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THE INTERNATIONAL COMPETITION ON SUSTAINABLE EDUCATION



20TH AUGUST 2025

TRANSFORMING EDUCATION, DRIVING INNOVATION AND
ADVANCING LIFELONG LEARNING FOR EMPOWERED WORLD

CHATTING WITH NATURE: EXPLORING LOCAL PLANTS USING AI & LENS

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ABSTRACT

This innovation project aims to improve students' understanding of plant biodiversity through a hands-on, technology-integrated learning experience. It seeks to foster curiosity, environmental awareness, and digital literacy by combining outdoor exploration with Artificial Intelligence (AI) tools accessed via mobile devices, such as Google Lens and ChatGPT. Students used their mobile devices to photograph local plants, identify them instantly with AI-powered Google Lens, and gather additional insights through ChatGPT. They compiled their discoveries, including plant names, locations, and interesting facts on a collaborative Padlet board, creating a digital plant gallery. Feedback was collected using reflection prompts and rating scales. The activity demonstrated high levels of student engagement, enjoyment, and active participation. Students reported enhanced awareness and understanding of plant diversity and classification. The integration of mobile-based AI tools like Google Lens and ChatGPT deepened learning and made the experience more interactive. The project also encouraged outdoor exploration and fostered meaningful interdisciplinary connections. The project successfully enhanced students' understanding of plant biodiversity through an engaging, hands-on learning experience. Its flexible design supports diverse educational settings and fosters essential 21st-century skills.

Keywords: Plant biodiversity, Google Lens, ChatGPT, Mobile learning, Padlet

INTRODUCTION

In the 21st century, science education must adapt to keep pace with rapid technological advancements while nurturing environmental awareness and critical thinking (Chasokela, 2025). Biodiversity education, in particular, plays a key role in helping students understand ecological systems, conservation efforts, and the importance of sustainability (Id Babou *et al.*, 2023). Yet, traditional classroom-based learning often lacks the interactive and contextual experiences needed to fully engage students in biodiversity topics (Yli-Panula *et al.*, 2018).

Mobile technology and artificial intelligence (AI) present new opportunities to enrich science learning (Al Darayseh, 2023). AI-powered tools such as Google Lens and ChatGPT can support real-time

identification, exploration, and discussion of natural elements, making the learning process dynamic and student-centered (Deng *et al.*, 2024). When combined with outdoor learning, these technologies can transform passive information delivery into active, inquiry-based learning (Al Shloul *et al.*, 2024).

This project aims to enhance students' understanding of plant biodiversity through outdoor exploration and digital learning tools as well as to foster interdisciplinary learning, digital literacy, and appreciation for local biodiversity.

METHODS

Participants and project set-up

The project was implemented with a group of university students enrolled in a Concepts of Biology course. It was conducted around the Faculty of Applied Sciences and nearby locations. Equipped with mobile phones, they follow step-by-step as described in Table 1.

Table 1.: Project set up step-by-step

No	Item	Description
1	Plant photo 	Photographed local plants using mobile cameras
2	Google Lens 	Used Google Lens to identify plant species in real-time

3 ChatGPT



- Accessed ChatGPT to gather further information with ChatGPT prompt:
 - ✓ “What is an interesting fact about [plant name]?”
 - ✓ “How does [plant name] help the environment?”
 - ✓ “Rewrite this plant info to make it fun and social media-friendly.”

4 Padlet



- Compiled findings (including plant names, photos, locations, and fun facts) on a shared Padlet

Student Feedback

The activity was supported by reflection questions and simple rating scales using Google Form to assess engagement, understanding, and user experience. The approach encouraged autonomy, collaboration, and active learning.

RESULTS AND DISCUSSION

Padlet Board

The Padlet board became a vibrant repository of diverse plant species, fostering a sense of ownership and collaborative learning (Figure 1). Students also appreciated how the tools helped bridge classroom knowledge with real-life applications. This aligns with previous findings that mobile learning increases retention and engagement when integrated with field-based activities (Chen *et al.*, 2025).

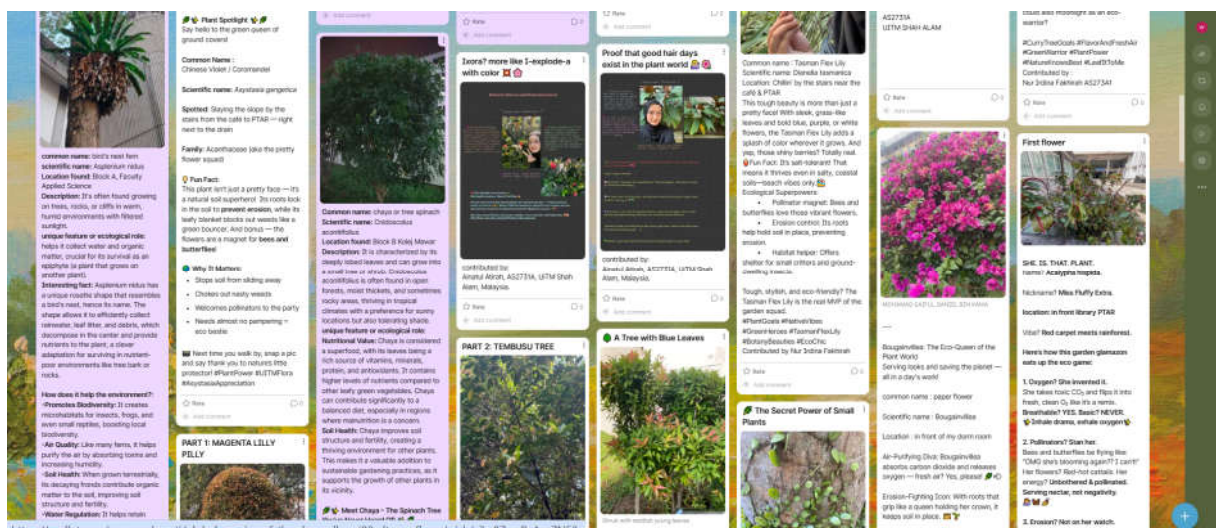


Figure 1.: Screenshot of Padlet- Global “Species of the Day” Gallery

Student Feedback: What did the student say?

