

Integrating Ecolinguistic Themes in English for Specific Purposes Textbooks: A Qualitative Study in Indonesia Higher Education

Rini Ekayati¹, Imelda Darmayanti Manurung², Elvita Yenni³

^{1,2,3}Universitas Muhammadiyah Sumatera Utara, Medan, Indonesia

Article Info

Article history:

Received 2026-05-05

Revised 2026-07-28

Accepted 2026-09-11

Keywords:

Ecolinguistics

ESP Textbooks

Environmental Awareness

Sustainable Education

Content Analysis

Indonesia Higher Education

ABSTRACT

This study aims to examine the presence, depth, and pedagogical implementation of ecolinguistic content in ESP textbooks at Universitas Muhammadiyah Sumatera Utara, and to explore how lecturers and students perceive this integration. The study is grounded in Stibbe's ecolinguistic framework and draws on a qualitative case-study design. Using qualitative content analysis and thematic analysis of interview data from four ESP textbooks, four lecturers, and four students as informants, the study finds that environmental topics are present but limited in scope and largely confined to isolated units. The integration remains predominantly superficial and informative, with minimal reflective or transformative tasks that promote critical ecological reasoning or interdisciplinary engagement. Environmental discourse is not systematically embedded across language skills nor operationalized into communicative practices that foster sustainability awareness. Interview findings reveal varying levels of awareness and highlight institutional and material constraints affecting implementation. Overall, this confirms that ecolinguistic integration across the four textbooks remains shallow and disconnected from learners' disciplinary needs. The study highlights the importance of pedagogical depth as a key criterion for evaluating ecolinguistic integration and underscores the need for structurally embedded, discipline-sensitive sustainability frameworks in ESP material development.

This is an open-access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Rini Ekayati

Faculty of Teacher Training and Education, English Education Study Program, Universitas

Muhammadiyah Sumatera Utara

Email: riniyekayati@umsu.ac.id

1. INTRODUCTION

Environmental issues have increasingly attracted scholarly and educational attention, prompting interdisciplinary approaches that promote ecological consciousness and sustainable practices. A growing body of research has examined attitudes, effectiveness, and links to other variables such as sustainability, which have been shown to have a moderate

impact on students' environmental care [1], [2], [3]. Moreover, climate change, biodiversity loss, pollution, deforestation, and the overexploitation of natural resources continue to intensify, further compounding this already pressing problem [4], [5]. In ELT, sustainability themes are introduced through approaches such as Eco-ELT, Content and Language Integrated Learning (CLIL), and the use of authentic texts. These approaches enable language learning to develop side by side with students' awareness of environmental issues, even though practical constraints, such as limited resources and ongoing environmental pressures, often remain part of the educational context [6], [7]. Including environmental education in language instruction not only strengthens communicative competence but also brings ecological awareness and responsibility to global citizenship [4], [6]. Such collaboration can enhance learners' awareness of environmental concerns and encourage active participation in responding to ecological issues within their social contexts, evoking emotional connections for deeper engagement with environmental issues in contexts like Indonesia's challenges [8], [9]. Within this broader agenda, English for Specific Purposes (ESP) instruction in Indonesian higher education is a particularly relevant site for examining how environmental concerns are integrated into discipline-specific language materials, since ESP textbooks are designed to serve students' professional and academic needs across diverse fields.

Environmental themes have been introduced into language teaching in various national contexts. This is part of the overall tendency to integrate ecological concerns into the formal curricula of English as a Foreign Language (ELT) with the specification of ontological categories such as textbooks and techniques. This is also an opportunity to include ecological themes in the Indonesian curriculum to foster sustainability awareness [10], [11], [12]. With the increasing magnitude of environmental problems, there is a need to use multidisciplinary techniques to increase awareness and encourage sustainable habits. In this context, the relationship between language and the environment has attracted academic attention through the discipline of ecolinguistics, which studies the relationship between language, society, and ecological systems [13], [14]. Ecolinguistics explores the role of language in shaping human perceptions of Nature and the ideological support or challenge of exploitative ideologies, especially [4], [15], [16]. It is a branch of applied linguistics that offers a framework for integrating environmental awareness into teaching materials by studying narratives, metaphors, and discursive patterns that shape environmental attitudes. This scenario is pertinent for ESP textbooks aiming to enhance communicative ability, as well as to transmit ideological and disciplinary viewpoints [16], [17].

