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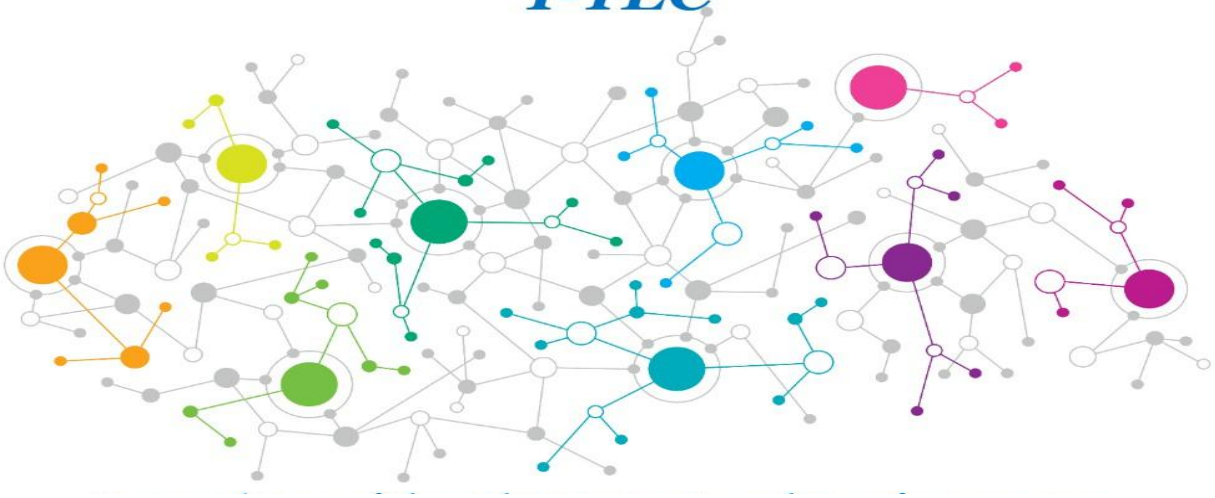

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Empowering Learners & Unlocking Their Potential

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Revolutionizing Learning through Eco-Innovative Education

Chaymae Ourarhi [1], Isam Mrah [2]

[1] Mohammed I University, Faculty of Letters & Human Sciences, Oujda, Morocco
chaymae.ourarhi24@ump.ac.ma

[2] Mohammed I University, Faculty of Letters & Human Sciences, Oujda, Morocco
isam.mrah@ump.ac.ma

Abstract

Education plays an important role in shaping perceptions and guiding knowledge; eco-literary practices are essential in expanding students' awareness beyond anthropocentric views. An interconnection of the two leads to transforming education by developing critically engaged, ecologically responsible, and socially conscious learners. This paper examines how integrating ecological texts, sustainable ICT tools, and experiential learning enhances students' analytical skills, environmental responsibility, and engagement. Studies like those of Fauzi et al. (2021) and Häggström & Schmidt (2020) have shown that by integrating ecological texts and media into curricula, students are encouraged to develop a deeper understanding of their interconnectedness with nature. The incorporation of sustainable ICT tools, experiential learning through field trips, and exposure to green education, direct or indirect, has been shown to enhance students' critical thinking, ethical awareness, and environmental responsibility (Häggström & Schmidt, 2020; Firinci, 2022; Fadjarajani & As'ari, 2021). Using these teaching techniques, eco-literacy aims to develop students' emotional, cognitive, and spiritual competencies, leading to a shift in perception from passive to active interaction with nature. A systematic review is employed, drawing on case studies and existing research on eco-literary

education. Sustainable strategies, including outdoor learning experiences and digital sustainability tools, are explored to determine their effectiveness in shaping students' ecological awareness and critical reasoning. By embedding eco-literary education into mainstream teaching practices, educators can cultivate a generation that not only understands ecological challenges but actively seeks sustainable solutions, ultimately contributing to a more harmonious relationship between humanity and nature while advancing innovative learning strategies for a greener future.

