ABSTRAK

ALMUNAWARAH: Pengembangan LKPD Terkait Pengolahan Limbah Organik Berbasis *Green Economy* Untuk Meningkatkan Literasi Sains Peserta Didik Di MTsS Syamsuddhuha. **Program Studi Pendidikan Kimia FKIP Universitas Malikussaleh, 2025.**

Penelitian ini bertujuan untuk menguji kevalidan LKPD terkait pengolahan limbah organik berbasis *green economy* serta mengetahui peningkatan literasi sains peserta didik kelas VIII pada materi unsur, senyawa, dan campuran di MTs Syamsuddhuha.

Metode yang digunakan adalah *Research & Development (R&D)* dengan model 4D: ***define*** (analisis kebutuhan), ***design*** (perancangan LKPD), ***development*** (validasi oleh 2 dosen dan 2 guru, serta uji coba siswa), dan ***disseminate*** (implementasi dan pengukuran literasi sains menggunakan desain *Two-Group Pretest-Posttest* pada 43 siswa kelas $VIII^1$ dan $VIII^2$). Data non-tes dikumpulkan melalui angket, wawancara, dan validasi, sedangkan data tes menggunakan soal literasi yang telah divalidasi, dengan hasil reliabilitas 0,78 (tinggi), tingkat kesukaran sedang (7 soal) dan mudah (1 soal), serta daya pembeda bervariasi dari sangat baik hingga cukup.

Hasil penelitian menunjukkan bahwa LKPD dinilai sangat valid oleh ahli materi (85%), ahli media (94%), dan guru (91%). Respon siswa terhadap LKPD juga sangat baik, dengan skor awal 91% dan akhir 85%. Uji N-gain menunjukkan peningkatan literasi sains kategori sedang di kelas eksperimen dan rendah di kelas kontrol, dengan data normal namun tidak homogen, serta hasil uji-t yang signifikan. Dengan demikian, LKPD ini valid dan efektif meningkatkan literasi sains siswa serta layak digunakan dalam pembelajaran IPA.

Kata Kunci: LKPD, Pengolahan Limbah Organik, *Green Economy,* Literasi Sains.

ABSTRACT

ALMUNAWARAH: The development of LKPD related to green economy-based organic waste treatment to improve the science literacy of students at MTsS Syamsuddhuha. **Chemistry Education Study Program, FKIP Malikussaleh University, 2025.**

This study aims to test the validity of LKPD related to green economy-based organic waste treatment and to determine the improvement of science literacy of grade VIII students in elemental, compound, and mixed materials at MTs Syamsuddhuha.

The methods used are *Research & Development (R&D)* with a 4D model: ***define*** (needs analysis), ***design*** (LKPD design), ***development*** (validation by 2 lecturers and 2 teachers, as well as student trials), and ***disseminate*** (implementation and measurement of science literacy using *the Two-Group Pretest-Posttest* design in 43 students of grades VIII1 and VIII2). Non-test data was collected through questionnaires, interviews, and validation, while test data used validated literacy questions, with reliability results of 0.78 (high), medium difficulty level (7 questions) and easy (1 question), and differentiating power varying from very good to adequate.

The results showed that LKPD was considered very valid by material experts (85%), media experts (94%), and teachers (91%). Students' response to LKPD was also very good, with an initial score of 91% and a final score of 85%. The N-gain test showed an increase in moderate category science literacy in the experimental class and low in the control class, with normal but not homogeneous data, as well as significant t-test results. Thus, this LKPD is valid and effective in improving students' science literacy and is suitable for use in science learning.

Keywords: LKPD, Organic Waste Treatment, *Green Economy,* Science Literacy.