As a result of growing worldwide environmental issues, language education has been considered as a venue for developing ecological consciousness and sustainability-oriented thinking. Within this wider educational responsibility, ESP textbooks are not just tools for language learning, but also a medium for communicating ideas, values, and ideological perspectives [18], [19]. The representation of environmental issues in instructional materials carries significant ideological implications that promote environmental literacy. Since language constructs reality through discursive framing rather than reflecting it, hidden ideologies in representations drive behavioural shifts [4], [20]. Thus, integrating isolated

words connected to Nature is not sufficient to create significant ecolinguistic integration in ESP situations. A critical assessment of the narratives, metaphors, and discursive patterns is needed to understand how environmental issues are framed and normalised in the textbooks [21], [22]. Investigations of Indonesian EFL textbooks utilising Stibbe's (2015) framework show how environmental discourses through ideology, framing, and assessment influence learner views beyond isolated terms, whereas visual-verbal material encourages preservation ideologies [23], [24]. Materials that position Nature as something to be exploited can implicitly reproduce anthropocentric and unsustainable cosmologies.

In contrast, materials that emphasise interdependence and ecological balance can promote sustainability-oriented perspectives through conservation and sustainability that counter narratives of exploitation through positive, contextual language of responsibility [25], [26]. In the Indonesian higher education context, ESP textbooks are widely used across non-English disciplines. Thus, examining these discursive constructions becomes particularly important.

Despite considerable interest in ecolinguistics, its systematic integration into ESP textbooks remains limited and insufficiently examined, particularly within higher education contexts in Indonesia. At Universitas Muhammadiyah Sumatera Utara (UMSU), English instruction in non-English study programs is organized within the ESP framework where instructional materials are tailored to students' disciplinary needs [24], [27]. However, the current textbooks used in these programs do not yet systematically incorporate ecological perspectives or sustainability-oriented content. This contextual and practical gap constrains students' opportunities to develop their discipline-specific linguistic competence, as well as their environmental consciousness, even though both are essential for responding to global challenges [16], [25].

Integrating ecolinguistic issues into English for Specific Purposes (ESP) curricula supports the broader aims of sustainable education by fostering environmental awareness, critical thinking, and global citizenship [28], [29]. Ecolinguistics as a teaching framework is important for changing students' views about sustainability and encouraging the use of language with more ecological awareness [23], [24], [30]. In contrast, current textbook reviews indicate that ecological knowledge is conveyed in a superficial and anthropocentric manner, hindering meaningful engagement with important environmental challenges [31], [32]. This theoretical gap, therefore, needs to be explored further on how such integration can mirror the particular academic disciplines and environmental conditions of students [23], [24], since it is important to consider both lecturers' and students' viewpoints to build ESP tools that are educationally meaningful and relevant to their specific environment.

In this study, a qualitative research design was applied to investigate the incorporation of ecolinguistic topics in ESP textbooks at UMSU. This study is aimed at exploring (1) the extent of ecological themes in ESP textbooks, (2) how the text contributes to environmental awareness and sustainable behaviours, and (3) the lecturers' and students' views on the incorporation of ecolinguistic content in teaching materials. By achieving these aims, this work contributes to the development of applied linguistics by stressing the role of ecolinguistics in ESP material production. The findings provide an insight into rewriting and

creating ESP textbooks by integrating ecological principles more systematically to assist discipline-specific language development and sustainability-oriented instruction.

2. METHOD

This study employed a descriptive qualitative methodology based on case studies to investigate the presence, depth, and pedagogical integration of ecolinguistic themes in four English for Specific Purposes (ESP) textbooks used at Universitas Muhammadiyah Sumatera Utara (UMSU) during the 2024 academic year [33], [34]. The study had three objectives: to determine the distribution of environmental themes in ESP textbooks, to assess the extent to which these themes promote environmental awareness and sustainable practices, and to investigate lecturers' and students' perspectives on ecolinguistic integration. The data were drawn from four ESP textbooks currently used in non-English-medium programmes: English for Primary School, English for Elementary School, English for Social Welfare, and English for Law.

