

## ABSTRAK

Mukholiffatul, Maisaroh. 2024. Pengembangan E-Modul Berbasis POE (*Predict, Observe and Explain*) Pada Materi Suhu dan Kalor Untuk Meningkatkan Pemahaman Konsep Siswa. Skripsi. Program Studi Pendidikan Fisika, FKIP, Universitas PGRI Madiun. Pembimbing (I) Dra. Purwandari, M.M., M.Pd., (II) Dr. Jeffry Handhika, M.Pd., M.Si.

Penelitian ini bertujuan untuk menghasilkan bahan ajar E-Modul berbasis POE (*Predict, Observe and Explain*) pada materi suhu dan kalor untuk meningkatkan pemahaman konsep siswa. Metode penelitian yang digunakan adalah R&D (*Research and Development*) dengan model ADDIE (*Analysis, Design, Development, Implementation and Evaluation*). Subjek penelitian meliputi 10 siswa kelas XI C, 34 siswa kelas XI A SMAN Kabupaten Madiun dan 5 validator dari guru pendidikan fisika. Teknik pengumpulan data yang digunakan berupa observasi, wawancara, angket, soal tes dan dokumentasi. Instrumen yang digunakan meliputi lembar angket validasi produk, lembar validasi angket respon siswa dan angket validasi soal tes pemahaman konsep. Hasil kelayakan berdasarkan penilaian validator memperoleh nilai rata-rata persentase sebesar 94,66% dari ahli materi dan sebesar 95,4% dari ahli media dengan kategori sangat layak. Kepraktisan diperoleh dari angket respon siswa pada uji terbatas menunjukkan nilai sebesar 83,9% dan pada uji lapangan sebesar 84,32% dengan kategori sangat praktis. Hasil uji t-test pada uji terbatas memperoleh nilai sig. (*2-tailed*) sebesar  $0,003 < 0,05$  dan pada uji lapangan sebesar  $0,001 < 0,05$ ,  $H_0$  ditolak dan  $H_a$  diterima. Dapat disimpulkan bahwa bahan ajar E-Modul berbasis POE (*Predict, Observe and Explain*) pada materi suhu dan kalor yang dikembangkan (1) layak dengan kriteria valid, praktis dan efektif serta (2) dapat meningkatkan pemahaman konsep siswa.

**Kata Kunci :** E-Modul, POE, Suhu dan Kalor, Pemahaman Konsep Siswa

### **ABSTRACT**

*Mukholiffatul, Maisaroh. 2024. Development of E-Modules Based on POE (Predict, Observe and Explain) on Temperature and Heat Materials to Improve Students' Conceptual Understanding. Thesis. Physics Education Study Program, FKIP, Universitas PGRI Madiun. Advisors (I) Dra. Purwandari, M.M., M.Pd., (II) Dr. Jeffry Handhika, M.Pd., M.Si.*

*This research aims to produce POE-based E-Module teaching materials (Predict, Observe, and Explain) on temperature and heat to enhance students' conceptual understanding. The research method employed is R&D (Research and Development) using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The research subjects included 10 students from class XI C, 34 students from class XI A at SMAN Madiun Regency, and 5 validators who are physics education teachers. Data collection techniques included observation, interviews, questionnaires, tests, and documentation. The instruments used comprised product validation questionnaire sheets, student response questionnaire validation sheets, and validation questionnaires for concept understanding test questions. The eligibility results, based on validator assessments, showed an average percentage score of 94.66% from material experts and 95.4% from media experts, both in the "very worthy" category. Practicality, as gauged from student response questionnaires in the limited test, showed a score of 83.9%, and in the field test, it was 84.32%, both in the "very practical" category. T-test results in the limited test showed a sig. value (2-tailed) of  $0.003 < 0.05$ , and in the field test, it was  $0.001 < 0.05$ , thus  $H_0$  is rejected, and  $H_a$  is accepted. It can be concluded that the POE-based E-Module teaching materials on temperature and heat (1) meet valid, practical, and effective criteria, and (2) can improve students' conceptual understanding.*

**Keywords:** *E-Module, POE, Temperature and Heat, Student Concept Understanding*