Keywords: eco-innovation, ecological humanities, eco-pedagogy, active learners

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1. Introduction

Environmental education must go from superficial knowledge that is passively given to students to an active, embodied education that raises ecologically responsible citizens. While efforts have been made to advance environmental education, literature keeps suggesting and implementing diverse sustainable strategies with varying levels of effectiveness. This paper examines the extent selected sustainable strategies — ecological texts, sustainable ICT tools, and experiential learning — enhance students' critical thinking, environmental responsibility, and engagement. To do this, this study employs a systematic review to analyse the impact of these strategies on students' interactions with nature and their ability to develop eco-literacy competencies.

1.1 Background of the Study

In education, environmental humanities have gained momentum amidst ecological crises, highlighting the urgent need to re-center nature and integrate it into educational practices. This is described as the "ecological turn" in education (Blades, 2024), which has also been emphasized by UNESCO (2005) as a core element in education. However, due to the urgency of the situation, with ecological crises and public protests, environmental learning was regarded as a mere subject that could be added on top of existing curricula, rather than being fundamental in education. This shows that environmental learning was only a superficial engagement, which led to raising the idea of traditional sustainability in education. This latter has an economised agenda and prioritizes profit-driven solutions, rather than focusing on students themselves and instilling ecological awareness and responsibility in them (Jickling & Sterling, 2017). This type of environmental learning reinforces anthropocentric attitudes in students. True sustainability

or post-sustainability in education goes beyond these economic considerations and integrates ethical responsibility, ecological literacy, and community engagement to ensure the development of ecologically literate students (Jickling & Sterling, 2017).

1.2 Problem Statement

Numerous studies have tackled environmental learning and ecological strategies implemented in the classroom. However, limited efforts have been made to review these strategies across the literature and determine the most commonly employed and effective ones for enhancing students' critical thinking, environmental responsibility, and engagement.

1.3 Purpose, Significance, and Scope of the Study

The purpose of this paper is to review the existing literature on eco-pedagogy, eco-literacy, and the sustainable strategies used in different contexts to develop students' ecological literacy. It aims to explore the extent the selected sustainable strategies — ecological texts, sustainable ICT tools, and experiential learning — enhance students' critical thinking, environmental responsibility, and engagement. It offers educators and researchers a body of knowledge to choose from the most effective teaching strategies and methods to balance eco-literacy competencies in students.

1.4 The Research Questions and Hypotheses

Research Questions:

1. Which sustainable strategy is most used and effective in instilling ecological awareness and responsibility towards the planet?
2. How do these strategies interconnect with eco-literacy competencies?

Hypotheses:

1. H1: Experiential learning is the most effective strategy because it balances and connects the four core eco-literacy competencies.

2 Literature Review and Theoretical Framework

2.1 Theoretical Foundations: Eco-pedagogy and Eco-literacy

The rise of eco-pedagogy has created a shift in the educational landscape due to its insistence on raising the students 'critical ecological awareness. Rooted in Paulo Freire's *Eco-pedagogy*

of The Oppressed, eco-pedagogy is radical in its attempt to move beyond 'banking' education, where students are considered as a storage system that receives information (1968, p 72). Its emphasis is on developing students' analytical and problem-solving skills. This is mainly to ensure the student's ability to critique ideological and profit-based systems that increase environmental destruction, such as anthropocentrism, consumerism, and having an economic agenda in educational settings. The failure of sustainable education is not only due to using environmental knowledge as an added subject on top of already existing ones; the focus on marketability instead of raising students' awareness of the planet and how to interact with it is also a factor in this failure (Häggström & Schmidt, 2022). For this reason, scholars advocate for the implementation of eco-pedagogy as an approach in schools, not only to disrupt the anthropocentric and exploitative mindset, but also because it allows a grounded experience with nature (Misiaszek, 2022, p 1267; Blades, 2024, p 301).

