

ABSTRAK

Andalia Asmi: **Pengembangan E-Modul Kimia Interaktif Berbasis Problem Based Learning (PBL) Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa SMA Kelas X.** Tesis. Medan: Program Studi Pendidikan Kimia, Pascasarjana Universitas Negeri Medan, 2023

Penelitian ini bertujuan untuk mengembangkan dan mengetahui pengaruh E-Modul Kimia Berbasis Problem Based Learning (PBL) Untuk meningkatkan kemampuan berpikir kritis siswa SMA kelas X. Metode dalam penelitian ini menggunakan *Research and Development* (R&D) dengan model ADDIE. Instrumen yang digunakan dalam penelitian ini berupa instrument tes dan non tes yaitu lembar validasi standar BSNP yang telah dimodifikasi dan soal essay. Berdasarkan hasil validasi yang diperoleh dari validator dosen ahli materi dan guru mata pelajaran kimia diperoleh hasil rata-rata 3,31 dan 3,45 yang memenuhi kriteria “sangat layak”, dan dari ahli media, diperoleh hasil rata-rata sebesar 3,69 yang memenuhi kriteria “sangat layak”. Berdasarkan uji coba pembelajaran di kelas, E-modul dapat meningkatkan kemampuan berpikir kritis siswa dengan perolehan nilai N-Gain 0,48 dalam kategori sedang. Terdapat pengaruh yang signifikan pembelajaran dengan menggunakan e-modul berbasis problem based learning terhadap kemampuan berpikir kritis siswa dengan perolehan nilai $T_{hitung} = 2.1888 > T_{tabel} = 2.074$.

Kata Kunci: E-modul, PBL, Kimia, BSNP, ADDIE



ABSTRACT

Andalia Asmi: **Development of an Interactive Chemistry E-Module Based on Problem Based Learning (PBL) to Improve the Critical Thinking Ability of Class X High School Students.** Thesis. Medan: Chemistry Education Study Program, Medan State University Postgraduate, 2023.

This research aims to develop and determine the effect of Problem Based Learning (PBL) Chemistry E-Modules to improve the critical thinking skills of class X high school students. The method in this research uses Research and Development (R&D) with the ADDIE model. The instruments used in this research were test and non-test instruments, namely modified BSNP standard validation sheets and essay questions. Based on the validation results obtained from validators, material expert lecturers and chemistry subject teachers, an average result of 3.31 and 3.45 was obtained which met the "very appropriate" criteria, and from media experts. An average result of 3.69 was obtained which met the "very feasible" criteria. Based on classroom learning trials, the E-module can improve students' critical thinking skills by obtaining an N-Gain value of 0.48 in the medium category. There is a significant influence of learning using problem based learning based e-modules on students' critical thinking skills with a score of $T_{count} = 2.1888 > T_{table} = 2.074$.

Keywords : *E-module, PBL, Chemistry, BSNP, ADDIE*

