Integration of Environmental Education into English Language Teaching: Development, Dissemination, and Assessment of Eco-ELT Materials

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ABSTRACT

Philippine policy, through Republic Act No. 9512 and DepEd Order No. 52, s. 2011, requires the integration of environmental education into basic education curriculum but the implementation in English Language Teaching (ELT) is unclear. This study investigated the integration of environmental education in the Senior High School Reading and Writing materials of District 1 of Taguig City. The study focused on common themes and approaches, policy alignment, strengths and weaknesses of the materials and dissemination of information on its implementation to English teachers. The qualitative descriptive design was anchored on the UNESCO Education for Sustainable Development framework, the NAAEE Materials: Guidelines for Excellence, and the DepEd Evaluation Rating Sheet. Two instruments were constructed by the researchers, a semi-structured interview guide and the Evaluation Checklist Sheet for Eco-ELT Instructional Materials, which were adapted from the six NAAEE quality factors and the DepEd Evaluation Rating Sheet for Print Resources, with a seventh factor, Philippine Policy Alignment, added to align with RA 9512 and DepEd Order No. 52. Interviews with five English department heads were analyzed using Braun and Clarke's six-phase thematic analysis, while Reading and Writing materials from two of five participating schools were evaluated by a curriculum development expert using the checklist. Environmental content functioned mainly as context for language practice rather than as a subject of inquiry, and deeper integration depended on individual teacher initiative. All seven checklist factors were rated Significantly Weak in both schools, although the materials showed sound pedagogical structure. A multi-layered dissemination channel existed but was generic: English was consistently omitted as designated recipient subject, and policy orientation ranged from annual cycles to none. The problem is not in instructional design. It is in lack of purposeful environmental framing. The study recommends Eco-ELT materials with local, action-oriented content, an English-specific dissemination channel, and targeted teacher training.

Keywords: Eco-ELT; Environmental Education (EE); English Language Teaching (ELT); Environmental Literacy; Senior High School Reading and Writing

INTRODUCTION

Climate change, loss of biodiversity, scarcity of resources and pollution have led to calls for education systems to develop environmental awareness and responsibility in learners. The Sustainable Development Goal 13 and more specifically Target 13.3 calls for better education on climate change mitigation and adaptation (United Nations, 2015) which is consistent with the AmBisyon Natin 2040 vision of lives lived in harmony with nature. In this agenda, English Language Teaching (ELT) is a promising entry point in the Philippine K-12 curriculum. ELT is a core subject and has a large instructional time. ELT can also promote linguistic skills and environmental literacy at the same time through Ecological – English Language Teaching (Eco-ELT) integrating the environmental issues with the content-based and task-based strategies (Saiful, 2023).

But there are still some gaps despite the potential. ELT materials are designed to impart knowledge, not to stimulate emotions or behavioral change (Lee & Nguyen, 2024); integration tends to be peripheral and optional rather than central (Khan, 2021); and assessment is focused on knowledge recall, ignoring environmental values, systems thinking, and the ability to act (Soliman & Marasigan, 2021). Institutional constraints add to the complexity of the problem: teachers are subjected to the pressures of standardized testing and limited professional development (Tero & Lastierre, 2025); divergent interpretations are caused by unequal access to training and vague interpretation of policies and dilution of information as it trickles down through levels of management (Aguilar & Islam, 2023; Mirasol et al., 2021); weak monitoring results in "paper compliance" where documents are submitted, but there is no change in classroom practice (Ignacio et al., 2022).

The Philippines has a strong legal basis for environmental education. Republic Act No. 9512 or Environmental Awareness and Education Act of 2008 provides for the integration of environmental education in schools, and DepEd Order No. 52, s. of 2011, this is operationalized through guidelines on strengthening the environmental content, student participation, Youth for Environment in Schools Organization (YES-O), and review of the curriculum. Another of Department of Education's (DepEd) core values is *makakalikasan*, or environmentalism. However, environmental education is said to be optional rather than compulsory in Senior High School English (Khan, 2021) and self-learning modules were found to have only around 15% environmental content in lower grades and 3% in higher grades, without coherence or support for higher order skills (Soliman & Marasigan, 2021).