In essence, eco-pedagogy is characterized as an academic movement that aims to reorient superficial sustainability and transform learners into active agents in social change (Fauzi et al., 2021). To achieve this aim, eco-pedagogy is approached and implemented differently depending on the context. For instance, Blades (2024) uses an eco-pedagogy of walking by emphasizing movement within natural landscapes. Since the context is Australian never-ending landscape, this approach prioritizes adventure and direct encounter with nature through walking. Similarly, critical place-based pedagogy highlights the role of 'place' in increasing learning and eco-friendly attitudes in students. This is by linking students' interactions with specific environments, such as forests, with problem-solving assignments (Mahmoudi et al. 2012; Häggström & Schmidt, 2022). Other ecological-based learning approaches, such as community-based, project-based, and inquiry-based, have been used to offer diverse learning experiences with the natural world (Salimi et al. 2025). These implementations, although they vary, share the place-based and experiential nature in their approach towards eco-pedagogy.

Closely linked to eco-pedagogy is eco-literacy, used to enhance students' knowledge of ecological concepts (Salimi et al. 2025). Scholars describe it as the awareness of the essential natural systems and the ability to translate this awareness into action, therefore producing eco-literate citizens (Fadjarajani & As'ari, 2021; Zocher and Hougham,2020; Fauzi et al., 2021; Kazazoglu, 2025). Eco-literacy is more practical in the classroom, equipping students with skills, values, and competencies required to understand the importance of the natural world and act responsibly towards it. Roth (1992) summarizes this by listing four aspects of eco-literacy: skills, behaviour, affective, and knowledge. Along with this view, McBeth et al., (2010) adds

that the attitudes or behaviours towards nature should manifest both verbally through discussions and protests, and non-verbally through positive actions. Through these attitudes, teachers can decide whether eco-literacy has been implemented correctly or not. However, behaviour is not the only aspect to measure the success of eco literacy; rather, it is the interconnection of the other four aspects (Salimi et al. 2025).

These aspects are reflected in four main competencies that emerge due to students' continuous interactions with nature; these competencies include emotional, practical, spiritual, and cognitive capacities. The cognitive competency(head) measures the learner's understanding of ecological concepts, ability to evaluate ecological issues, and providing initial sustainable solutions to these issues. This allows students to think critically and assess problems. The spiritual aspect(connection) is manifested in the deep connection to nature, marked by the contemplation of the intricacies found in the ecological system. The emotional aspect (heart) focuses on empathy , care , and respect for all beings in the natural world. This, along with the spiritual dimension, encourages students to create a sense of appreciation, identity formation, and sense-making of their environment and their interactions with it. Finally, the practical competency(hands) requires students to turn their understanding into practical application in real life (Salimi et al., 2025; Roth ,1992). Although these competencies are interconnected, they show that eco-literacy is not a singular component composed only of knowledge; rather, it is a range of other abilities that ensure students demonstrate the holistic competence required to engage wholly with the natural world.

2.2 Ecological Strategies in Education

In accordance with eco-literacy and eco-pedagogy, eco-strategies are essential for developing students' eco-literacy competencies such as introducing ecological concepts and vocabulary (Kazazoglu, 2024; Firinci, 2022; Meighan, 2023; Putri et al., 2018; Yadnya et al., 2021). Along with texts, storytelling provides students with a deeper understanding of ecological principles as it "opens the way for affective learning, which puts emphasis on sensory experiences and emotional connections with nature" (Häggström & Schmidt, 2020, p. 1733). To practice their understanding, students are encouraged to engage in writing activities, such as descriptive essays or creating communal books with images. The writing tasks often revolve around environmental topics such as biodiversity and deforestation to help students put the vocabulary and concepts they retained into written words. Scholars insist that the goal of this productive skill is to enable students to communicate their ideas, rather than to focus on correct language

and grammar. Hence, Spencer's writing model is used in writings (Häggström & Schmidt, 2020; Kazazoglu, 2024).

Sustainable ICT tools present another eco-strategy that is supplementary to storytelling and writing activities by adding a digital dimension to them. For the writing practices, online mind-mapping is proven to be useful for helping students organize their thoughts and brainstorm ideas. It works by providing a digital canvas where students can visually organize information around a topic. On this, Kazazoglu (2024) confirms that "students preferred elaboration strategies like mind mapping, Venn diagrams, and annotating as the most instructive for ecological writing" (p. 9). As for digital storytelling, it offers a multimedia approach since it allows students to combine narratives, visuals, and audio. In a study by Putri et al. (2018), conducted in Indonesia, students and teachers created digital stories about Subak, a system used for rice farming in Bali, Indonesia, using photos, videos, and written reflections to create short digital stories. These stories must reflect the local ecological issues and the students' personal experiences with nature (Putri et al., 2018). This allows space for creativity and autonomy in the learning process. In fact, using online platforms such as Facebook and Instagram increases the learner's intrinsic and extrinsic motivation and is suitable for inclusive classroom settings (Kazazoglu, 2024; Putri et al., 2018).