In addition, semi-structured interviews were conducted with eight participants, including four lecturers and four students, who were directly involved in teaching or studying with the four ESP textbooks under review during the 2024 academic year at UMSU. This criterion ensured that participants could speak directly to their first-hand experience with the textbook content rather than offering only general impressions. All participants were informed of the purpose of the study and gave their voluntary consent to be interviewed; their identities were anonymized in the reporting of findings (coded as T01–T04 for lecturers and S01–S04 for students) to protect confidentiality.

Document analysis was conducted by using qualitative content analysis procedures to identify environmental units, calculate their proportional distribution within each textbook, and categorize their depth of ecolinguistic integration. Each textbook was read comprehensively to identify units containing environmental themes. The number of units, page allocation, representation forms (e.g., dialogue, vocabulary list, reading passage, case example), and instructional tasks were recorded. A structured coding grid was developed based on Arran Stibbe's ecolinguistic framework and sustainability discourse. Environmental content was classified into four depth levels, namely Level 1 (Superficial), Level 2 (Informative), Level 3 (Reflective), and Level 4 (Transformative). Multimodal elements were analyzed using social semiotic principles derived from [33] by Gunther Kress and Theo van Leeuwen (2021). The extent of environmental content in the four textbooks was determined using frequency mapping and proportionate comparison [4], [30], [33]. Data were obtained using a semi-structured interview technique on awareness of ecolinguistic ideas, evaluation of the environmental content in textbooks, perceived challenges, opportunities, and suggestions for development. Interviews were recorded, transcribed, and coded using reflexive thematic analysis following methodical steps of familiarization, initial coding, theme development, and refinement. Themes were then organized into analytical categories reflecting awareness levels and implementation factors. Trustworthiness was ensured through methodological triangulation between document and interview data, peer debriefing, audit trail documentation, and cross-check coding procedures to enhance credibility and dependability.

3. RESULTS AND DISCUSSION

3.1 Result

This section presents the findings obtained from the document analysis of the four ESP textbooks and the thematic analysis of the interview data. The presentation begins with the distribution and depth of environmental themes found across the textbooks, followed by an assessment of how these themes promote environmental awareness and sustainable practices, and concludes with lecturers' and students' perceptions of ecolinguistic integration.

3.1.1 Results of The Presence of Ecological Themes

A comprehensive content analysis was performed on four English for Specific Purposes (ESP) textbooks used in various study programs at UMSU. Each textbook was analysed to ascertain units that emphasized environmental issues and the degree to which these topics were elaborated. The table below delineates the distribution of material focused on environmental themes:

Table 1. Distribution of Environmental Units in ESP Textbooks

Name of the Textbook	No. of Pages	No. of Unit	Unit Promoting Environmental Theme	
			Unit Title	No. of Pages
English for Primary School	55	14	Foods and Drinks	5
English for Elementary School	63	12	Finding Places	4
English for Social Welfare	61	14	Green Social Campaigns	4
English for Law	67	14	Environmental Justice	3

In proportional terms, the environmental unit accounts for only 5 of 55 pages (9.1%) in English for Primary School, 4 of 63 pages (6.3%) in English for Elementary School, 4 of 61 pages (6.6%) in English for Social Welfare, and 3 of 67 pages (4.5%) in English for Law, confirming that environmental content occupies a marginal portion of each textbook. The environmental issues in the four textbooks were studied with varying degrees of ecolinguistic depth. In English for Primary School, the section Foods and Drinks is only tangentially linked to environmental issues such as waste, hygiene and healthy eating through lists of vocabulary and brief descriptive paragraphs. There are no exercises that prompt pupils to focus on the impact of everyday habits on the environment. The English version of Finding Places for Elementary School also covers eco-friendly settings like parks descriptively, without any critical or contextual engagement, therefore missing opportunities for children to assess or apply these principles critically. Both units are defined in the ecolinguistic depth paradigm as Level 1-2, from shallow to just informative, without any transformational learning potential [25], [30].

