

ABSTRAK

Ayu Liani Veronika, NIM 4172141020 (2017). Pengembangan Lembar Kerja Peserta Didik Berbasis STEAM (*Science, Technology, Engineering, Art and Mathematics*) dengan Video Pembelajaran Sub materi Daur Ulang Limbah Plastik di Kelas X MIPA SMA Swasta Laksamana Martadinata Medan T.A 2020/2021.

Penelitian ini bertujuan untuk mengembangkan Lembar Kerja Peserta Didik (LKPD) berbasis STEAM (*Science, Technology, Engineering, Art and Mathematics*) dengan Video Pembelajaran pada materi Daur Ulang Limbah Plastik dan mengetahui tingkat kelayakan LKPD serta mengetahui tanggapan guru dan siswa terhadap LKPD. Jenis penelitian yang digunakan adalah penelitian dan pengembangan. Perancangan LKPD dilakukan dengan menggunakan desain pengembangan instruksional model 4-D yaitu melalui tahap *define, design, develop, dan disseminate* yang dibatasi sampai tahap uji coba kelompok terbatas. Sampel penelitian adalah siswa kelas X M IA SMA Swasta Laksamana Martadinata Medan yaitu penilaian perorangan sebanyak 3 orang, penilaian kelompok kecil sebanyak 9 orang dan penilaian kelompok terbatas adalah siswa kelas X MIA 1 sebanyak 30 orang. Pengumpulan data dilakukan dengan instrumen berupa lembar uji kelayakan yang dilakukan terhadap ahli materi, ahli pembelajaran, ahli desain serta lembar tanggapan guru biologi dan tanggapan siswa. Analisis data menggunakan analisis deskriptif kuantitatif dan kualitatif. Hasil penilaian LKPD oleh Ahli Materi menunjukkan persentase rata-rata 91% dengan kriteria sangat layak, Ahli Pembelajaran 94% dengan kriteria sangat layak, dan Ahli Desain 94% dengan kriteria sangat layak. Hasil tanggapan guru biologi diperoleh persentase rata-rata 97,70 % dengan kriteria sangat layak dan hasil tanggapan siswa diperoleh persentase rata-rata 94,86% kriteria penilaian baik. Hasil dari penggunaan LKPD berbasis STEAM diperoleh ketuntasan belajar klasikal siswa diperoleh skor rata-rata 86,66% dengan jumlah peserta didik yang tuntas sebanyak 26 orang. Sehingga secara keseluruhan LKPD berbasis STEAM dengan video pembelajaran materi Daur Ulang Limbah Plastik sangat layak untuk digunakan dalam proses pembelajaran biologi pada materi Daur Ulang Limbah Plastik.

Kata kunci : *4D, Daur Ulang Limbah Plastik, LKPD, STEAM*

ABSTRACT

Ayu Liani Veronika, NIM 4172141020 (2017). Development of STEAM (Science, Technology, Engineering, Art and Mathematics) Student Worksheets with Learning Videos on Plastic Waste Recycling Sub-material in Class X MIA SMA Laksamana Martadinata Medan T.A 2020/2021.

This study aims to develop STEAM (Science, Technology, Engineering, Art and Mathematics) based Student Worksheets with Learning Videos on Plastic Waste Recycling material and determine the feasibility level of LKPD and determine teacher and student responses to LKPD. This type of research is research and development. The design of LKPD is carried out using the 4-D model of instructional development design, namely through the define, design, develop, and disseminate stages which are limited to the limited group trial stage. The research sample was students of class X MIA SMA Swasta Laksamana Martadinata Medan, namely 3 individual assessments, 9 small group assessments and 30 students of X MIA 1 class. Data collection was carried out with instruments in the form of a feasibility test sheet conducted on material experts, learning experts, design experts as well as biology teacher response sheets and student responses. Data analysis used quantitative and qualitative descriptive analysis. The results of the LKPD assessment by material experts showed an average percentage of 91% with very feasible criteria, 94% learning experts with very feasible criteria, and 94% design experts with very feasible criteria. The results of the biology teacher's response obtained an average percentage of 97,70% with very feasible criteria and the results of student responses obtained an average percentage of 94,86% of good assessment criteria. The results of using STEAM-based LKPD obtained that students' classical learning completeness obtained an average score of 86,66% with the number of students who completed as many as 26 people. So that overall STEAM-based LKPD with video learning material Recycling Plastic Waste is very feasible to be used in the biology learning process on Plastic Waste Recycling material.

Keywords: *4D, Plastic Waste Recycling, LKPD, STEAM*