Since the goal is to raise eco-friendly attitudes in students, it is important that they engage in activities and communicate their ideas while being immersed in nature. Through outdoor activities, including field trips and nature journaling, students can have a direct connection to nature while activating their critical thinking and creative abilities. The places chosen for these activities are not taken for granted but are negotiated as places of play, exploration, observation, and learning. In a case study located in southeastern Australia, whose entire premise revolves around bushwalking and nature journaling through a three to seven day walk ,rest, sleep , and food included, students are expected to observe, interpret, and understand the nature of walking through these felt/lived experiences (Blades, 2024; Setiawati et al., 2020; Yahya & Prakash, 2020). Practical activities are essential to reinforce eco-literacy and for students to apply them to their everyday routine. This is done through the 3R activities, which stand for Reduce, Reuse, and Recycle. Yeap and Rao (2012) applied the 3R, where students were encouraged to bring their own reusable shopping bags instead of using plastic ones and to reuse items by giving them a second life instead of throwing them away. In the same activity, students were taught to reuse paper by writing or printing on both sides or turning scrap paper into a notebook. Action research is another strategy used to reinforce ecological understanding. Students were

encouraged to select their own topics based on their outdoor observations and work together to find an issue and find solutions for it (Zocher & Hougham, 2020).

3 Method

3.1 . Sample/Participants

This paper utilizes a systematic literature review method. Instead of human subjects, the sample is composed of peer-reviewed articles published between 2012 and 2025. The articles focus on sustainable and eco-literacy focused strategies used in educational settings. The selection targeted articles with keywords such as 'sustainable education', 'eco-literacy', 'eco-pedagogy', and 'environmental education'. Out of the numerous relevant articles mentioned in this paper, six were reviewed and analysed. Inclusion of articles depended on specific criteria for selection:

Table 1

Selection criteria for relevant articles

Criteria
1. Research articles that used case studies using sustainable and ecological strategies for teaching
2. Research articles that focus on the concept of eco-literacy and eco-pedagogy
3. Research articles published between 2012 and 2025
4. Research articles written in English

3.2. Instruments

In the context of a systematic literature review, the instruments used are tools that helped in the organization and evaluation of the selected articles. For evaluation, JBI Checklists were used to assess the quality and relevance of the studies using a checklist. To organize citations, this paper utilized Zotero to manage references and avoid overload and redundant citations.

3.2 . Data Collection and Analysis

This paper follows the procedure of systematic review, which is split into three phases: planning, conducting, and reporting (Salimi et al., 2025; Zhu et al., 2018). The process starts by planning where the inclusion and exclusion criteria are set based on the research questions and hypotheses. The second phase, conducting, involves taking into consideration the specific keywords, the journal's value, the number of citations, and revision of the abstract and the titles. This is a review that takes place before reading the full article to decide whether it should be

included or not. The final reporting phase revolves around writing down the previous stages followed. In other words, having a written format of the search process, such as the keywords, the criteria for selecting journals, and the date range of the chosen articles.

For analysis, the extracted information is synthesized and evaluated to answer the research questions. Data is thematically categorized based on the sustainable strategies used, the approach of application, methods, and the context in which the strategy is employed. Each category is summarized and analysed to identify patterns and conclusions that would aid in answering the research questions. Both the synthesis and evaluation phases compile the repeated patterns, the strategies employed, and variations. This is mainly to offer a picture of how eco-literacy is taught in different educational contexts and the reused sustainable strategies in these settings.

4 Results

This part of the paper presents the main results of the six case studies that were focused on. The case studies differ in terms of context and the sustainable strategies used in educational settings. The results are organized in tables and charts for a clearer vision and to illustrate the extent sustainable strategies are able to enhance students' critical thinking and eco-friendly attitudes toward nature.

