Excellent Educator, ISSN: 3048-9121 (Online) Vol. 3-3, February 1, 2026

Embedding AI Literacy in Biology

Excellent Educator, *3*(3), 2, 2026

Academic Insights

This mixed-method case study examines how AI literacy was integrated into an advanced secondary biology course through four interdisciplinary lessons combining biological content with foundational AI concepts such as machine learning. Data from 37 students show substantial improvement in understanding AI concepts, while gains in biology achievement were more limited. The findings highlight tensions between interdisciplinary integration and subject-specific learning, particularly in relation to instructional time and cognitive load. The study demonstrates that while disciplinary contexts can meaningfully support AI literacy, careful instructional sequencing is required to maintain depth in core subject learning.

Apply These Now

Design interdisciplinary lessons with explicit plans to support subject learning.
Allocate time to reinforce disciplinary reasoning alongside AI concepts.

Add These in Your Lesson

Ask students to explain the biology behind an AI-supported task without using the tool.
Use this to check subject understanding.

Avoid These Mistakes

Assuming AI-supported activities automatically improve subject mastery.
Allowing AI to overshadow core disciplinary goals.

Keywords

AI literacy; Biology education; Interdisciplinary learning; Secondary education; Machine learning

Reference

Zha, S., Bragdon, M. M., Gong, N., Wang, J., Leavesley, S., Eaton, R., & Bosarge, E. (2025). *A case study of integrating AI literacy education in a biology class*. *International Journal of Artificial Intelligence in Education*, 35, 2453–2477. https://doi.org/10.1007/s40593-025-00476-8

Suggested Citation

Excellent Educator. (2026). *Embedding AI Literacy in Biology*. *Excellent Educator*, 3(3), 2.