

ABSTRAK

Hartono, Cynthia Paramitha (2026). Pengembangan E-Modul Interaktif Berbasis Project-Based Blended Learning Untuk Meningkatkan *Pedagogical Content Knowledge* Dan *Self-Efficacy* Dalam Pelatihan Berpikir Komputasional Guru Paud. Tesis, Teknologi Pendidikan, Program Pascasarjana, Universitas Pendidikan Ganesha.

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Kata Kunci: e-modul interaktif, *project-based blended learning*, *pedagogical content knowledge*, *self-efficacy*, berpikir komputasional, guru PAUD

Penelitian ini dilatarbelakangi oleh rendahnya *pedagogical content knowledge* (PCK) dan *self-efficacy* guru PAUD di Kecamatan Denpasar Barat dalam mengajarkan berpikir komputasional, serta belum tersedianya media pelatihan yang fleksibel dan praktis untuk konteks tersebut. Penelitian ini bertujuan untuk (1) menghasilkan e-modul interaktif berbasis *project-based blended learning* (PjBBL), (2) mengukur validitas, kepraktisan, dan efektivitasnya dalam meningkatkan PCK dan *self-efficacy* guru PAUD, serta (3) menganalisis respon peserta. Penelitian pengembangan ini menggunakan model ADDIE (*Analyze, Design, Develop, Implement, Evaluate*). Subjek uji lapangan berjumlah 30 guru PAUD anggota PKG Kecamatan Denpasar Barat dengan desain *one-group pretest-posttest*. Produk dikembangkan dalam bentuk website Google Sites yang memuat empat modul dengan sintaks PjBBL enam fase selama 32 JP. Instrumen penelitian terdiri atas lembar validasi ahli yang dianalisis dengan rumus Gregory, *User Experience Questionnaire* (UEQ) untuk kepraktisan, tes pilihan ganda PCK (30 butir), angket *self-efficacy* (20 butir; skala Likert 1–4), dan *System Usability Scale* (SUS). Hasil penelitian menunjukkan: (a) validitas e-modul tinggi hingga sangat tinggi (koefisien Gregory ahli media = 1,00; ahli materi = 0,80); (b) kepraktisan berada pada kategori *Excellent* pada keenam skala UEQ baik pada uji perorangan (rerata 2,75–3,00) maupun uji kelompok kecil (rerata 2,75–2,83); (c) e-modul secara signifikan meningkatkan PCK dari rerata 94,83 menjadi 114,33 ($t = -9,371$; $df = 29$; $p < 0,001$; Hedges' $g = 1,666$; N-Gain = 0,41 kategori sedang); (d) e-modul secara signifikan meningkatkan *self-efficacy* dari rerata 2,705 menjadi 3,358 ($t = -17,780$; $df = 29$; $p < 0,001$; Hedges' $g = 3,161$; N-Gain = 0,54 kategori sedang); serta (e) respon peserta sangat positif dengan skor SUS rata-rata 85,00 (Grade A – *Excellent*). Dengan demikian, e-modul interaktif berbasis PjBBL yang dikembangkan dinyatakan valid, praktis, dan efektif sebagai media pelatihan berpikir komputasional bagi guru PAUD.

ABSTRACT

Hartono, Cynthia Paramitha (2026). Development of an Interactive E-Module Based on Project-Based Blended Learning to Enhance Pedagogical Content Knowledge and Self-Efficacy in Computational Thinking Training for Early Childhood Education Teachers. Thesis, Educational Technology, Postgraduate Program. Universitas Pendidikan Ganesha

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Keywords: interactive e-module, project-based blended learning, pedagogical content knowledge, self-efficacy, computational thinking, early childhood education teachers

This study was motivated by the low pedagogical content knowledge (PCK) and self-efficacy of Early Childhood Education (ECE) teachers in West Denpasar District in teaching computational thinking, alongside the absence of flexible and practical training media tailored to this context. It aimed to (1) develop an interactive e-module based on project-based blended learning (PjBBL), (2) measure its validity, practicality, and effectiveness in improving teachers' PCK and self-efficacy, and (3) analyze participants' responses. This development research employed the ADDIE model (Analyze, Design, Develop, Implement, Evaluate). The field-test subjects consisted of 30 ECE teachers from the PKG community in West Denpasar District, utilizing a one-group pretest-posttest design. The product was developed as a Google Sites-based website containing four modules structured around a six-phase PjBBL syntax across 32 training hours. The instruments consisted of expert validation sheets analyzed using Gregory's formula, the User Experience Questionnaire (UEQ) for practicality, a 30-item multiple-choice PCK test, a 20-item self-efficacy questionnaire (Likert scale 1–4), and the System Usability Scale (SUS). The results showed that: (a) the e-module's validity was high to very high (Gregory coefficient of 1.00 for media experts and 0.80 for content experts); (b) practicality reached the Excellent category on all six UEQ scales in both the individual trial (mean 2.75–3.00) and small-group trial (mean 2.75–2.83); (c) the e-module significantly improved teachers' PCK from a mean of 94.83 to 114.33 ($t = -9.371$; $df = 29$; $p < 0.001$; Hedges' $g = 1,666$; N-Gain = 0.41, moderate category); (d) the e-module significantly improved teachers' self-efficacy from a mean of 2.705 to 3.358 ($t = -17.780$; $df = 29$; $p < 0.001$; Hedges' $g = 3,161$; N-Gain = 0.54, moderate category); and (e) participant responses were very positive, with a mean SUS score of 85.00 (Grade A – Excellent). The findings confirm that the developed PjBBL-based interactive e-module is valid, practical, and effective as a training medium for computational thinking training for ECE teachers.