Table 2

Overview of Main Case Studies and Their Main Findings

Case study	Location	Strategy	Main Findings
Heritage Language pedagogy (Jayantini et al., 2022)	Indonesia	Ecological texts Storytelling	Increased knowledge of ecological concepts ,identity formation , and vocabulary Initial complexity in understanding abstract ecological concepts
Ecoliteracy (Yadnya et al., 2021)	Indonesia	Ecological texts Focused Writing Storytelling	Enhanced retention of ecological lexicons and themes Difficulty with new and advanced language
Bushwalking (Blades, 2024)	Australia	Outdoor activities Focused Writing Practical Activities	Challenged individualistic and anthropocentric views Nurtured emotional connection to nature
Nature Journaling (Yahya & Prakash, 2020)	Not specified (Native contexts)	Outdoor Activities Storytelling Focused Writing 3R Activities	Developed critical thinking and creativity Nurtured spiritual and emotional connection to the land Increased sense of belonging

Place-Based Literacy (Häggström & Schmidt, 2020)	Sweden	Outdoor Activities Action Research Storytelling	Increased sense of belonging and identity Increased understanding of ecological themes and concepts
Ecological Intelligence (Fauzi et al.,2021)	Indonesia	Outdoor Activities Action Research Storytelling 3R activities Ecological texts	Enhanced students' motivation and passion towards nature Increased understanding of ecological concepts, themes, and lexicons Nurtured spiritual and emotional connection to the land

Table 2 provides a summary of the case studies focused on in this paper, along with their key findings. The implementation of sustainable strategies differs depending on the context. For example, Indonesian culture, rich with folklore and ancient ecologically themed stories, focuses on the use of storytelling as an ecological strategy of teaching. The findings were not tied to a specific strategy; they emerged as a result of the entire case study. Only two studies mentioned the challenges of implementing the strategies, while other studies did not mention the limitations or acknowledged them briefly. Although the time range was rarely specified in the studies, the results show that integrating eco-literacy through ecologically educational strategies improved learners' understanding of ecological concepts, vocabulary, and themes. They also developed strong critical thinking and creativity. On the emotional side, students' motivation and spiritual connection to nature were triggered by outdoor activities and storytelling.