Three gaps in the research are: First, environmental issues in ELT materials are vaguely considered with a strong emphasis on knowledge and minimal affective engagement (Lee & Nguyen, 2024). Second, little is known about the mechanisms through which environmental education guidelines are transmitted through bureaucratic levels toward teachers (Mirasol et al., 2021). Thirdly, assessment still relies heavily on recall-based testing and few validated instruments measure language proficiency and environmental awareness jointly (Gatan et al., 2021; Laaloua & Tamer, 2022). The effectiveness of the programs implemented can't be determined without a credible evaluation (Malaluan et al., 2022). This study is about the Reading and Writing subject in Senior High School because the emphasis on claims, evidence-based evaluative statements, and texts, such as critiques, position papers, and research reports, provides systematic opportunities for environmental discourse (Kazazoglu, 2025; Silvhiany et al., 2023).

Statement of the Problem

This study examined the integration of environmental education into Philippine English Language Teaching in terms of the development, dissemination, and assessment of Eco-ELT materials, with reference to RA 9512 and DepEd Order No. 52, s. 2011. Specifically, it sought to answer the following questions:

1. What are the common themes and approaches to environmental education in existing ELT materials used in the Philippines?
2. To what extent do current ELT materials align with the objectives of RA 9512 and DepEd Order No. 52, s. 2011 on environmental education integration?
3. What are the strengths and weaknesses of existing ELT materials available at the senior high school level?
4. How is information on the implementation of environmental education disseminated to English teachers under current DepEd policies and guidelines, memoranda, and/or orders?

Theoretical Framework

The study applies three complimentary lenses. The overall justification is given by the UNESCO (2019) Education for Sustainable Development (ESD) framework where environmental education needs to be repositioned pedagogically toward critical thinking, systems analysis and transformative action, aligned with SDG 4.7 and 13.3. The North American Association for Environmental Education (NAAEE, 2021) Materials: Guidelines for Excellence provides six quality factors to consider when evaluating materials: Accurate and Inclusive; Emphasis on Skills Building; Depth of Understanding; Personal and Civic Responsibility; Instructional Effectiveness; and Usability. DepEd's Evaluation Rating Sheet for Print Resources and the policy

mandates of RA 9512 and DepEd Order No. 52, s. 2011 (Department of Education, 2011; Republic Act No. 9512, 2008) provides the local policy context. Together they produced an integrated Eco-ELT Materials Evaluation Framework with a seventh factor, Philippine Policy Alignment.

METHODOLOGY

Research Design

The study used a qualitative descriptive design because the questions required in-depth analysis and interpretation of processes and reasons rather than numerical measurement (Tenny et al., 2022). The design aims to provide a comprehensive description of a phenomenon from the perspective of the people and circumstances involved, without manipulating variables (Villamin et al., 2024). Two data strands were collected in parallel: interviews with English department heads and an expert evaluation of Reading and Writing materials. Figure 1 summarizes the research process.

