

ABSTRAK

Tyas Utami, Mustikawati (2026), Pengembangan e-modul interaktif berbasis *project-based flipped learning with deep learning approach* untuk meningkatkan kompetensi pedagogik guru dalam menyusun desain pembelajaran mendalam. Tesis, Teknologi Pendidikan, Program Pascasarjana, Universitas Pendidikan Ganesha, Singaraja 2026.

Tesis ini telah disetujui dan diperiksa oleh Pembimbing I: Prof.Dr. I Made Tegeh, S.Pd., M.Pd. dan Pembimbing II: Prof.Dr. I Gde Wawan Sudatha, S.Pd., S.T., M.Pd.

Kata kunci: e-modul, e-modul interaktif, *project based flipped learning*, *deep learning*, pembelajaran mendalam, kompetensi pedagogik, desain pembelajaran

Implementasi pendekatan pembelajaran mendalam menuntut guru memiliki kompetensi pedagogik yang memadai dalam menyusun desain pembelajaran. Namun, keterbatasan waktu, variasi metode belajar, dan ketersediaan media pembelajaran pada komunitas belajar guru masih menjadi kendala. Permasalahan dalam penelitian ini adalah menemukan inovasi agar pembelajaran di komunitas belajar guru berbasis MGMP dapat efektif untuk mempelajari dan mengintegrasikan pendekatan pembelajaran mendalam pada desain pembelajaran (RPP/modul ajar). Solusi yang ditawarkan pada penelitian ini adalah dengan mengembangkan e-modul interaktif berbasis *project-based flipped learning with deep learning approach*. Penelitian ini dirancang dalam bentuk penelitian *Research and Development* (R&D) dengan model ADDIE yang terdiri dari lima tahapan yaitu *Analyze, Design, Development, Implementation, Evaluation*. Penelitian dilaksanakan berlokasi di SMK Negeri 3 Singaraja. Subjek penelitian adalah 30 guru, masing-masing 5 orang dari 6 komunitas MGMP di SMK Negeri 3 Singaraja.

Hasil penelitian menunjukkan bahwa e-modul interaktif berbasis *project-based flipped learning with deep learning approach* dinyatakan 'valid' dengan kriteria sangat baik berdasarkan penilaian rata-rata ahli materi sebesar 98,14% dan ahli media sebesar 95,52%. Uji kepraktisan produk mendapatkan hasil 'praktis' dengan kriteria sangat baik yang diperoleh dari penilaian rata-rata uji perseorangan sebesar 99,49%, penilaian rata-rata uji kelompok kecil sebesar 92,82% dan respon pengguna pada uji kelompok besar mendapatkan penilaian rata-rata 90,25. Hasil penelitian terhadap efektivitas produk mendapatkan kategori 'efektif' dengan kriteria sangat tinggi, diperoleh dari penilaian rata-rata N-Gain Score sebesar 0,788, dengan ketuntasan klasikal mencapai 100%. Berdasarkan temuan tersebut dapat disimpulkan bahwa e-modul interaktif berbasis *project-based flipped learning with deep learning approach* terbukti valid, praktis, dan efektif untuk meningkatkan kompetensi pedagogik guru dalam menyusun desain pembelajaran mendalam.

ABSTRACT

Tyas Utami, Mustikawati (2026), Development of an interactive e-module based on project-based flipped learning with a deep learning approach to improve teachers' pedagogical competence in developing deep learning designs. Thesis, Educational Technology, Postgraduate Program, Ganesha University of Education, Singaraja.

This thesis has been approved and examined by Supervisor I Prof. Dr. I Made Tegeh, S.Pd., M.Pd. and Supervisor II: Prof. Dr. I Gde Wawan Sudatha, S.Pd., S.T., M.Pd.

Keywords: e-module, interactive e-module, project-based flipped learning, deep learning, immersive learning, pedagogical competence, learning design

The implementation of the deep learning approach requires teachers to have adequate pedagogical competence in developing learning designs. However, time constraints, variations in learning methods, and the availability of learning media in teacher learning communities remain obstacles. The problem in this research is to find innovations so that learning in the MGMP-based teacher learning community can be effective in learning and integrating a deep learning approach into learning design (RPP/teaching modules). The solution offered in this research is to develop an interactive e-module based on project-based flipped learning with a deep learning approach. This research was designed as a Research and Development (R&D) study using the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The study was conducted at SMK Negeri 3 Singaraja. The subjects were 30 teachers, five from each of the six MGMP communities at SMK Negeri 3 Singaraja.

The results showed that the interactive e-module, based on project-based flipped learning with a deep learning approach, was declared "valid" with very good criteria. The average rating from material experts was 98.14% and from media experts was 95.52%. The product's practicality test yielded a "practical" rating with very good criteria, obtained from an average rating of 99.49% for individual tests, an average rating of 92.82% for small group tests, and an average user response rating of 90.25% for large group tests. The results of the research on the effectiveness of the product obtained the category 'effective' with very high criteria, obtained from the average assessment of the N-Gain Score of 0.788, with classical completeness reaching 100%. Based on these findings, it can be concluded that the interactive e-module based on project-based flipped learning with a deep learning approach is proven valid, practical, and effective in improving teachers' pedagogical competence in designing in-depth learning.