Figure 1

The Impact of Sustainable Strategies on Students' Interactions with Nature

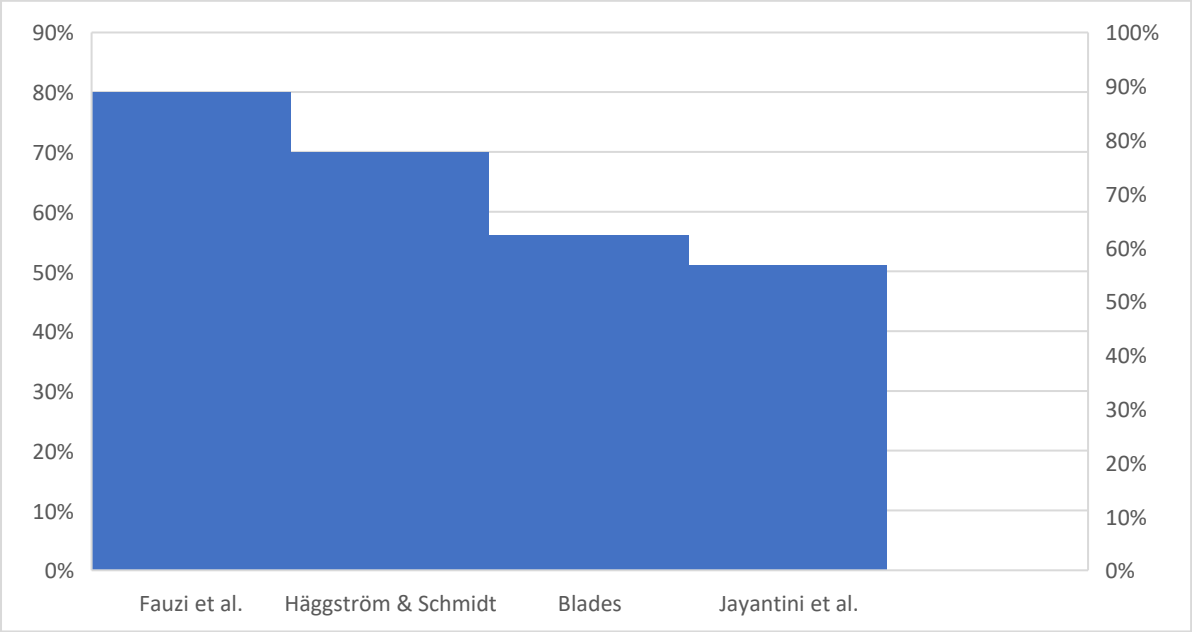

Figure 1 shows students' behavioural, emotional, and cognitive change towards nature after being exposed to Eco literacy and the educational strategies implemented while teaching. It should be noted that the impact or change mentioned in Figure 1 is a positive one, reflecting a shift in how the learners detach from anthropocentric views of nature and how they relate to it cognitively and spiritually. The results are drawn from specific case studies (Blades, 2024; Fauzi et al., 2021; Häggström & Schmidt, 2020; Jayantini et al., 2022) and are estimated based on qualitative descriptors from Table 2. The highest improvements, ranging from 65% to 80%, resulted from case studies that implemented outdoor-based strategies, storytelling, and practical 3R Activities. In contrast, the lowest rate, at 60%, was observed in eco-literacy teachings that relied only on ecological texts and focused writings.

5. Discussion

Generally, the results suggest that the sustainable ecological strategies for teaching eco-literacy have a positive impact on students and their interactions with nature. Fauzi et al. (2021) and Häggström & Schmidt (2020) documented the impact of experiential learning on the emotional, practical, and cognitive competencies in students. Taking advantage of the Indonesian and Swedish contexts to implement place-based literacy proved effective in developing students' ecological identity and sense of belonging. This is because physical and embodied interactions with local places remind students that they are part of nature, and their disregard for these places

might destroy a big part of them. With this idea in mind, students showed, as Table 2 suggests, internal motivation to increase their eco-friendly attitudes and find solutions to ecological issues through action research. The findings showcase that outdoor activities can do more than trigger emotional and spiritual connection, but also activate the learners' critical thinking and problem-solving skills.

Similarly, Blades' (2024) bushwalking case study further supports the importance of physical embodied encounters with nature. He adds writing activities to reinforce understanding and critical thinking, allowing the internalization of the embodied experiences with the environment. The bushwalking experience is a walk of 3- to 7-day walk, rest and sleep included. The route taken is not linear but loops through various areas, guided primarily by the natural lines such as watercourses as 'waypoints. This premise of walking in nature and deciding on the correct waypoint for guidance raises students' agency and ability to make responsible decisions. The use of local Australian vegetation and the country's historical context, aligning them with the goals of eco-literacy and in choosing strategies of teaching, proved to challenge the anthropocentric mindset students might have towards nature.

Compared to the previous studies, Jayantini's et al. (2022) case study, based in Indonesia, has a lower impact on students' relationship with nature. Regardless of the use of ecological texts along with ICT tools to increase vocabulary retention and ecological knowledge, students had difficulties with new vocabulary and abstract concepts. This disproves the literature's claim that the use of ecological texts is suitable for introducing ecological lexicons and concepts. However, it should be noted that difficulties were only at the start of the semester; therefore, they improved with time. The limitation of this study is the absence of outdoor activities that have been proven to be effective based on other studies. Although storytelling provides an emotional and spiritual connection to place, without a lived experience with nature, students lack the practical and physical experience to apply these competencies in real contexts and bond with nature. The findings show that although cognitive ecological strategies improved knowledge retention, they need to be complemented by emotional and experiential approaches.

