

ABSTRAK

Eloninta Kristiani, NIM. 4183311053 (2023). Pengembangan Bahan Ajar *E-Handout* Berbasis *Problem Based Learning* Menggunakan *Flip PDF Professional* Untuk Meningkatkan Kemampuan Pemecahan Masalah Matematis Siswa SMA.

Penelitian ini bertujuan untuk: (1) memperoleh bahan ajar *e-handout* berbasis *Problem Based Learning* menggunakan *Flip PDF Professional* yang valid, praktis dan efektif sehingga dapat meningkatkan kemampuan pemecahan masalah matematis siswa; (2) mendeskripsikan peningkatan kemampuan pemecahan masalah matematis siswa melalui bahan ajar *e-handout* berbasis *Problem Based Learning* menggunakan *Flip PDF Professional*. Subjek dalam penelitian ini adalah siswa kelas X SMA Swasta Katolik Budi Murni 2 Medan tahun ajaran 2022/2023, sedangkan objek dalam penelitian ini adalah bahan ajar *e-handout* matematika berbasis *Problem Based Learning* menggunakan *Flip PDF Professional* pada materi Sistem Persamaan Linear Tiga Variabel. Penelitian ini adalah penelitian *Research & Development* (R&D) menggunakan model pengembangan 4D yaitu *Define* (pendefinisian), *Design* (perancangan), *Develop* (pengembangan) dan *Disseminate* (penyebaran). Hasil penelitian ini menunjukkan bahwa: (1a) Bahan ajar *e-handout* berbasis *Problem Based Learning* menggunakan *Flip PDF Professional* berdasarkan nilai dari validator berada dalam kategori valid dengan nilai rata-rata untuk materi adalah 3,41 dan nilai rata-rata untuk media adalah 3,28; (1b) Bahan ajar *e-handout* berbasis *Problem Based Learning* menggunakan *Flip PDF Professional* termasuk dalam kategori sangat praktis dengan perolehan nilai respon guru sebesar 93% dan respon keseluruhan siswa sebesar 76,3%; (1c) Bahan ajar *e-handout* berbasis *Problem Based Learning* menggunakan *Flip PDF Professional* telah memenuhi kriteria efektif ditinjau dari ketuntasan belajar secara klasikal dengan persentase 88.57%, ketercapaian indikator/tujuan pembelajaran tiap indikator telah tercapai dan waktu pembelajaran yang tidak melebihi batas waktu pembelajaran dari biasanya; dan (2) Kemampuan pemecahan masalah matematis siswa meningkat, dilihat berdasarkan kemampuan pemecahan masalah masing-masing indikator yang telah mengalami peningkatan dan peningkatan nilai N-Gain dari *pretest* dan *posttest* yang diperoleh adalah 0,61 berada dalam kategori sedang.

Kata Kunci: Bahan Ajar *E-handout*, *Problem Based Learning*, Kemampuan Pemecahan Masalah Matematis, *Flip PDF Professional*.

ABSTRACT

Eloninta Kristiani, NIM. 4183311053 (2023). Development of Problem Based Learning E-Handout Teaching Materials Using Flip PDF Professional to Improve High School Students' Mathematical Problem Solving Ability.

This study aims to: (1) obtain e-handout teaching materials based on Problem Based Learning using Flip PDF Professional that are valid, practical and effective so as to improve students' mathematical problem solving abilities; (2) describes the increase in students' mathematical problem solving abilities through Problem Based Learning e-handout teaching materials using Flip PDF Professional. The subjects in this study were class X students of Budi Murni 2 Catholic Private High School Medan for the academic year 2022/2023, while the objects in this study were Problem Based Learning-based mathematics e-handout materials using Flip PDF Professional on Three-Variable Linear Equation System material. This research is a Research & Development (R&D) research using a 4D development model namely Define, Design, Develop and Disseminate. The results of this study indicate that: (1a) Problem Based Learning based e-handout teaching materials using Flip PDF Professional based on the validator's score are in the valid category with the average score for the material is 3.41 and the average score for the media is 3.28; (1b) Problem Based Learning-based e-handout teaching materials using Flip PDF Professional are included in the very practical category with a teacher response score of 93% and an overall student response of 76.3%; (1c) Problem Based Learning-based e-handout teaching materials using Flip PDF Professional have met the effective criteria in terms of classical learning completeness with a percentage of 88.57%, the achievement of indicators/learning objectives for each indicator has been achieved and the learning time does not exceed the learning time limit of usually; and (2) the students' mathematical problem-solving abilities increased, judging by the problem-solving abilities of each indicator that had increased and the N-Gain value increase from the pretest and posttest obtained was 0.61 in the medium category.

Keywords: E-handout Teaching Materials, Problem Based Learning, Mathematical Problem Solving Ability, Flip PDF Professional.