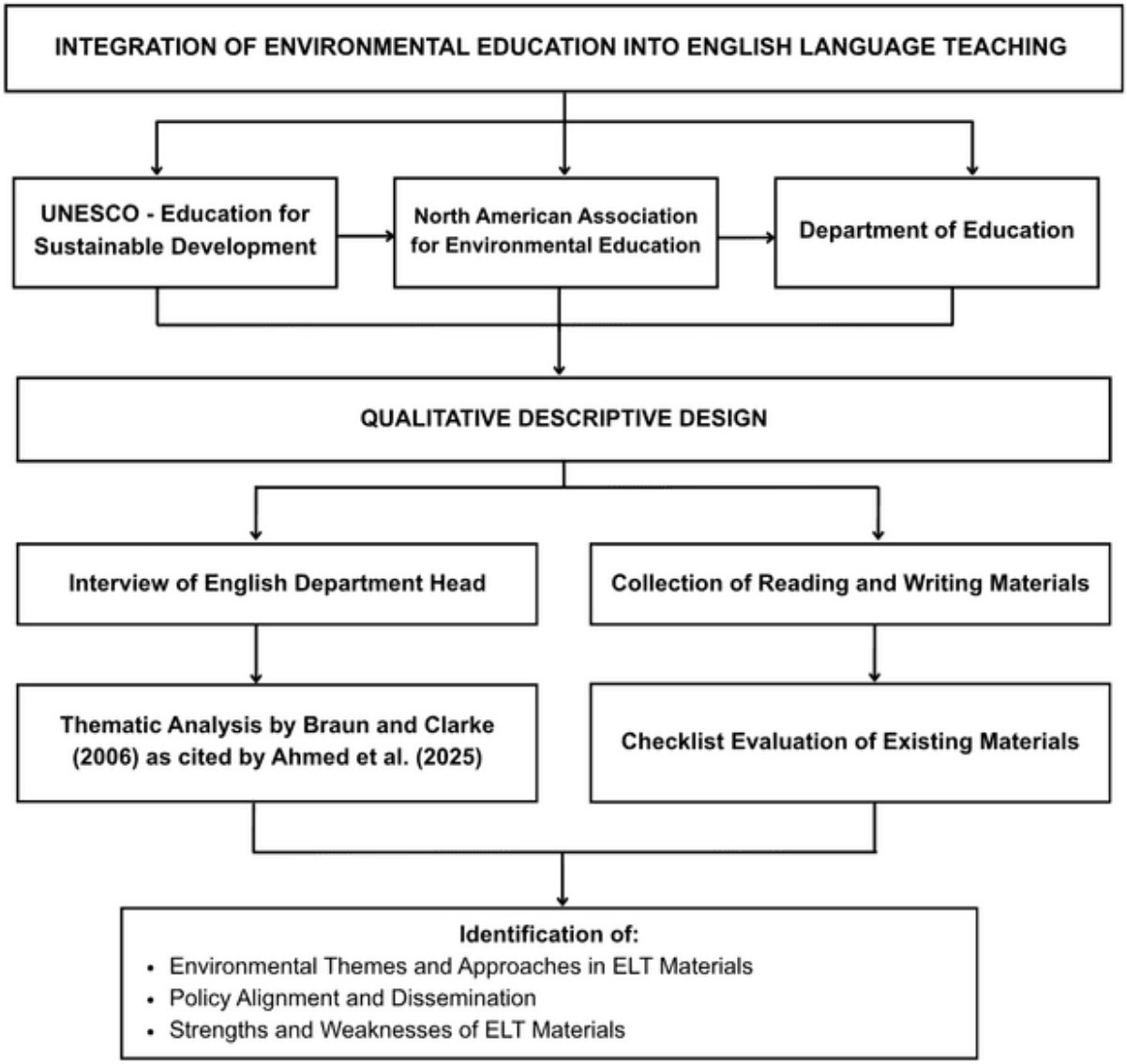


Figure 1. Research process flow: qualitative descriptive framework

Data Sources

The study was conducted in the Senior High School departments of five public schools in District 1 of Taguig City. One English department head from each school was interviewed, giving five respondents (coded

NBP_001, SA_002, JSC_003, JIS_004, and JCA_005). Reading and Writing materials were requested from all five schools, but only School B and School C provided them; the other three cited institutional confidentiality or the unavailability of designated personnel. The materials findings therefore rest on these two schools only.

Instruments

The researchers adapted the NAAEE guidelines and the DepEd Evaluation Rating Sheet for Print Resources into the Evaluation Checklist Sheet for Eco-ELT Instructional Materials. It covers the six NAAEE factors plus Factor 7, Philippine Policy Alignment, which gauges alignment with RA 9512 and DepEd Order No. 52, s. 2011. A curriculum development expert applied the checklist to the Reading and Writing materials and recorded remarks for each indicator. For the interviews, the researchers constructed a semi-structured guide of seven main questions with follow-up probes. Questions 1 to 5 addressed how environmental education information, policies, monitoring procedures, challenges, and support reach English teachers, and Questions 6 and 7 addressed the frequency of environmental topics in materials and teachers' integration strategies.

Data Analysis

Interview transcripts were analyzed with the six-phase reflexive thematic analysis of Braun and Clarke (2006, as cited in Ahmed et al., 2025): familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report. The researchers remained reflexive about their positioning throughout, treating themes as actively constructed rather than passively discovered. Checklist remarks were read descriptively by factor and school and interpreted against the NAAEE criteria and related literature.

RESULTS AND DISCUSSION

Results are organized by research question. Table 1 summarizes the checklist evaluation, and Table 2 summarizes the interview themes. Because themes were generated from five respondents, single-respondent patterns are identified as such and are not treated as representative.