Overall, the integration of experiential learning, sustainable ICT tools, and ecological texts proved to be powerful in enhancing students' critical thinking, ecological awareness, and sense of responsibility towards the planet. The studies reviewed indicate that combining these strategies targets all the competencies of eco-literacy, such as practical, cognitive, spiritual, and emotional, bringing a deeper and stronger connection with nature. While focused writings, ecological texts, and even action research stimulate cognitive competency, storytelling, along

with place-based learning, deepens understanding, leading to a lasting spiritual and emotional connection with the natural world. The outdoor activities connect all competencies since it can be implemented with other strategies easily. It can be intertwined with ecological texts and writing activities, as students can read while out in the forest or observing nature while reading, which heightens the overall experience. Students can also do writing activities through nature journaling or action research while being immersed in nature. Without a diverse approach of sustainable strategies, as is the case with Jayantini's et al. (2022) study, students may lack the holistic competency required for a long-lasting ecological responsibility. Therefore, educators must design or choose strategies that are ecologically relevant, activities that require physical engagement with nature, and ones that trigger emotional and spiritual attachments.

6. Implications, Recommendations and Conclusions

The findings confirm that the implementation of ecological texts, sustainable ICT tools, and experiential learning encourages students to activate their creativity, critical thinking skills, and reflect on ecological issues. Although the extent of the impact of these strategies cannot be measured numerically due to the lack of quantitative data in the case studies analysed. Regardless of this limitation, a shift has been observed as students attempted to find solutions to environmental problems through action research and practical activities. For students to be able to move beyond the anthropocentric mindset and consider the planet in their decision-making is a statement that eco-literacy was correctly implemented. This is because these improvements only occur when the four eco-literacy competencies have been triggered and activated, hence representing a step towards environmentally literate and responsible citizens.

In response to the first research question, experiential learning, along with storytelling, is consistently used as an effective sustainable strategy to implement eco-literacy. Bush walking (Blades, 2020), storytelling (Fauzi et al., 2021), and place-based learning (Häggström & Schmidt, 2020) are strategies that were able to connect the four competencies and foster students' critical thinking, identity formation, and encourage ecological responsibility. This also confirms the research hypothesis that experiential learning engages students spiritually, emotionally, and practically. For the second research question, ecological tests and focused writing are considered mainly cognitive strategies because they target ecological awareness and linguistic development. Storytelling enhances spiritual and emotional engagement, while outdoor activities stimulate the four competencies at once.

References

Ben-Eliyahu, A. (2021). *Sustainable Learning in Education*. Sustainability Press.

Blades, G. (2024). Nature, Bodies, and Practices: Walking, Adventure, and Ecopedagogy. *Motricidades: Rev*, *8* (3), 296-312.

Fadjarajani, S., & As'ari, R. (2021). Ecopedagogy Based Learning as an Effort to Increase Student Ecoliteration and The Development of Environmental Care Characters. *IOP Conference Series: Earth and Environmental Science*, *683*(1), 012046.

Fauzi, A., Fitriasari, S., & Muthaqin, D. I. (2021). Development of Student Ecological Intelligence Through the Implementation of Ecopedagogy. *Annual Civic Education Conference* (ACEC 2021).

Firinci Orman, T. (2022). Youth's Everyday Environmental Citizenship: An Analytical Framework for Studying Interpretive Agency. *Childhood*, *29*(4), 495–511.

Freire, P. (1968). *Pedagogy of the Oppressed*. Penguin Education.

Häggström, M., & Schmidt, C. (2020). Enhancing Children's Literacy and Ecological Literacy through Critical Place-Based Pedagogy. *Environmental Education Research*, *26*(12), 1729-1745.

Jayantini, I. G. A. S. R., Hikmaharyanti, P. D. A., Permana, I. P. A., Raka, G. A. M. S., & Pithaloka, N. K. C. (2022). Eco-cultural Approach through Local Wisdom Identification in Designing Teaching Materials for English Department Students. *In International Conference on Language*, (pp. 35-41). Culture and Communication.

Jickling, B., & Sterling, S. (2017). Post-Sustainability and Environmental Education: Remaking Education for the Future. *Springer International Publishing: Cham*.

Kazazoglu, S. (2025). Environmental Education through Eco-Literacy: Integrating Sustainability into English Language Teaching. *Sustainability*, 2156.

Mahmoudi, S., Jafari, E., Nasrabadi, H. A., & Liaghatdar, M. J. (2012). Holistic Education: An Approach for 21 Century. *International Education Studies*, *5*(3), 178–186.