The two vocational textbooks follow a similar format. English for Social Welfare's Green Social Campaigns section has a more explicit environmental focus relating to students' future roles in raising social and environmental awareness. However, it is also limited to reading passages and simple comprehension questions, with no activities to link students to real-world campaigns, and thus remains at Level 2 (Informative) and underutilizes its interdisciplinary potential. Meanwhile, English for Law's Environmental Justice unit covers legal basics such as pollution and environmental protection, but lacks

references to specific environmental laws and case studies, which leaves it inadequate for law students who require a more rigorous, professional engagement. This unit is graded Level 1 (Superficial) as it provides merely a quick summary of ecological legal concerns [25], [30].

Table 2. Content Analysis of Environmental Themes in ESP Textbooks

Textbook Title	Unit Title	Environmental Theme	Representation Form	Content Deep Level	Notes
English for Primary School	Foods and Drinks	Waste, cleanliness, healthy food	Vocabulary list, descriptive paragraph	Level 1–2 (Superficial/Informative)	No reflective tasks; not developed in the speaking or writing sections
English for Elementary School	Finding Places	Eco-friendly places	Dialogue, short paragraph	Level 2 (Informative)	General reference to clean places; lacks contextual or critical discussion
English for Social Welfare	Green Social Campaigns	Social campaigns on the environment	Reading passage, comprehension Q&A	Level 2 (Informative)	No link to students' social field or local ecological issues
English for Law	Environmental Justice	Pollution, law, environmental issues	Legal dialogue, short case example	Level 1 (Superficial)	No integration with real cases or legal policy discussion

The unit Foods and Drinks in English for Primary School presents environmental ideas in a limited and indirect way. Concepts such as waste, cleanliness, and healthful eating are contained in vocabulary lists and short descriptive paragraphs. These are serious issues for the ecosystem, yet the presentation is only basic knowledge, with no speaking or writing assignments to further the argument. Students are not encouraged to think about how their daily behaviors affect the environment. The material is thus described as Level 1 to Level 2 in the ecolinguistic depth framework, meaning it is shallow to informative and does not provide any opportunity for reflective or transformational learning [25], [30].

Finding Places, an elementary school textbook, talks about clean public spaces, like parks, and their eco-friendly ecosystems. The portrayal is largely descriptive nonetheless, with a short paragraph and a minor amount of argument. The material does not encourage children to ponder or discuss these locations in their communities and to use them for their benefit. The lack of contextual or critical appraisal indicates the importance of the problem to the environment, and it is still at Level 2 (Informative) and does not have a greater educational impact.

The unit Green Social Campaigns in the English for Social Welfare textbook has a clearer environmental emphasis that fits with the students' possible future responsibilities in raising awareness about social and environmental issues. Even though this is possible, the unit has a reading passage and some simple questions to check for understanding. No activities allow students to look at real-world environmental campaigns or develop their own ideas, which would have made the course more interesting and valuable for their careers. Because of this, the material is rated as Level 2 (Informative), which means it is not being used to its full potential across disciplines.

A closer examination of the unit's structure clarifies why it warrants a Level 2 rather than a Level 1 or Level 3 classification. The reading passage in Green Social Campaigns explicitly names environmental and social campaigning as its topic, which already distinguishes it from a merely incidental mention; this justifies a rating above Level 1. At the same time, the accompanying tasks consist solely of literal comprehension questions, that is, items that can be answered directly from the passage without requiring learners to evaluate, judge, or apply the content; no task asks students to design a campaign, critique an existing one, or connect the reading to a social welfare case from their own community. Because Level 3 (Reflective) requires learners to evaluate or relate content to their own experience, and Level 4 (Transformative) requires them to propose or enact a response, the absence of any such task keeps the unit at Level 2 despite its explicit thematic relevance. This pattern is consistent with the textbook's broader vocational orientation: English for Social Welfare introduces topic-specific vocabulary and scenarios relevant to future social work practice, but, in the environmental unit specifically, does not extend this vocational framing into task design, leaving a gap between the disciplinary relevance of the topic and the cognitive demand of the accompanying activities.