Research Question 1: Common Themes and Approaches

Four themes described how environmental content appears in materials. First, environment was treated as context rather than core content: one respondent described treatment as "Reading passages, vocabulary exercises" (SA_002), and another said concepts are only briefly touched on (JCA_005). This mirrors findings that ELT materials favor knowledge delivery over affective and behavioral dimensions (Lee & Nguyen, 2024) and that Philippine modules carry a marginal share of environmental content (Soliman & Marasigan, 2021). Second, coverage was not uniform, with some materials missing any mention of related content, and with inclusion based on topic fit (JSC_003; JCA_005), consistent with Liu et al., (2024). Third, engagement was attributed to teacher motivation and lived local experience rather than material design; one respondent cited a recent local fire as making a lesson "*very engaging because it concerns everyone*" (JIS_004), consistent with evidence that community-anchored content drives engagement (Husin et al., 2025). Fourth, one respondent (JIS_004) described near-constant, richly documented integration, which is better read as one teacher's practice than as a norm (Kazazoglu, 2025).

Teachers' pedagogical approaches varied. Three respondents described deliberate multi-skill integration through task-based and communicative strategies, with reading as the main entry point and companion writing and speaking tasks (NBP_001; JSC_003; JIS_004). In addition to these, two of them referred to civic-action and critical-thinking tasks, such as writing to the local government unit about waste issues that have not yet been solved, similar to the praxis orientation of ecopedagogy (Verma & Ara, 2025). Two other respondents were limited to discussing oral communication for integration, reasoning that this would fall under logistical constraints (SA_002; JCA_005), and which is consistent with the role of logistical constraints on experiential strategies, as described by Suwaed (2022).

Research Question 2: Alignment with RA 9512 and DepEd Order No. 52, s. 2011

Factor 7 was rated Significantly Weak for both School B and C (Table 1). The evaluator found no ecological themes, no consistency with environmental issues, and no evidence that the environmental education mandate of DepEd Order No. 52 had been implemented in either set of materials. The consistent finding in both school contexts indicates a structural phenomenon and not an isolated one like Khan (2021) reported, environmentalism continues to be optional in Senior High School English and the lack of even implementation of DepEd policies was found by Ignacio et al. (2022) and environmental literacy requires stronger legislative support to be firmly established in general (Garcia & Bello, 2022). The weak alignment was accompanied by a generally satisfactory academic quality, suggesting that adherence to the content of the environment and to the policy requirements depends not on the quality of the content generally but on deliberate efforts to incorporate it.

Research Question 3: Strengths and Weaknesses of Existing Materials

Across Factors 1 to 6, both sets of materials were marked Significantly Weak, but the remarks identified a consistent pattern of strengths. The materials had sound pedagogical structure, familiar lesson log formats, learner-centered strategies, and competent development of academic and textual analysis skills. Environmental substance was not matched to these strengths. The materials did not have local, indigenous and socio-economic viewpoints as noted by other researches that students' perspectives that the EFL coursebooks would not have these indicators (Gavilan Tatin et al, 2025). They omitted EE decision making of activities. This is analogous to EE behavioral dimension being ignored in EE literature (Lee & Nguyen, 2024, Soliman & Marasigan, 2021). Similarly, the findings connected to the Sustainable Development Goals (SDGs) did not occur very often in the textbooks with just 0–9% (Rudenko, 2023) and in the Brazilian EFL textbooks (Cristovao et al., 2022) with the ratio between 21–25%. Reflective tasks were differentiated from stewardship, as identified in the research to be related to a difference in attitudes and behaviors about responsibility for the environment (Brown, 2024). Finally, there are items that are useful, but "*eco-empty*" and indicate the need in environmental education materials (Bercasio, 2022; Mondal & Khalid, 2025). It appears that this deficiency is not about lack of instructional design, but lack of intent to integrate environmental education.

