# ABSTRAK

**Agustina Ica Pratiwi Marbun, NIM 4172141019 (2021). Pengembangan LKPD Berbasis STEM (*Science, Technology, Engineering, and Mathematics*) Pada Materi Sistem Pernapasan Manusia Kelas XI MIA di SMA Negeri 1 Lubuk Pakam T.P 2020/2021.**

Penelitian ini bertujuan untuk menghasilkan Lembar Kerja Peserta Didik (LKPD) berbasis STEM (*Science, Technology, Engineering, And Mathematics*) pada materi sistem pernapasan manusia. Desain penelitian yang digunakan dalam penelitian ini adalah jenis penelitian dan pengembangan. Penelitian pengembangan ini mengadopsi model pengembangan instruksional 4D dengan tahapan meliputi *Define, Design, Develop*, dan *Disseminate*. Subjek dalam penelitian ini adalah Ahli Desain, Ahli Materi, Ahli Pembelajaran, Guru Biologi, Siswa kelas XI MIA SMA Negeri 1 Lubuk Pakam. Hasil penelitian menunjukkan bahwa LKPD berbasis STEM yang dikembangkan berdasarkan penilaian Ahli Desain diperoleh persentase sebesar 94,04% dengan kriteria sangat layak, penilaian ahli materi diperoleh persentase sebesar 86,53% dengan kriteria sangat layak, dan penilaian ahli pembelajaran sebesar 89,28% dengan kriteria sangat layak. Respon guru biologi terhadap LKPD berbasis STEM yang dikembangkan mendapatkan tanggapan positif dengan persentase sebesar 94,23% dengan kriteria sangat layak. Respon siswa terhadap LKPD berbasis STEM yang dikembangkan mendapatkan tanggapan positif dengan persentase sebesar 89,74% dengan kriteria baik. Hasil ketuntasan belajar klasikal dari penggunaan LKPD berbasis STEM yang dikembangkan diperoleh persentase sebesar 81,81% dengan jumlah peserta didik yang tuntas sebanyak 27 orang.

**Kata Kunci**: LKPD STEM, 4D, Ketuntasan Belajar Klasikal.

# ABSTRACT

**Agustina Ica Pratiwi Marbun, NIM 4172141019 (2021). Development of STEM (*Science, Technology, Engineering, and Mathematics*) Based Student Worksheet on The Human Respiratory System Material for Class XI MIA at SMA Negeri 1 Lubuk Pakam Academic Year 2020/2021.**

This study aims to produce Student Worksheets based on STEM (Science, Technology, Engineering, and Mathematics) on the human respiratory system material. The research design used in this research is research and development type. This development research adopts a 4D instructional development model with stages including Define, Design, Develop, and Disseminate. The subjects in tihis study were Design Experts, Material Experts, Learning Experts. Biology Teachers, Class XI MIA students at SMA Negeri 1 Lubuk Pakam. The results showed that the STEM-based Student Worksheets developed based on the assessment of Design Experts obtained a percentage of 94,04% with very feasible criteria, material expert assessment obtained a percentage of 86,53% with very feasible criteria, and learning expert assessments of 89,28% with very decent criteria. The biology teacher's response to the developed STEM-based Student Worksheets received a positive response with a percentage of 94,23% with very feasible criteria. Student responses to the developed STEM-based worksheets received positive responses with a percentage of 89,74% with good criteria. The results of classical learning completeness from the use of the developed STEM-based Student Worksheets obtained a percentage of 81,81% with the number of students who completed as many as 27 people.

**Keywords**: STEM Student Worksheets, 4D, Classical Learning Mastery.