

ABSTRAK

YULI ASTRINITHA LUBIS. Pengembangan Media Pembelajaran Matematika Berbantu *Macromedia Flash* Dengan Penerapan Model Pembelajaran *Problem Based Learning* Untuk Meningkatkan Kemampuan Berpikir Komputasi dan *Self-Efficacy* Siswa kelas X SMA. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan. 2022.

Penelitian ini bertujuan untuk menganalisis: 1) kevalidan, kepraktisan, dan keefektifan media pembelajaran yang dikembangkan dengan *macromedia flash* dengan menerapkan model pembelajaran *Problem Based Learning* pada pembelajaran matematika; 2) peningkatan kemampuan berpikir komputasi siswa kelas X MA Swasta Miftahul Falah Diski dengan menggunakan media pembelajaran berbantuan *macromedia flash* yang dikembangkan dengan menerapkan model pembelajaran *Problem Based Learning*; 3) peningkatan *self-efficacy* siswa kelas X MA Swasta Miftahul Falah Diski dengan menggunakan media pembelajaran berbantuan *macromedia flash* yang dikembangkan dengan menerapkan model pembelajaran *Problem Based Learning*. Penelitian ini merupakan penelitian pengembangan dengan menggunakan model pengembangan Thiagarajan, Semmel dan Semmel (4-D). uji coba dilakukan sebanyak dua kali. Uji coba I dan uji coba II dilakukan di kelas X –MIPA 1 di MA Swasta Miftahul Falah Diski. Objek dalam penelitian ini adalah media pembelajaran matematika berbantuan *macromedia flash* dengan menerapkan model pembelajaran *Problem Based Learning* pada materi Sistem Persamaan Linier Tiga Variabel. Hasil penelitian menunjukkan: 1) Kevalidan media pembelajaran yang dikembangkan ditinjau dari analisis hasil validitas media pembelajaran oleh para validator dengan nilai rata-rata total sebesar 3,72 (kategori “Valid”). Sementara itu, kepraktisan media pembelajaran dilihat dari skor observasi keterlaksanaan pembelajaran pada uji coba II yaitu sebesar 3,73 (kategori “Terlaksana dengan Baik”). Keefektifan media pembelajaran ditinjau dari tiga aspek yaitu, ketuntasan klasikal, skor observasi aktivitas siswa, dan angket respon siswa. ketuntasan klasikal kemampuan berpikir komputasi siswa pada uji coba II sebesar 88% (22 siswa). Rata-rata persentase pencapaian waktu ideal aktivitas siswa pada uji coba II untuk tiga pertemuan adalah 21,8%, 19,2%, 21,5%, 26,0%, 9,8%, dan 1,8%. Rata-rata hasil respon siswa pada uji coba II adalah 92,54% (kategori “Tertarik”); 2) Peningkatan kemampuan berpikir komputasi siswa menggunakan media pembelajaran berbantuan *macromedia flash* yang dikembangkan dilihat dari indeks *gain* ternormalisasi. Pada uji coba II terjadi peningkatan nilai dengan skor 0,40 (kriteria “sedang”); 3) Peningkatan self - efficacy siswa menggunakan media pembelajaran *macromedia flash* yang dikembangkan dilihat dari meningkatnya nilai rata-rata hasil self-efficacy siswa dari uji coba I yaitu 3,07 meningkat menjadi 3,34 pada uji coba II.

Kata Kunci: Media Pembelajaran *Macromedia Flash*, *Problem Based Learning*, Kemampuan Berpikir Komputasi, *Self-Efficacy*.

ABSTRACT

YULI ASTRINITHA LUBIS. Development of Mathematics Learning Media Assisted by Macromedia Flash With the Application of Problem Based Learning Models to Improve Computational Thinking Ability and Self-Efficacy of Class X High School Students. Thesis. Medan: Study Program of Mathematics Education Post Graduate of State University of Medan.2022

This study aims to analyze: 1) The validity, practicality, and effectiveness of learning media developed with macromedia flash by applying the Problem Based Learning model in mathematics learning; 2) Increasing the computational thinking ability of the 10th grade students of MAS Miftahul Falah Diski by using macromedia flash assisted learning media which was developed by applying the Problem Based Learning model; 3) Increasing the self-efficacy of class X students at the MAS Miftahul Falah Diski by using macromedia flash assisted learning media which was developed by applying the Problem Based Learning model. This research is a development research using the development model of Thiagarajan, Semmel and Semmel (4-D). Trials were carried out twice. First and second trial were conducted in class X MIPA 1 at the MAS Miftahul Falah Diski. The object of this research is the learning media of mathematics assisted by macromedia flash by applying the Problem Based Learning model to the material of the Three Variable Linear Equation System. The results showed: 1) The validity of the developed learning media in terms of the analysis of the results of the validity of the learning media by the validators with a total average value of 3,72 ("Valid" category). Meanwhile, the practicality of learning media is seen from the observation score of the implementation of learning in the second trial, which is 3,73 (category "Well Implemented"). The effectiveness of learning media in terms of three aspects, namely, classical completeness, student activity observation scores, and student response questionnaires. Classical completeness of students' computational thinking ability in the second trial for three meetings was 21,8%, 19,2%, 21,5%, 26,0%, 9,8%, and 1,8%. The average student response results in the second trial were 92,54% (category "Interested"); 2) Increasing students' computational thinking skills using macromedia flash assisted learning media which was developed in terms of the normalized gain index. In the second trial there was an increase in the score with a score of 0,40 (criteria "medium"); 3) The increase in students' self-efficacy using macromedia flash learning media that was developed was seen from the increase in the average value of the students' self-efficacy results from the first trial, which was 3,07 increasing to 3,34 in the second trial.

Keywords: Macromedia flash, Problem Based Learning, Computational Thinking Ability, Self-Efficacy.