Table 1. Checklist evaluation of Reading and Writing materials by factor and school

Factor	School B	School C	Strengths noted	Principal gaps noted
1. Accurate and Inclusive	Significantly Weak	Significantly Weak	Competent treatment of claims, rhetoric, and note-taking	No diverse cultural, indigenous, or socioeconomic perspectives; content not tied to environmental practice
2. Emphasis on Skills Building	Significantly Weak	Significantly Weak	Text-analysis and general thinking tasks	No environmental problem-solving, question formulation, or community-based tasks
3. Depth of Understanding	Significantly Weak	Significantly Weak	Depth in textual and academic concepts; some awareness-raising	Sustainability, biodiversity, and ecological balance underdeveloped; limited multi-scale treatment
4. Personal and Civic Responsibility	Significantly Weak	Significantly Weak	Peer feedback and reflective activities	No environmental values, examples of action, or civic participation
5. Instructional Effectiveness	Significantly Weak	Significantly Weak	Learner-centered strategies and varied modalities	No tasks tied to environmental content; objectives and assessment focused on knowledge
6. Usability	Significantly Weak	Significantly Weak	Familiar Detailed/Daily Lesson Log format; clear organization	No eco-context or resources; no demonstrated alignment with DepEd, NAAEE, or UNESCO
7. Philippine Policy Alignment	Significantly Weak	Significantly Weak	None noted	No ecological themes; no evidence of RA 9512 or DepEd Order No. 52 integration

Research Question 4: Dissemination of Implementation Information

Interviews revealed a functioning but untailored dissemination system. Memoranda cascaded from the Division Office to principals, department heads, and teachers through printed copies, group chats, and social media, a hierarchy described consistently across all five respondents. However, English was repeatedly absent as a designated recipient: respondents named Science, Araling Panlipunan (AP), and Technology and Livelihood Education (TLE) as the focus areas, and one could recall no subject-specific channel reaching English teachers (JCA_005). This is consistent with the loss of specificity as information passes through management levels (Mirasol et al., 2021) and with the treatment of environmentalism as optional outside science-based areas (Khan, 2021).

Orientation on RA 9512 and DepEd Order No. 52 was unevenly institutionalized. One school held annual orientations that included newly hired teachers (JSC_003), another described orientation as something received in previous years (NBP_001), another convened meetings only when a matter was urgent (JIS_004), and one respondent reported that no orientation had taken place (JCA_005). There was formal monitoring through focal persons, action plans and reports to the division office but English was embedded and was not designated within it. Schools' translation of policy into practice via Learning Action Cell (LAC) sessions, YES-O, and writing-based English tasks pushed policy beyond paper compliance, affirming the significance of institutional mechanisms (Busa & Tancontian, 2025) and continuous rather than additive integration (Papi & Haque, 2023).

Respondents named resource scarcity, workload and understaffing, and dissemination failure as challenges (Damoah et al., 2024; Mondal & Khalid, 2025). Reports of "*no major challenge*" appeared to reflect incidental integration rather than successful integration, since content was used only when it fit the assigned topic. Respondents saw targeted professional development and clearer communication channels as the main needs, and several placed responsibility for change with higher offices, positioning teachers as recipients rather than agents. Some of the self-assessed readiness was beyond the depth of practice described consistent with evidence that awareness does not always translate to pedagogical capacity (Galorio & Naling, 2024; Hameed, 2023). One respondent was doing environmental integration without formal knowledge of the policy. This shows that teacher attitude can lead to practice in the absence of institutional clarity (Duran & Mariñas, 2024).

Table 2. Summary of interview themes by research question

Research question (interview item)	**Themes identified**	**Key interpretation**
RQ1: Frequency of topics (Item 6)	Environment as context, not core content	Environmental content is incidental and teacher-dependent
	Inconsistent coverage across materials	
	Engagement driven by teacher and lived experience, not materials	
	High-frequency embedded integration (single respondent pattern)	
RQ1: Integration strategies (Item 7)	Deliberate, multi-skill pedagogical integration	Deeper integration stems from individual initiative; others limited by logistics
	Civic-action and critical-thinking oriented task	
	Constrained or single-skill-dominant practice	
RQ4: Receiving information (Item 1)	Operational but generic dissemination infrastructure	Channel works but is not tailored to English
	English-subject invisibility within dissemination content	
RQ4: Policies communicated (Item 2)	Variable institutionalization of orientation cycles	Orientation ranges from annual cycles to none
	Explicit non-transmission of policy	
	Policy translated into action-oriented practice	

