

## ABSTRAK

### **PENGEMBANGAN E-MODUL MATEMATIKA BERBASIS *DISCOVERY LEARNING* BERBANTUAN *FLIP PDF PROFESSIONAL* UNTUK MENINGKATKAN HASIL BELAJAR SISWA SMA KELAS XI**

Oleh

**Kirana Senja**

Email : [Kiranasenja13@gmail.com](mailto:Kiranasenja13@gmail.com)

Penelitian ini membahas tentang pengembangan E-Modul matematika berbasis *discovery learning* berbantuan *flip pdf professional* untuk meningkatkan hasil belajar siswa kelas XI di SMA Nur Hasanah Medan kepada 20 siswa. Metodologi penelitian yang digunakan adalah *Research and Development* (R&D) menggunakan model ADDIE yang meliputi 5 tahap: *Analyze, Design, Development, Implementation* dan *Evaluation*. Hasil penelitian menunjukkan bahwa E-Modul telah memenuhi kriteria: ( 1 ) Kevalidan berdasarkan penilaian yang diberikan oleh 6 validator dengan skor rata-rata yaitu 4,35 kategori valid. ( 2 ) Kepraktisan dari hasil pengisian angket siswa mendapatkan skor rata-rata 4,5 kategori praktis. ( 3 ) Keefektifan penilaian dari ketuntasan hasil belajar siswa mendapatkan 85% dengan kategori sangat efektif. Adapun peningkatan hasil belajar matematika siswa dapat dilihat dari perhitungan nilai N-Gain pada uji coba I mendapatkan hasil 0,14 dengan kategori rendah dan pada uji coba II mendapatkan hasil 0,50 dengan kategori sedang. Sehingga dapat disimpulkan bahwa E-Modul matematika berbasis *discovery learning* berbantuan *flip pdf professional* dapat meningkatkan hasil belajar matematika siswa dengan peningkatan 0,36 dan layak untuk digunakan.

**Kata kunci:** *E-Modul, Discovery Learning, Flip Pdf Professional, Hasil Belajar*

## ABSTRACT

### DEVELOPMENT OF A MATHEMATICS E-MODULE BASED ON *DISCOVERY LEARNING* ASSISTED BY *FLIP PDF PROFESSIONAL* TO IMPROVE THE STUDENTS' LEARNING OUTCOMES OF SMA CLASS XI

By

**Kirana Senja**

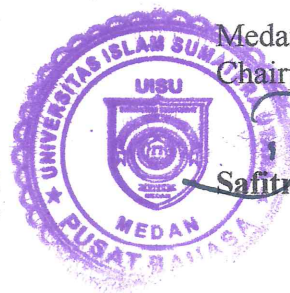
**Email : [Kiranasenja13@gmail.com](mailto:Kiranasenja13@gmail.com)**

This research discusses the development of a mathematics E-Module based on *discovery learning* assisted by *flip pdf professional* to improve the learning outcomes of the students in class XI at SMA Nur Hasanah Medan for 20 students. The research methodology used is *Research and Development* (R&D) using the ADDIE model which includes 5 stages: *Analyze, Design, Development, Implementation and Evaluation*. The research results show that the E-Module has fulfilled the criteria: (1) Validity based on assessments given by 6 validators with an average score of 4.35 in the valid category. (2) The practicality of the results of filling out the student questionnaire received an average score of 4.5 in the practical category. (3) The effectiveness of the assessment of the completeness of the student learning outcomes is 85% in the very effective category. The improvement in students' mathematics learning outcomes can be seen from the calculation of the N-Gain value in trial I which got a result of 0.14 in the low category and in trial II it got a result of 0.50 in the medium category. So it can be concluded that the mathematics E-Module based on *discovery learning* assisted by *flip pdf professional* can improve the students' mathematics learning outcomes with an increase of 0.36 and it is suitable for use.

**Keywords:** *E-Module, Discovery Learning, Flip Pdf Professional, Learning Outcomes*

This document is translated from the original documents of Indonesian language  
by Language Center UISU

Attested by.  
  
**Safitri Hariani, S.S., M.S.**  
Chairperson of Language Center UISU



Medan, November 10<sup>th</sup>, 2023  
Chairperson,

**Safitri Hariani, S.S., M.S.**