

## ABSTRAK

**ALVINA WINDY :** Pengaruh Model *Learning Cycle 5E* Terintegrasi *Sustainable Lifestyle* Terhadap Hasil Belajar Kognitif dan Keterampilan Kolaborasi Peserta Didik Pada Materi Larutan Penyangga di SMA Negeri 1 Muara Batu. **Program Studi Pendidikan Kimia FKIP Universitas Malikussaleh, 2026.**

Penelitian ini bertujuan untuk mengetahui pengaruh model *learning cycle 5E* terintegrasi *sustainable lifestyle* terhadap hasil belajar kognitif dan keterampilan kolaborasi peserta didik pada materi larutan penyangga di SMA Negeri 1 Muara Batu. Penelitian ini menggunakan metode *pre-eksperimental* dengan desain *intact group comparison*. Populasi berjumlah 140 peserta didik kelas XI, dengan sampel kelas XI A1 sebagai kelas kontrol (29 peserta didik) dan kelas XI A2 sebagai kelas eksperimen (28 peserta didik) yang dipilih menggunakan teknik *purposive sampling*. Analisis data meliputi uji normalitas (*Shapiro-Wilk*), uji homogenitas (*Levene Test*), dan uji hipotesis (*Independent t-test*).

Hasil penelitian menunjukkan bahwa kelas eksperimen memperoleh hasil belajar kognitif dan keterampilan kolaborasi yang lebih baik dibandingkan kelas kontrol. Rata-rata *posttest* kelas eksperimen sebesar 79,29 dan kelas kontrol 66,21. Rata-rata keterampilan kolaborasi kelas eksperimen mencapai 82,25% (kategori sangat baik), sedangkan kelas kontrol 64,66% (kategori baik). Data berdistribusi normal dan homogen. Hasil uji *Independent t-test* menunjukkan nilai *Sig. (2-tailed)*  $0,000 < 0,05$ , sehingga  $H_0$  ditolak dan  $H_a$  diterima. Dengan demikian, model *learning cycle 5E* terintegrasi *sustainable lifestyle* berpengaruh terhadap hasil belajar kognitif dan keterampilan kolaborasi peserta didik.

Kata Kunci: Model *Learning Cycle 5E*, *Sustainable Lifestyle*, Hasil Belajar Kognitif, Keterampilan Kolaborasi

## ABSTRACT

**ALVINA WINDY:** The Effect of the 5E Learning Cycle Model Integrated with Sustainable Lifestyle on Cognitive Learning Outcomes and Students' Collaboration Skills in Buffer Solution Material at SMA Negeri 1 Muara Batu. **Chemistry Education Study Program, FKIP Universitas Malikussaleh, 2026.**

This study aims to find out the effect of the 5E learning cycle model integrated with a sustainable lifestyle on students' cognitive learning outcomes and collaboration skills for buffer solution material at SMA Negeri 1 Muara Batu. This research uses a pre-experimental method with an intact group comparison design. The population consists of 140 11th-grade students, with class XI A1 as the control class (29 students) and class XI A2 as the experimental class (28 students), selected using purposive sampling. Data analysis includes normality test (Shapiro-Wilk), homogeneity test (Levene Test), and hypothesis testing (Independent t-test).

The research results show that the experimental class achieved better cognitive learning outcomes and collaboration skills compared to the control class. The average posttest score of the experimental class was 79.29, while the control class scored 66.21. The average collaboration skills of the experimental class reached 82.25% (very good category), whereas the control class scored 64.66% (good category). The data were normally distributed and homogeneous. The Independent t-test results showed a Sig. (2-tailed) value of  $0.000 < 0.05$ , so  $H_0$  was rejected and  $H_a$  accepted. Thus, the 5E learning cycle model integrated with a sustainable lifestyle has an effect on students' cognitive learning outcomes and collaboration skills.

**Keywords:** 5E Learning Cycle Model, Sustainable Lifestyle, Cognitive Learning Outcomes, Collaboration Skills