Critical Thinking in the Age of AI

Summary of Papaneophytou and Nicolaou (2025)

Excellent Educator, *3*(7), 4, 2026

Academic Insights

This review examines why critical thinking is increasingly important in biological sciences as artificial intelligence becomes more common in research and education. While AI can speed up analysis, personalize learning, and support problem-based activities, the authors stress that students must still question outputs, check for bias, interpret results in context, and maintain ethical judgment. Higher education has a major role in teaching students how to use AI as a tool without surrendering scientific rigor or independent thinking. The central insight is clear: AI can support learning and inquiry, but strong critical thinking remains essential for validating evidence and protecting scientific integrity.

Apply This Now

Teach students to question AI-generated answers and compare them with evidence and context.

Add This in Your Lesson

Include tasks where learners evaluate an AI response for accuracy, bias, and scientific validity.

Avoid This Mistake

Do not let speed and convenience replace skepticism, verification, and careful reasoning.

Keywords

artificial intelligence, biological sciences, critical thinking, higher education, scientific integrity

Reference

Papaneophytou, C., & Nicolaou, S. A. (2025). Promoting critical thinking in biological sciences in the era of artificial intelligence: The role of higher education. *Trends in Higher Education, 4*, 24. https://doi.org/10.3390/higheredu4020024

Suggested Citation

Excellent Educator. (2026). *Critical Thinking in the Age of AI*. Excellent Educator, 3(7), p. 4.