McBeth, W., & Volk, TL. (2010). The National Environmental Literacy Project: A Baseline Study of Middle Grade Students in the United States. *J Environ Educ*, *41*(1), 55–67.

Meighan, P. J. (2023). Transepistemic English language Teaching for Sustainable Futures. *ELT Journal.*

misiaszek, G.W. (2022). Ecopedagogy: Freirean Teaching to Disrupt Socio-Environmental Injustices, Anthropocentric Dominance, and Unsustainability of the Anthropocene. *Educational Philosophy and Theory*, *55*(11), 1253-1267.

Pratiwi, P. I., Ramadhani, D., & Mayuni, I. (2024). Implementations of Eco-Literacy in English Language Teaching for Smart Society Era: A Critical Review. *Journal Onoma: Pendidikan*, *10*(2), 1493-1505.

Putri, E.I.G.A. (2018). Critical Environmental Education in Tertiary English Language Teaching (ELT): A Collaborative Digital Storytelling Project. *Indones*. *8*, 336–344.

Reisinger, D., Liu, Y., Valnes Quammen, S., & Virguez, E. (2021). Sustainability Across The Curriculum: A Multilingual and Intercultural Approach. *In Education for Sustainable Development in Foreign Language Learning* (pp.197-214). Routledge.

Roth, CE. (1992). Environmental Literacy: Its Roots, Evolution, and Direction in the 1990s. *ERIC Clearinghouse for Science*. https://files.eric.ed.gov/fulltext/ED348235.pdf

Salimi, M., Karsono, K., Hidayah, R., Surya, A., & Fauziah, M. (2025). Concepts, Aspects, and Methods for Developing Ecoliteracy: A Systematic Literature review. *Multidisciplinar*, *3*, 214. https://doi.org/10.62486/agmu2025214

Sauvé, L. (1996). Environmental Education and Sustainable Development: A Further Appraisal. *Environ*, 7–34.

Sauve, L., R. Brunelle, & T. Berryman. (2005). Influence of the Globalised and Globalising Sustainable Development Framework on National Policies Related to Environmental Education. *Policy Futures in Education, 3* (3), 271–283.

Setiawati, E., Nurtiani, A. T., Mamma, A. T., Ruiyat, S. A., Fajarwati, A., Rahmani, A., ... & Maryanti, T. (2020). Develop Green Behaviour through Ecoliteracy for Early Children. *Systematic Reviews in Pharmacy*, *11*(11), 1551.

Suwandi, S., Drajati, N. A., Handayani, A., & Tyarakanita, A. (2024). The Analysis of Ecoliteracy Elements in Language Textbooks. *Cogent Education*, *11*(1).

UNESCO. (2005). Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability. *Education for Sustainable Development in Action*.

Wals, A. (2015). Beyond Unreasonable Doubt. Education and Learning for Socio-Ecological Sustainability in the Anthropocene. *Wageningen University Press*.

Yadnya, I. B. P., Simpen, I. W., & Satyawati, M. S. (2021). English Reading Texts Model Using the Ecoliteracy Lexicons Approach. *International Journal of Linguistics*, *4*(4), 145-154.

Yahya, L., & Prakash, A. (2020). Unlocking Creative Writing Through In4D-Indigenous CIY Nature Journaling: The Indigenous Voice. *Journal of English as a Foreign Language Education*, *1*(1), 12-24.

Yeap, K. S., & Rao, S. P. (2012). An Experimental School Prototype : Integrating 3rs (reduce, reuse & recycle) Concept into Architectural Design. *Jurnal Design and Built Environment*, 1–9.

Zhu M, Sari A., & Lee, MM. (2018). A Systematic Review of Research Methods and Topics of The Empirical MOOC Literature (2014–2016). *Internet High Educ*, *16*(17), 1–32. https://doi.org/10.1016/j.iheduc.2018.01.002

Zocher, J. L., & Hougham, R. J. (2020). Implementing Ecopedagogy as an Experiential Approach to Decolonizing Science Education. *Journal of Experiential Education*, *00*(0), 1-16.