ABSTRAK

Ayu Wandira Sitorus, NIM 4171141008 (2021). Pengembangan Lembar Kerja Peserta Didik Berbasis STEM (*Science, Technology, Engineering, Mathematics*) Pada Materi Sistem Ekskresi Manusia di kelas XI IPA SMA Negeri 2 Tebing Tinggi.

Penelitian ini bertujuan untuk merancang, menghasilkan dan mengetahui kelayakan dari Lembar Kerja Peserta Didik berbasis STEM (*Sains, Technology, Engineering, Mathematics*) pada materi Sistem Ekskresi Manusia. Jenis penelitian ini adalah penelitian pengembangan (*Research and Development*) dengan desain penelitian menggunakan model pengembangan 4-D (*Define, Design, Develop, Dessiminate*). Subjek dalam penelitian ini adalah Ahli Materi, Ahli Pembelajaran, Ahli Desain, Guru Biologi dan peserta didik kelas XI IPA 2 SMA Negeri 2 Tebing Tinggi yang berjumlah 22 orang. Pengumpulan data dilakukan dengan instrument berupa lembar penilaian validasi ahli materi, ahli pembelajaran, ahli desain, penilaian guru dan respon peserta didik. Teknik analisis data menggunakan deskriptif kuantitatif dan kualitatif. Hasil penelitian menunjukkan bahwa LKPD berbasis STEM yang dikembangkan berdasarkan penilaian ahli materi diperoleh presentase rata-rata 85 % dengan kriteria sangat layak, penilaian ahli pembelajaran diperoleh persentase rata-rata 89 % dengan kriteria sangat layak, penilaian ahli desain diperoleh persentase rata-rata 92 % dengan kriteria sangat layak, penilaian guru biologi diperoleh persentase 98 % dengan kriteria sangat layak. dan respon peserta didik diperoleh persentase 90 % dengan kriteria baik dan dapat digunakan dalam pembelajaran. Hasil uji coba kelayakan LKPD dilakukan dengan uji coba kelompok terbatas kepada 22 peserta didik kelas XI IPA 2 SMA Negeri 2 Tebing Tinggi dengan jumlah presentase ketuntasan belajar klasikal sebesar 86,36 % dengan jumlah peserta didik yang tuntas sebanyak 19 orang. LKPD berbasis STEM pada materi Sistem Ekskresi Manusia yang telah dikembangkan memperoleh kriteria “Sangat Layak” dan telah memenuhi persyaratan kelayakan digunakan dalam proses pembelajaran Biologi pada materi Sistem Eksresi Manusia pada kelas XI SMA.

Kata Kunci : Pengembangan LKPD, STEM, Model 4-D, Sistem Eksresi Manusia

ABSTRACT

Ayu Wandira Sitorus, NIM 4171141008 (2021). Development of STEM-Based Student Worksheets (Science, Technology, Engineering, Mathematics) on Human Excretory System Material in class XI Science of SMA Negeri 2 Tebing Tinggi.

This study aims to design, produce and determine the feasibility of STEM-based Student Worksheets (Science, Technology, Engineering, Mathematics) on the Human Excretory System material. This type of research is research and development with a research design using a 4-D development model (Define, Design, Develop, Dessiminate). The subjects in this study were Material Experts, Learning Experts, Design Experts, Biology Teachers and 22 students of class XI IPA 2 SMA Negeri 2 Tebing Tinggi. Data collection was carried out with instruments in the form of material expert validation assessment sheets, learning experts, design experts, teacher assessments and student responses. The data analysis technique used quantitative and qualitative descriptive. The results showed that STEM-based worksheets developed based on the assessment of material experts obtained an average percentage of 85% with very feasible criteria, learning expert assessments obtained an average percentage of 89% with very feasible criteria, design expert assessments obtained an average percentage of 92% with very feasible criteria, the assessment of biology teachers obtained a percentage of 98% with very decent criteria. and responses of students obtained a percentage of 90% with good criteria and can be used in learning. The results of the LKPD feasibility test were carried out with a limited group trial to 22 students of class XI IPA 2 SMA Negeri 2 Tebing Tinggi with a total percentage of classical learning completeness of 86.36% with the number of students who completed as many as 19 people. The STEM-based LKPD on the Human Excretory System material that has been developed obtains the "Very Eligible" criteria and has met the eligibility requirements for use in the Biology learning process on the Human Excretory System material in class XI SMA.

Keywords: LKPD Development, STEM, 4-D Model, Human Excretion System