RQ4: Procedures and monitoring (Item 3)	Formal monitoring and reporting infrastructure	Monitoring is operational but English is not designated
	English-specific procedural marginality	
	Personal/values-driven compliance absent formal knowledge	
RQ4: Challenges (Item 4)	Resource and material scarcity	Challenges are supply, workload, and communication related
	Workload and staffing burden	
	Dissemination failure as root cause	
	Incidental integration masking absence of real challenge	
RQ4: Effectiveness of procedures (Item 5)	Absence of targeted professional development	Teachers seek clearer channels and targeted training
	Calls for improved communication and channeling	
	Self-assessed integration exceeding actual depth	

CONCLUSION AND RECOMMENDATIONS

Conclusions

Environmental education in current Senior High School ELT functions as a supplement to language instruction rather than an integrated subject of inquiry, and deeper integration is attributable to individual teachers rather than to the materials. Both sets of Reading and Writing materials fell short of the requirements of RA 9512 and DepEd Order No. 52, s. 2011, and all seven checklist factors were rated Significantly Weak, even though the materials showed sound pedagogical structure. Strengthening Eco-ELT materials therefore requires deliberate attention to environmental content and framing, since pedagogical competence alone does not close the gap. Finally, implementation gaps stem mainly from a lack of subject-specific targeting: dissemination and monitoring systems operate in general but do not reach or support English teachers specifically.

Recommendations

Develop Eco-ELT materials that incorporate accurate environmental concepts, local perspectives, and action-oriented tasks from the outset rather than as add-ons to language content, and may include environmental learning outcomes alongside linguistic objectives, using the checklist in this study as a selection and planning reference. In addition, create an English-specific disseminator, orient in regular cycles on RA 9512 and DepEd Order No. 52, and include the English Department in the monitoring process. Integrate Eco-ELT materials and basic understanding of policies into pre-service programs, and the schools can conduct training on how to integrate environmental education. Share the strategies at Learning Action Cell sessions and allow the students to participate in civic action and critical thinking exercises regarding the environment.

LIMITATIONS AND FUTURE RESEARCH

The findings are limited to the Senior High School Reading and Writing subject in selected schools of District 1, Taguig City. The materials analysis covers only two of five participating schools and rests on the remarks of a single curriculum development expert, and the interview themes draw on five department heads. The study did not include classroom observation, student outcomes, or experimental teaching, so inferences concern the materials as they exist and not how they work in practice. Future studies may replicate the design with more schools, subjects, and grade levels, refine the checklist, and pilot-test Eco-ELT materials to assess classroom effectiveness.

ETHICAL CONSIDERATIONS

Formal permission to access and analyze the ELT materials was obtained from the participating institutions, which were informed of the research purpose, procedures, and intended use of the findings. Participation was

voluntary, and institutions could withdraw permission at any time. The institutions' materials were handled with respect for institutional integrity and intellectual property, and reproduced copies were to be stored securely and disposed of after the necessary period. Findings were shared with the institutions before publication so they could correct or elaborate facts. Ethical approval was obtained from the Polytechnic University of the Philippines University Research Ethics Committee (PUP-UREC) through expedited review, under the requirements of the Philippine Health Research Ethics Board (UREC Code 2026-0421; approved 06 April 2026; valid until 05 April 2027).

Declaration on the Use of Artificial Intelligence

In line with Executive Order No. 46, s. 2024 of the Polytechnic University of the Philippines, generative AI tools were used to support data analysis, draft communications, organize study instruments, and search and cross-check literature. Natural language processing tools were used for minor language tasks such as grammar checking. The researchers reviewed, edited, and validated all outputs and are solely responsible for the final content, analysis, and findings.

Conflict of Interest

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the work reported in this paper.

DATA AVAILABILITY

The interview transcripts and the completed checklist remarks contain information from identifiable school personnel and institutions and are therefore not publicly available, to protect confidentiality and the terms under which access was granted. The Evaluation Checklist Sheet for Eco-ELT Instructional Materials and the interview guide are described in the Methodology section, and de-identified excerpts supporting the findings are presented in the Results and Discussion. Further data may be made available by the corresponding author upon reasonable request, subject to institutional consent.

