pretest-posttest control group design was employed at SMA Negeri 2 Amlapura, Bali, even semester 2025/2026. Three classes were selected through simple random sampling from 369 grade XI students: CBL+E-LKM ($n = 35$), CBL ($n = 35$), and DI ($n = 34$). Critical thinking skills were measured using essay-based tests and mathematics achievement using multiple-choice tests, analyzed with MANCOVA in IBM SPSS 26.0. Results revealed: (1) the three groups differed significantly in both variables simultaneously (Pillai's Trace $F = 48.074$; $p < 0.001$); (2) critical thinking skills differed significantly, with posttest means of CBL+E-LKM ($M = 32.29$; very high), CBL ($M = 30.63$; high), and DI ($M = 24.32$; high), $F = 905.294$, $p < 0.001$; and (3) mathematics achievement followed the same superiority order, CBL+E-LKM ($M = 7.66$), CBL ($M = 7.26$), and DI ($M = 6.29$), $F = 139.284$, $p < 0.001$. These findings confirm that integrating E-LKM into CBL simultaneously enhances critical thinking skills and mathematics achievement through authentic case contexts and adaptive digital scaffolding, making CBL+E-LKM a recommended model for higher-order thinking instruction in mathematics.

Keywords: *critical thinking, case based learning, E-LKM, mathematics, learning achievement*