

ABSTRAK

Yusril R. Sihotang, NIM 4193311049 (2023). Pengembangan E-Modul Berbasis Model Pembelajaran PBL (*Problem Based Learning*) untuk Meningkatkan *Computational Thinking* Siswa Kelas X SMKN 4 Medan.

Tujuan dari penelitian ini adalah merancang *e-modul* berbasis *Problem Based Learning* yang valid, praktis, dan efektif, sehingga dapat digunakan untuk meningkatkan *Computational Thinking* siswa. Instrumen penelitiannya: lembar validasi modul ajar, pengamatan aktivitas siswa terhadap *e-modul*, *e-modul* oleh ahli materi, *e-modul* oleh ahli media, dan tes *Computational Thinking* siswa. Setelah seluruh instrumen divalidasi dan dinyatakan valid, kemudian dilakukan uji coba lapangan. Berdasarkan temuan penelitian, (1) Perangkat pembelajaran memiliki validitas 94,94% untuk modul ajar, validitas *e-modul* 95,57% untuk ahli materi, dan 94,79% untuk ahli media, kategori sangat valid, (2) Kepraktisan *e-modul* dikategorikan sangat praktis sebesar 92,31%, (3) *E-modul* yang dikembangkan efektif yaitu: (a) Tingkat ketuntasan belajar klasikal siswa pada uji lapangan sebesar 96,15%, (b) Tercapainya indikator tujuan pembelajaran dengan rerata 85,26, (c) Terjadi peningkatan nilai *Computational Thinking* siswa dengan rata-rata 45,52. Melalui uji Gain menunjukkan bahwa *Computational Thinking* siswa meningkat sebesar 0,77 dalam kategori tinggi.

Kata Kunci: *E-modul, problem based learning, computational thinking.*

ABSTRACT

Yusril R. Sihotang, NIM 4193311049 (2023). Development of E-Modules Based on PBL (Problem Based Learning) Learning Model to Improve Computational Thinking of Class X Students of SMKN 4 Medan.

The purpose of this research is to design a valid, practical, and effective e-module based on Problem Based Learning, so that it can be used to improve students' Computational Thinking. The research instruments: teaching module validation sheet, student activity observation of e-modules, e-modules by material experts, e-modules by media experts, and student Computational Thinking tests. After all instruments were validated and declared valid, then field trials were conducted. Based on the research findings, (1) Learning devices have a validity of 94.94% for teaching modules, 95.57% validity of e-modules for material experts, and 94.79% for media experts, very valid category, (2) The practicality of e-modules is categorized as very practical at 92.31%, (3) The developed e-modules are effective, namely: (a) The classical learning completeness rate of students in the field test was 96.15%, (b) The achievement of learning objectives indicators with an average of 85.26, (c) There was an increase in students' Computational Thinking scores with an average of 45.52. The Gain test showed that students' Computational Thinking increased by 0.77 in the high category.

Keywords: E-module, problem based learning, computational thinking.