

ABSTRAK

Mayana, NIM 4193311018 (2023). Pengembangan Bahan Ajar Matematika Berbentuk Video Pembelajaran Animasi Berbasis *Problem Based Learning* Untuk Meningkatkan Kemampuan Komunikasi Matematik Siswa SMA Kelas X

Penelitian ini bertujuan untuk mendapatkan bahan ajar matematika berbasis *Problem Based Learning* yang valid, praktis, dan efektif sehingga meningkatkan kemampuan siswa SMA kelas X dalam komunikasi matematik pada materi sistem persamaan linear tiga variabel. Instrumen yang digunakan yaitu lembar validasi bahan ajar matematika, tes kemampuan komunikasi matematik (*pre-test* dan *post-test*), dan lembar validasi instrumen tes. Setelah instrumen dan bahan ajar matematika dinyatakan valid oleh dosen validator ahli materi dan media, kemudian dilanjutkan uji coba lapangan. Penjelasan temuan penelitian, yaitu: (1) Bahan ajar matematika yang dikembangkan memenuhi persyaratan kevalidan dari validator ahli media dengan rata-rata 4,6 dan ahli materi dengan rata-rata 4,76 berada pada kategori sangat valid, (2) Bahan ajar matematika yang dikembangkan memenuhi persyaratan kepraktisan berdasarkan hasil angket respon siswa dan guru berada pada kategori rentang 81% - 100 % berada pada kategori sangat praktis, (3) Bahan ajar yang dikembangkan telah memenuhi kriteria keefektifan yaitu (a) hasil belajar siswa memenuhi kriteria ketuntasan belajar secara individual dengan jumlah 24 siswa yang lulus, (b) hasil belajar siswa memenuhi kriteria ketuntasan belajar secara klasikal dengan persentase sebesar 88,8%, (c) kemampuan penguasaan komunikasi matematik siswa sebelum menggunakan bahan ajar (*pre-test*) sebesar 59% kategori rendah, setelah menggunakan bahan ajar (*post-test*) sebesar 83% meningkat pada kategori tinggi, (d) Analisis *N-gain* menunjukkan peningkatan kemampuan komunikasi matematik siswa sebesar 0,61 berada pada kategori sedang.

Kata Kunci: Bahan Ajar, Kemampuan Komunikasi Matematik, *Problem Based Learning*

ABSTRACT

Mayana, NIM 4193311018 (2023). Development of Mathematics Teaching Materials in the Form of Animated *Learning* Videos Based on Problem Based Learning to Improve Mathematical Communication Skills of Grade X High School Students

This study aims to obtain mathematics teaching materials based on *Problem Based Learning* that are valid, practical, and effective so as to improve the ability of grade X high school students in mathematical communication on the material of the system of linear equations of three variables. The instruments used are validation sheets for mathematics teaching materials, tests of mathematical communication skills (pre-test and post-test), and validation sheets for test instruments. After the instruments and mathematics teaching materials were declared valid by the material and media expert validator lecturers, the field trial was continued. Explanation of research findings, namely: (1) The developed mathematics teaching materials meet the validity requirements of media expert validators with an average of 4.6 and material experts with an average of 4.76 are in a very valid category, (2) The developed mathematics teaching materials meet the practicality requirements based on the results of student and teacher response questionnaires in the category range 81% - 100% are in the very practical category, (3) The developed teaching materials have met the effectiveness criteria, namely (a) student learning outcomes meet the criteria for individual learning completeness with a total of 24 students passing, (b) student learning outcomes meet the criteria for classical learning completeness with a percentage of 88.8%, (c) students' ability to master mathematical communication before using teaching materials (*pre-test*) of 59% in the low category, after using teaching materials (*post-test*) of 83% increased in the high category, (d) *N-gain* analysis shows an increase in the ability of students' mathematical communication skills of 0.61 in the medium category.

Keywords: Teaching Materials, Mathematical Communication Skills, Problem Based Learning