REFERENCES

1. Aguilar, M. G. W., & Islam, H. (2023). Misconceptions towards Department of Education advisory: A challenge in the Philippine education system. *Educational Challenges, 28*(2), 7–21. https://doi.org/10.34142/2709-7986.2023.28.2.01
2. Ahmed, S. K., Mohammed, R. A., Nashwan, A. J., Ibrahim, R. H., Abdalla, A. Q., & Ameen, B. M. (2025). Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health, 6*, Article 100198. https://doi.org/10.1016/j.glmedi.2025.100198
3. Bercasio, R. R. O. (2022). Can we teach environmental education in English courses? *Randwick International of Education and Linguistics Science Journal, 3*(1), 20–36. https://doi.org/10.47175/rielsj.v3i1.402
4. Brown, C. A. (2024). Role of the English teaching hidden curriculum in sustainability education: The case of Japan. *Environmental Education Research, 30*(8), 1211–1230. https://doi.org/10.1080/13504622.2024.2309583
5. Busa, A. Y. B., & Tancontian, R. S. (2025). Learners' perceptions, beliefs, practices, and experiences in DepEd core values inculcation: Inputs for improvement. *International Journal of Research and Innovation in Social Science, 9*(3), 1365–1395. https://dx.doi.org/10.47772/IJRISS.2025.90300108
6. Cristovao, V. L. L., Sanches, B., & Smart, G. (2022). Environment discourse in Brazilian English-as-a-foreign-language textbooks: Socio-discursive practice and their implications for developing student's critical environment literacy. https://doi.org/10.1080/13504622.2021.2007855
7. Damoah, B., Khalo, X., & Adu, E. (2024). South African integrated environmental education curriculum trajectory. *International Journal of Educational Research, 125*, 102352. https://doi.org/10.1016/j.ijer.2024.102352

8. Department of Education National Capital Region. (n.d.). *Mandate, vision, mission, core values*. https://www.depedncr.com.ph/mandate-mission-vision-and-core-values/
9. Department of Education. (2009). Guidelines and processes for LRMDS assessment and evaluation (Version 1.0). https://lrmds.deped.gov.ph/docs/LRMDSGuidelines.pdf
10. Department of Education. (2011). *DepEd Order No. 52, s. 2011: Strengthening environmental education in public and private schools*. https://www.deped.gov.ph/2011/07/05/do-52-s-2011-strengthening-environmental-education-in-public-and-private-schools/
11. Duran, M. K., & Mariñas, K. A. (2024). Sustainability integration in Philippine higher education curricula: A structural equation modeling assessing teacher intention to integrate. *Sustainability, 16*(9), 3677. https://doi.org/10.3390/su16093677
12. Galorio, I. J., & Naling, C. (2024). Awareness and practices of senior high school students and teachers on environmental education: Basis for instructional materials development. https://doi.org/10.9734/ajee/2024/v23i4537
13. Garcia, B., & Bello, A. (2022). Policy development for environmental literacy: A policy brief. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4109060
14. Gatan, P. R. G., Yangco, R. T., & Monterola, S. L. C. (2021). Relationships among environmental literacy, locus of control, and future orientation of STEM students in the Philippines. https://doi.org/10.21601/ijese/10984
15. Gavilan Tatin, I., Ashadi, A., & Jacobs, G. (2025). Enhancing environmental education: An analysis of EFL elementary school coursebooks in Chile and Indonesia. https://doi.org/10.55593/ej.29114a3
16. Hameed, A. (2023). Environmental concerns and English language teaching in Saudi context: Perception and practices. https://doi.org/10.17507/jltr.1404.31
17. Husin, A., Helmi, H., Yanti, Nengsih, Y. K., & Rendana, M. (2025). Environmental education in schools: Sustainability and hope. *Discover Sustainability, 6*(1). https://doi.org/10.1007/s43621-025-00837-2
18. Ignacio, L. B., Cristobal, A. G., & David, P. C. (2022). Impact of policy implementation on education quality: A case study on Philippines' low ranking in international and local assessment programs. Far Eastern University. https://doi.org/10.63529/ajpe.v3i1.7663
19. Kazazoglu, S. (2025). Environmental education through eco-literacy: Integrating sustainability into English language teaching. *Sustainability, 17*(5), 2156. https://doi.org/10.3390/su17052156
20. Khan, A. (2021). The Philippine education core values paths through the senior high school English curricula. https://doi.org/10.52877/instabright.003.02.0068
21. Laaloua, H., & Tamer, Y. (2022). Promoting environmental education in Moroccan high school ELT textbooks. https://doi.org/10.36892/ijlls.v4i1.860
22. Lee, D. B., & Nguyen, T. H. (2024). The treatment of environmental literacy in the ELT textbooks in Vietnam. https://doi.org/10.1080/2331186x.2024.2425898
23. Liu, Y., An, L., & Chen, S. (2024). Environmental sustainability education in twelve series of Chinese university English language textbooks. https://doi.org/10.1177/21582440241266829
24. Malaluan, L. E., Espinosa, A. A., & Duad, V. D. (2022). Manifestations of environmental principles in bridging scientific context, reasoning and behaviour: Framework in the development of environmental education programmes in the Philippines. *Australian Journal of Environmental Education*, 1–14. https://doi.org/10.1017/aee.2022.49
25. Mirasol, J. M., Belderol-Necosia, B., Bicar, B. B., & Garcia, H. P. (2021). Statutory policy analysis on access to Philippine quality basic education. https://doi.org/10.1016/j.ijedro.2021.100093
26. Mondal, K., & Khalid, S. (2025). Integrating green ELT practices and the UN Sustainable Development Goals in English language teaching: Addressing climate anxiety and promoting social responsibility. *i-manager's Journal on English Language Teaching, 15*(2), 7–16. https://doi.org/10.26634/jelt.15.2.21460
27. National Economic and Development Authority (n.d.) AmBisyon Natin. https://2040.depdev.gov.ph/
28. North American Association for Environmental Education. (2021). *Environmental education materials: Guidelines for excellence*. https://eepro.naaee.org/resource/environmental-education-materials-guidelines-excellence