Figure 2 shows student feedback on overall experience, Google Lens helpfulness, ChatGPT understanding, biodiversity understanding, and activity engagement. From the feedback, students found the activity both engaging and insightful. On average, they rated their learning and enjoyment above 4.5 out of 5. Both Google Lens and ChatGPT helped them explore local biodiversity in an exciting new way. Their engagement levels were high, especially due to the novelty and interactivity of using Google Lens and ChatGPT. The ease of identification and immediate feedback allowed for deeper curiosity and understanding of ecological relationships.

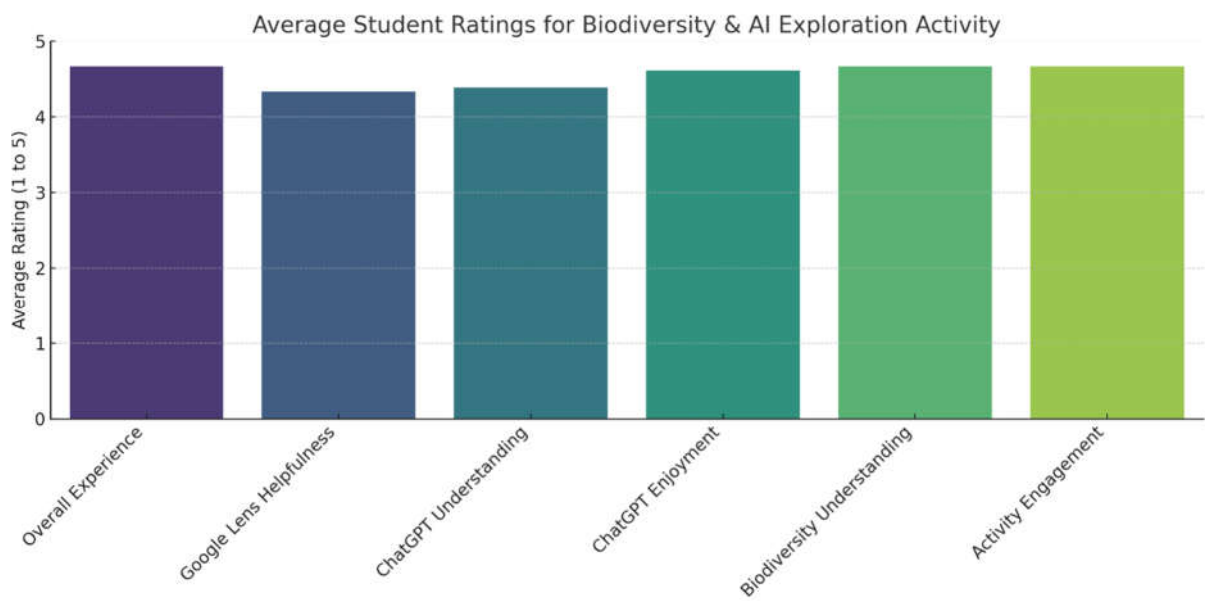


Figure 2.: Average student rating for Biodiversity and AI exploration activity

Student Feedback: What did the students enjoy most?

Table 2 shows a summary of student feedback for (1) exploration and nature, (2) AI and learning, and (3) connectivity and curiosity. The interdisciplinary nature of the task that connects biology, technology, language, and environmental studies helped develop 21st-century competencies such as digital literacy, critical thinking, and communication (OECD, 2023). The flexibility of the approach suggests strong potential for replication in science outreach, informal education, and global collaboration initiatives.

Table 2. Summary on student feedback (1) exploration and nature, (2) AI and learning, and (3) connectivity and curiosity

No	Item	Summary of student feedback
1	Exploration and nature	• I enjoyed walking around campus discovering plants I barely noticed before. • Being outside makes me feel calm and relaxed. • It was fun spotting different species and instantly learning cool facts with Google Lens.
2	AI and learning	• I loved using ChatGPT for further understanding, it made learning creative and fun. • I learned how AI can identify plants and tell their stories in a hands-on way.
3	Connectivity and curiosity	• I finally learned the names and facts about plants I see all the time. • It was fun mixing nature with tech, surprisingly social-media worthy.

CONCLUSION

This project successfully combined outdoor learning and digital tools to promote plant biodiversity education. The use of Google Lens and ChatGPT enabled students to identify and learn about plants in real-time, fostering curiosity and meaningful learning. It also encouraged interdisciplinary thinking, digital engagement, and a closer connection with nature. With its adaptable and scalable design, the project can be implemented across diverse educational contexts, including community programs, science events, and international collaborations, highlighting Malaysia's rich biodiversity while promoting STEM learning.

ACKNOWLEDGEMENTS

The project team would like to thank Universiti Teknologi MARA (UiTM) and the Faculty of Applied Sciences for their support and encouragement. Special thanks to the participating students for their enthusiasm and feedback.

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