

ABSTRAK

Zamaludin. (2025). Pengembangan E-LKPD Berbasis *Problem-Based Learning* Sebagai Media Bantu Pembelajaran Terdiferensiasi Pada Materi Sistem Persamaan Linear Tiga Variabel Kelas X . Skripsi. Tanjungpinang: Program Studi Pendidikan Matematika, Universitas Maritim Raja Ali Haji. Pembimbing I: Puji Astuti, S.Pd., M.Sc. Pembimbing II: Nurul Hilda Syani Putri, S.Pd., M.Pd.

Kata Kunci: E-LKPD, *Problem-Based Learning*, pembelajaran terdiferensiasi, SPLTV, media pembelajaran digital

Penelitian ini bertujuan mengembangkan E-LKPD berbasis *Problem-Based Learning* sebagai media pembelajaran terdiferensiasi pada materi Sistem Persamaan Linear Tiga Variabel (SPLTV) kelas X SMK. Latar belakang masalah meliputi keterbatasan bahan ajar yang mendukung pembelajaran terdiferensiasi, dominasi metode ceramah dalam pembelajaran, dan kesulitan siswa memahami materi SPLTV. Penelitian menggunakan metode *Research and Development* (R&D) dengan model ADDIE yang terdiri dari tahap analisis, desain, pengembangan, dan implementasi. Subjek penelitian melibatkan validator ahli (materi, media, dan bahasa) serta 30 siswa kelas X DKV SMK Negeri 1 Tanjungpinang. Produk E-LKPD dikembangkan menggunakan *Articulate Storyline 3* dengan diferensiasi konten berdasarkan tiga tingkat capaian belajar (Kode A, B, dan C) mengikuti sintaks *Problem-Based Learning*. Instrumen penelitian berupa lembar validasi ahli dan angket kepraktisan yang dianalisis menggunakan skala Likert. Hasil penelitian menunjukkan bahwa produk E-LKPD memperoleh validasi ahli dengan rata-rata 86,67% (kategori sangat valid) dan tingkat kepraktisan 89,28% (kategori sangat praktis). Validasi ahli media mencapai 93,75%, ahli bahasa 86,25%, dan ahli materi 80%. Uji kepraktisan dari guru menunjukkan 88,57% dan dari siswa 90%. Produk ini terbukti valid dan praktis untuk mendukung pembelajaran terdiferensiasi berbasis *Problem-Based Learning* pada materi SPLTV, memberikan fleksibilitas bagi siswa belajar sesuai tingkat capaian belajarnya.

ABSTRACT

Zamaludin. (2025). Development of Problem-Based Learning E-LKPD as a Differentiated Learning Support Media for Systems of Linear Equations with Three Variables Material in Grade X. Thesis. Tanjungpinang: Mathematics Education Study Program, Universitas Maritim Raja Ali Haji. Advisor I: Puji Astuti, S.Pd., M.Sc. Advisor II: Nurul Hilda Syani Putri, S.Pd., M.Si.

Keywords: *GeoGebra*-Assisted E-LKPD, Learning Outcomes

This research aims to develop a Problem-Based Learning E-LKPD as a differentiated learning media for Systems of Linear Equations with Three Variables (SPLTV) material for grade X vocational high school. The background problems include limited teaching materials supporting differentiated learning, dominance of lecture methods in learning, and students' difficulties in understanding SPLTV material. This research employs Research and Development (R&D) method with ADDIE model consisting of analysis, design, development, and implementation stages. Research subjects involved expert validators (material, media, and language) and 30 students from grade X DKV at SMK Negeri 1 Tanjungpinang. The E-LKPD product was developed using Articulate Storyline 3 with content differentiation based on three learning achievement levels (Code A, B, and C) following Problem-Based Learning syntax. Research instruments included expert validation sheets and practicality questionnaires analyzed using Likert scale. Results showed that the E-LKPD product obtained expert validation with an average of 86.67% (very valid category) and practicality level of 89.28% (very practical category). Media expert validation reached 93.75%, language expert 86.25%, and material expert 80%. Practicality test from teachers showed 88.57% and from students 90%. This product is proven valid and practical to support Problem-Based Learning differentiated learning on SPLTV material, providing flexibility for students to learn according to their learning achievement levels.