

ABSTRAK

Putu Sastra Krisna Yana (2026), Pengembangan E-Modul Interaktif Berbasis Problem Based Deep Learning Untuk Meningkatkan Penalaran Kritis Siswa Mata Pelajaran Informatika. Tesis, Teknologi Pendidikan, Program Pascasarjana, Universitas Pendidikan Ganesha.

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Kata-kata kunci: *E-Modul, Problem Based Deep Learning (PBDL), Penalaran Kritis, Informatika*

Pembelajaran Informatika menuntut siswa memiliki kemampuan penalaran kritis sebagai salah satu kompetensi abad ke-21. Namun, pembelajaran masih didominasi metode ceramah, keterbatasan media interaktif, keterbatasan waktu pembelajaran serta kesulitan siswa memahami materi yang bersifat abstrak sehingga keterlibatan dan penalaran kritis siswa belum optimal. Penelitian ini bertujuan mengembangkan dan menguji E-Modul Interaktif berbasis *Problem Based Deep Learning* untuk meningkatkan penalaran kritis siswa pada mata pelajaran Informatika. Penelitian ini merupakan penelitian pengembangan menggunakan model ADDIE yang meliputi tahap *Analysis, Design, Development, Implementation*, dan *Evaluation*. Subjek penelitian adalah siswa kelas X SMA Negeri 1 Selemadeg. Hasil penelitian menunjukkan bahwa e-modul berhasil dikembangkan sesuai tahapan ADDIE dengan mengintegrasikan sintaks *Problem Based Learning* dan prinsip *Deep Learning* dalam aktivitas pembelajaran. Hasil uji validitas menunjukkan e-modul memperoleh persentase validitas ahli isi sebesar 91% dan ahli media sebesar 100% dengan kualifikasi sangat baik. Uji kepraktisan memperoleh kategori *Good* dan *Excellent*, menunjukkan e-modul mudah digunakan dan memberikan pengalaman belajar yang positif. Hasil uji efektivitas menunjukkan rata-rata nilai penalaran kritis meningkat dari 57,9 pada *pre-test* menjadi 77,9 pada *post-test*, dengan nilai Hedges' *g* sebesar 2,816 yang termasuk kategori *large effect*. Selain itu, respons guru dan siswa terhadap penggunaan e-modul berada pada kategori *Excellent*. Dengan demikian, E-Modul Interaktif berbasis *Problem Based Deep Learning* dinyatakan valid, praktis, efektif, dan mampu meningkatkan penalaran kritis siswa pada mata pelajaran Informatika.

ABSTRACT

Putu Sastra Krisna Yana (2026), Development of an Interactive E-Module Based on Problem-Based Deep Learning to Improve Students' Critical Reasoning in Informatics. Thesis, Educational Technology, Postgraduate Program, Ganesha University of Education.

This thesis has approved and reviewed by Supervisor I: Prof. Dr. Ketut Agustini, S.Si., M.Si. and Supervisor II: Dr. I Kadek Suartama, S.Pd., M.Pd.

Keywords: E-Module, Problem-Based Deep Learning (PBDL), Critical Reasoning, Informatics

Informatics learning requires students to have critical reasoning skills as one of the 21st century competencies. However, learning is still dominated by lecture methods, limited interactive media, limited learning time and students' difficulties in understanding abstract material so that students' engagement and critical reasoning are not optimal. This study aims to develop and test an Interactive E-Module based on Problem Based Deep Learning to improve students' critical reasoning in Informatics subjects. This research is a development research using the ADDIE model which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The research subjects were grade X students of SMA Negeri 1 Selemadeg. The results showed that the e-module was successfully developed according to the ADDIE stages by integrating Problem Based Learning syntax and Deep Learning principles in learning activities. The results of the validity test showed that the e-module obtained a validity percentage of content experts of 91% and media experts of 100% with very good qualifications. The practicality test obtained the Good and Excellent categories, indicating that the e-module is easy to use and provides a positive learning experience. The effectiveness test results showed that the average critical reasoning score increased from 57.9 in the pre-test to 77.9 in the post-test, with a Hedges' g value of 2.816, which is included in the large effect category. In addition, teacher and student responses to the use of the e-module were in the Excellent category. Thus, the Interactive E-Module based on Problem Based Deep Learning was declared valid, practical, effective, and able to improve students' critical reasoning in Informatics subjects.