

ABSTRAK

Dini Agnia: 1212070030 (2021) “Pengembangan Modul Elektronik Menggunakan *Thunkable with Canva* Berbasis Model Pembelajaran *Problem Based Learning* untuk Meningkatkan Keterampilan Berpikir Kritis Peserta Didik pada Materi Gelombang Cahaya”.

Penelitian ini bertujuan untuk mengetahui 1) kelayakan modul elektronik berbantuan *Thunkable with Canva*, 2) keterlaksanaan penggunaannya, dan 3) peningkatan keterampilan berpikir kritis peserta didik Sekolah Menengah Atas di Kabupaten Bandung. Penelitian menggunakan pendekatan *research and development* dengan model pengembangan ADDIE. Populasi penelitian adalah seluruh peserta didik kelas XII Fisika SMA Bina Muda Cicalengka dengan sampel sebanyak 26 orang. Instrumen penelitian meliputi lembar validasi materi, lembar validasi media, lembar observasi keterlaksanaan pembelajaran, serta tes keterampilan berpikir kritis. Teknik analisis yang digunakan meliputi uji Gregory, analisis keterlaksanaan pembelajaran, perhitungan *N-gain*, dan uji hipotesis. Hasil penelitian menunjukkan bahwa modul elektronik yang dikembangkan dinyatakan sangat layak dengan indeks Gregory sebesar 1,00. Keterlaksanaan pembelajaran berada pada kategori baik, baik dari aktivitas guru maupun peserta didik. Peningkatan keterampilan berpikir kritis siswa ditunjukkan oleh nilai *N-gain* sebesar 0,55 yang termasuk kategori sedang. Hasil uji hipotesis menggunakan uji *Wilcoxon* menunjukkan nilai signifikansi sebesar 0,00 ($p < 0,05$), yang berarti terdapat perbedaan signifikan antara sebelum dan sesudah menggunakan modul elektronik berbantuan *Thunkable with Canva*. Dengan demikian, dapat disimpulkan bahwa modul elektronik berbantuan *Thunkable with Canva* mampu meningkatkan keterampilan berpikir kritis peserta didik pada materi gelombang cahaya dan layak dijadikan alternatif media pembelajaran interaktif di Sekolah Menengah Atas.

Kata kunci: Keterampilan Berpikir Kritis, Modul Elektronik, Thunkable, Canva, Model pembelajaran PBL, Gelombang Cahaya

ABSTRACT

Dini Agnia : 1212070030 (2021). *"Development of Electronic Modules Using Thunkable with Canva Based on Problem Based Learning Model to Improve Students' Critical Thinking Skills on Light Wave Material".*

This study aims to investigate: (1) the feasibility of an electronic module assisted by Thunkable with Canva, (2) the implementation of its use, and (3) the improvement of students' critical thinking skills at the senior high school level in Bandung Regency. The research employed a research and development (R&D) approach with the ADDIE development model. The population consisted of all 12th-grade physics students at Senior High School Bina Muda Cicalengka, with a sample of 26 students. Research instruments included a material validation sheet, media validation sheet, learning implementation observation sheet, and a critical thinking skills test. The analysis techniques used were Gregory's test, learning implementation analysis, N-gain calculation, and hypothesis testing. The results showed that the developed electronic module was declared highly feasible with a Gregory index of 1.00. The learning implementation was categorized as good, both for teacher and student activities. The improvement of students' critical thinking skills was indicated by an N-gain value of 0,55 which falls into the moderate category. Hypothesis testing using the Wilcoxon test obtained a significance value of 0.00 ($p < 0.05$), indicating a significant difference between before and after using the Thunkable with Canva-assisted electronic module. Therefore, it can be concluded that the electronic module assisted by Thunkable with Canva can improve students' critical thinking skills on light wave material and is feasible to be implemented as an alternative interactive learning medium in senior high schools.

Keywords: Critical Thinking Skills, Electronic Modules, Thunkable, Canva, PBL learning model, Light Waves