

ABSTRAK

ANTI APRILIANI. 2026. **Pengaruh Model *Project Based Learning* (PjBL) Berbantuan *iNaturalist* Terhadap Keterampilan Metakognitif dan Literasi Biodiversitas pada Pembelajaran Biologi (Studi Eksperimen di Kelas X SMA Negeri 8 Tasikmalaya 2025/2026).** Jurusan Pendidikan Biologi. Fakultas Keguruan dan Ilmu Pendidikan, Universitas Siliwangi.

Tuntutan pendidikan abad ke-21 mengharuskan siswa memiliki keterampilan metakognitif untuk mengelola proses berpikir, serta literasi biodiversitas untuk memahami isu lingkungan. Namun, realitanya kedua kemampuan tersebut masih rendah. Keterampilan metakognitif yang lemah membuat siswa kesulitan merencanakan pemecahan masalah, sementara literasi biodiversitas yang minim menghambat siswa dalam mengambil keputusan terkait kelestarian ekologi. Penelitian ini bertujuan menganalisis pengaruh model *Project Based Learning* (PjBL) berbantuan aplikasi *iNaturalist* terhadap keterampilan metakognitif dan literasi biodiversitas siswa pada materi keanekaragaman hayati. Metode yang digunakan adalah kuasi eksperimen dengan *nonequivalent control group design*. Populasi penelitian mencakup seluruh 12 kelas X di SMA Negeri 8 Tasikmalaya tahun ajaran 2025/2026. Sampel dipilih melalui *purposive sampling*, menetapkan kelas X-7 sebagai kelas eksperimen, kelas X-9 sebagai kelas kontrol positif, dan kelas X-8 sebagai kelas kontrol negatif. Instrumen penelitian terdiri dari kuesioner *Metacognitive Awareness Inventory* (MAI) sebanyak 52 pernyataan dan tes literasi biodiversitas sebanyak 36 soal. Uji prasyarat menunjukkan data berdistribusi normal dan memiliki varians homogen. Data dianalisis menggunakan uji ANCOVA pada taraf signifikansi 5%. Hasil menunjukkan pengaruh signifikan pada keterampilan metakognitif ($F = 12,643$; $p < 0,001$) dan literasi biodiversitas ($F = 39,992$; $p < 0,001$). Kesimpulan dalam penelitian ini yaitu ada pengaruh yang signifikan dari penerapan model *Project Based Learning* (PjBL) berbantuan *iNaturalist* terhadap keterampilan metakognitif siswa dan ada pengaruh yang signifikan dari penerapan model *Project Based Learning* (PjBL) berbantuan *iNaturalist* terhadap literasi biodiversitas siswa.

Kata Kunci: *iNaturalist*, Keanekaragaman Hayati, Keterampilan Metakognitif, Literasi Biodiversitas, *Project Based Learning*.

ABSTRACT

ANTI APRILIANI. 2026. *The Effect of Project Based Learning (PjBL) Model Assisted by iNaturalist on Metacognitive Skills and Biodiversity Literacy in Biology Learning (An Experimental Study in Class X of SMA Negeri 8 Tasikmalaya 2025/2026)*. Department of Biology Education. Faculty of Teacher Training and Education, Universitas Siliwangi.

The demands of 21st-century education require students to possess metacognitive skills to manage their thinking processes, as well as biodiversity literacy to understand environmental issues. However, in reality, both abilities remain low. Weak metacognitive skills make it difficult for students to plan problem-solving strategies, while minimal biodiversity literacy hinders students in making decisions regarding ecological sustainability. This study aimed to analyze the effect of the Project Based Learning (PjBL) model assisted by the iNaturalist application on students' metacognitive skills and biodiversity literacy in the topic of biodiversity. The method used was a quasi-experimental design with a nonequivalent control group design. The study population included all 12 classes of grade X at SMA Negeri 8 Tasikmalaya for the 2025/2026 academic year. Samples were selected through purposive sampling, establishing class X-7 as the experimental group, class X-9 as the positive control group, and class X-8 as the negative control group. The research instruments consisted of a 52-item Metacognitive Awareness Inventory (MAI) questionnaire and a 36-item biodiversity literacy test. Prerequisite tests showed that the data were normally distributed and had homogeneous variance. Data were analyzed using ANCOVA at a 5% significance level. The results showed a significant effect on metacognitive skills ($F = 12,643$; $p < 0,001$) and biodiversity literacy ($F = 39,992$; $p < 0,001$). The conclusion of this study is that there is a significant effect of applying the Project Based Learning (PjBL) model assisted by iNaturalist on students' metacognitive skills, and there is a significant effect of applying the Project Based Learning (PjBL) model assisted by iNaturalist on students' biodiversity literacy.

Keywords: Biodiversity, Biodiversity Literacy, iNaturalist, Metacognitive Skills, Project Based Learning.