

ABSTRAK

Linda Handayani. 2025. **PENGEMBANGAN LEMBAR KERJA PESERTA DIDIK ELEKTRONIK (E-LKPD) MULTIMODUS REPRESENTASI BERBASIS *PROBLEM BASED LEARNING* (PBL) PADA MATERI TERMODINAMIKA**

Penelitian dan pengembangan ini dilatarbelakangi oleh penggunaan LKPD pada pembelajaran Fisika di SMAN 2 Singaparna yang masih kurang menarik, belum berbasis pemecahan masalah, dan belum memanfaatkan media elektronik seperti smartphone atau laptop. Penelitian ini bertujuan untuk menghasilkan Lembar Kerja Peserta Didik Elektronik (E-LKPD) multimodus representasi berbasis *Problem Based Learning* (PBL) yang valid dan praktis digunakan dalam pembelajaran. Metode yang digunakan adalah *Research and Development* (R&D) dengan model pengembangan ADDIE (*Analysis, Design, Development, Implementation, Evaluation*) yang dikembangkan oleh Dick and Carey. Subjek penelitian melibatkan peserta didik kelas XI-3 dan XI-4 SMA Negeri 2 Singaparna. Kelayakan produk dinilai melalui validasi oleh ahli materi, ahli media, dan ahli bahasa. Data hasil validasi dianalisis menggunakan indeks Aiken's V. Hasil penelitian menunjukkan nilai Aiken's V masing-masing sebesar 0,73 untuk ahli materi, 0,77 untuk ahli media, dan 0,81 untuk ahli bahasa, dengan kategori valid. Sementara itu, hasil uji kepraktisan memperoleh rata-rata 88,58% dengan kategori sangat praktis. Dengan demikian, E-LKPD multimodus representasi berbasis model PBL pada materi Termodinamika yang dikembangkan dinyatakan valid dan sangat praktis untuk digunakan dalam proses pembelajaran Fisika.

Kata kunci: E-LKPD, Multimodus Representasi, *Problem Based Learning*, Termodinamika

ABSTRACT

Linda Handayani. 2025. **DEVELOPMENT OF MULTIMODUS REPRESENTATION ELECTRONIC STUDENT (E-LKPD) WORK SHEET BASED ON PROBLEM BASED LEARNING (PBL) IN THERMODYNAMIC MATERIALS**

*This research and development is motivated by the use of Student Worksheets (LKPD) in Physics learning at SMAN 2 Singaparna which is still less interesting, not based on problem solving, and does not utilize electronic media such as smartphones or laptops. This study aims to produce a valid and practical multimodal representation Electronic Student Worksheet (E-LKPD) based on Problem Based Learning (PBL) for learning. The method used is Research and Development (R&D) with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development model developed by Dick and Carey. The research subjects involved students in grades XI-3 and XI-4 of SMA Negeri 2 Singaparna. Product feasibility was assessed through validation by material experts, media experts, and linguists. Validation data were analyzed using the Aiken's *V* index. The results showed that the Aiken's *V* values were 0.73 for material experts, 0.77 for media experts, and 0.81 for linguists, respectively, with a valid category. Meanwhile, the practicality test results obtained an average score of 88.58%, categorized as very practical. Thus, the multimodal representational E-LKPD based on the PBL model for the Thermodynamics topic developed is declared valid and very practical for use in the Physics learning process.*

Keywords: E-LKPD, Multimodal Representation, Problem-Based Learning, Thermodynamics