

**PENGEMBANGAN LEMBAR KERJA PESERTA DIDIK BERBASIS
SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS (STEM
PADA MATERI SISTEM PERNAPASAN MANUSIA DI KELAS
XI IPA MAN 2 PADANG LAWAS T.P 2022/2023**

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Abstrak

Sistem pendidikan kontemporer di Indonesia menuntut peserta didik memiliki pengetahuan, keterampilan, dan kemampuan di bidang teknologi, media, dan informasi, serta bakat belajar dan inovatif. Mengingat persyaratan ini, profesionalisme pendidik sangat penting untuk mencapai tujuan pembelajaran abad ke-21. Salah satu pembelajaran yang dapat digunakan yaitu bahan ajar LKPD berbasis STEM. Tujuan Penelitian ini adalah menghasilkan LKPD berbasis STEM untuk meningkatkan hasil belajar siswa. Penelitian ini menggunakan metode penelitian *research and development* dengan model 4-D, yang terdiri dari empat tahap pengembangan yaitu tahap pendefinisian (*define*), tahap perancangan (*define*), pengembangan (*develop*), dan tahap penyebaran (*dessiminate*). Hasil penelitian diperoleh bahwa pengembangan LKPD berbasis STEM berdasarkan penilaian ahli materi diperoleh persentase 78,1% dengan kategori layak, penilaian ahli pembelajaran diperoleh persentase 80,8% dengan kategori layak, penilaian ahli desain diperoleh persentase 93,7% dengan kategori sangat layak, penilaian guru bidang studi diperoleh persentase 98,2% dengan kategori sangat layak, sedangkan hasil tanggapan/respon peserta didik diperoleh persentase 98,7% dengan kategori baik. Hasil dari penggunaan LKPD berbasis STEM diperoleh skor rata-rata 93,12% dengan persentase ketuntasan sebesar 93,75% dengan jumlah peserta didik yang tuntas memiliki penilaian sangat tinggi. Dapat disimpulkan bahwa LKPD berbasis STEM efektif dalam meningkatkan hasil belajar siswa.

Kata Kunci: LKPD, Berbasis STEM, Pengembangan

**DEVELOPMENT OF STUDENT WORKSHEET BASED ON
SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS (STEM
ON HUMAN RESPIRATORY SYSTEM MATERIALS IN CLASS
XI IPA MAN 2 PADANG LAWAS T.P 2022/2023**

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Abstract

The contemporary education system in Indonesia demands that learners have knowledge, skills, and abilities in technology, media, and information, as well as an aptitude for learning and innovation. Given these requirements, educator professionalism is essential to achieving 21st century learning goals. One of the lessons that can be used is STEM-based LKPD teaching materials. The purpose of this research is to produce STEM-based LKPD to improve student learning outcomes. This study uses a research and development research method with the 4-D model, which consists of four development stages, namely the defining stage (define), the design stage (define), the development stage (develop), and the dissemination stage (disseminate). The results showed that the development of STEM-based LKPD based on the assessment of material experts obtained a percentage of 78.1% with a decent category, the assessment of learning experts obtained a percentage of 80.8% with a decent category, the assessment of design experts obtained a percentage of 93.7% with a very decent category, the assessment of the subject teacher obtained a percentage of 98.2% with a very decent category, and the results of students' responses obtained a percentage of 98.7% with a good category. The results of the use of STEM-based LKPD obtained an average score of 93.12% with a percentage of completeness of 93.75%, and the number of students who completed the assessment was very high. It can be concluded that STEM-based LKPD is effective in improving student learning outcomes.

Keywords: Student Worksheet, STEM Based, Development