29. Papi, M. D., & Haque, M. N. (2023). Teaching second language through green pedagogy in the context of Bangladesh: A methodological approach. *Performance: Journal of English Education and Literature, 2*(3), 291–302. https://doi.org/10.26858/performance.v2i3.51504
30. Republic Act No. 9512. (2008). An act to promote environmental awareness through environmental education and for other purposes. https://lawphil.net/statutes/repacts/ra2008/ra_9512_2008.html
31. Rudenko, E. (2023). Embedding sustainability into English environmental: A holistic approach. https://doi.org/10.1051/e3sconf/202337105017
32. Saiful, J. A. (2023). Eco-ELT for environmental research and praxis in ELT. *Journal on English as a Foreign Language, 13*(2), 373–398. https://doi.org/10.23971/jefl.v13i2.6335
33. Silvhiany, S., Kurniawan, D., & Safrina, S. (2023). Climate change awareness in ELT: Ethnography in connected learning and ecojustice pedagogy. https://doi.org/10.26418/jeltim.v5i2.63548
34. Soliman, A., & Marasigan, A. (2021). Evaluation of environmental education MELCs-based self-learning modules in asynchronous learning modality during the pandemic. https://doi.org/10.54476/iimrj251
35. Suwaed, H. (2022). Raising Libyan EFL undergraduate students' awareness about environmental issues through project-based learning. *Global Journal of Foreign Language Teaching, 12*(3), 112–123. https://doi.org/10.18844/gjflt.v12i3.6294
36. Tenny, S., Brannan, J. M., & Brannan, G. D. (2022, September 18). *Qualitative study*. StatPearls. https://www.ncbi.nlm.nih.gov/books/NBK470395/
37. Tero, K., & Lastierre, R. (2025). Teachers' difficulties in climate change education. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence, 2*(2), 123–138. https://doi.org/10.5281/zenodo.14841769
38. UNESCO. (2019). *Framework for the implementation of education for sustainable development (ESD) beyond 2019*. https://www.iau-hesd.net/sites/default/files/documents/unesco_esd2030_framework.pdf
39. United Nations. (2015). *The 17 sustainable development goals*. https://sdgs.un.org/goals
40. Verma, A., & Ara, V. (2025). Greening pedagogy: Ecopedagogical approaches to English language teaching. https://doi.org/10.37074/jalt.2025.8.S1.4
41. Villamin, P., Lopez, V., Thapa, D. K., & Cleary, M. (2024). A worked example of qualitative descriptive design: A step-by-step guide for novice and early career researchers. *Journal of Advanced Nursing*. https://doi.org/10.1111/jan.16481