Finally, the English for Law and Environmental Justice unit addresses essential legal ideas including pollution and environmental protection. However, the content includes only a short legal debate and a short case example; it does not discuss Indonesian environmental rules and international environmental Law, and it does not connect to real legal policies or case studies. This makes the unit insufficient for law students who would appreciate a more serious and professionally oriented approach to the environmental legal material. Hence, this content is still at Level 1 (Superficial), merely providing a cursory overview of environmental law concerns.

A closer textual examination of the source module supports this classification. Environmental content in English for Law is not organized as a dedicated unit but appears only incidentally within the module's international law material (*Kegiatan Pembelajaran 4, The Position of International Law within Indonesia's Legal System*). The explanatory text on the development of international Law touches only briefly on environmental cooperation, saying bilateral negotiations on environmental matters have increasingly given way to multilateral processes, giving examples of environmental agreements and the Law of the Sea treaty. The following legal vocabulary has two terms of indirect ecological interest: *res communis*, territory that cannot be owned (e.g., the high seas, outer space), and *terra nullius*, uninhabited ground that can be occupied. Neither entry engages with contemporary environmental issues such as pollution, conservation, or sustainability; both are framed purely as territorial and jurisdictional categories. No reading passage, task, vocabulary list, or dialogue in the module is built around environmental themes, in contrast to the dialogue-based tasks used elsewhere in the module for topics such as criminal procedure or notarial practice. This confirms that environmental content in English for Law is best characterized as an incidental citation embedded in an international law unit rather than a discrete, task-supported environmental unit, reinforcing its classification at Level 1 (Superficial) and underscoring the gap between this module and the Environmental Justice unit reported in the textbook's structural overview.

3.1.2 Results on How the Textbooks Promote Environmental Awareness and Sustainable Practices

The content analysis of four ESP textbooks presented in this study shows that the introduction of environmental awareness and sustainable practices in ESP textbooks is mostly passive, superficial, and underdeveloped. Although each of the four textbooks has at least one unit on environmental topics, the design of these units does not actively engage students in developing ecological consciousness or applying sustainability principles in practical, reflective, or action-oriented ways.

Table 3. Evaluation of Environmental Awareness and Sustainable Practice Promotion in ESP Textbooks

Textbook Title	Unit Title	Environmental Theme	Promotion of Environmental Awareness	Promotion of Sustainable Practice	Remarks
English for Primary School	Foods and Drinks	Cleanliness, healthy food, waste	Implied through vocabulary; not explicit	Not addressed; no link to real practices or consequences	No critical thinking or task-based engagement
English for Elementary School	Finding Places	Eco-friendly public spaces	Brief mention of clean places; descriptive only	No action-oriented tasks or reflection on sustainability	Lacks discussion and contextual application
English for Social Welfare	Green Social Campaigns	Social responsibility and environmental action	Introduces concept of environmental campaigns	No follow-up project or real-world application	Missed opportunity for social engagement and student initiatives
English for Law	Environmental Justice	Pollution, environmental rights	Legal terms introduced with minimal context	No case study, debate, or law-based exploration	Does not connect to ecological Law with practice or advocacy

The unit Foods and Drinks in English for Primary School talks about how being clean and eating healthy are good habits. However, they are only presented through separate words and descriptive phrases, and there are no activities that allow students to think about how their behavior affects more significant environmental issues such as waste management, food sustainability, or public health issues related to hygiene. The lesson has no speaking, writing, or problem-solving assignments to let students think about how they might help keep the environment clean. Similarly, the English for Elementary School textbook's section Finding Places discusses eco-friendly places like clean parks and well-kept schools. The portrayal includes brief conversations and plain sentences. It does not go into how these locations help the environment or why they need to be conserved. Students do not have to see what is happening around them or do things that are good for the environment, like reporting pollution or asking for cleanliness in school.

In the textbook English for Social Welfare, there is a part entitled Green Social Campaigns that is most likely to promote sustainable behaviors in relation to the issue of social responsibility. However, the content ends in a reading passage and some easy questions to test understanding. There would be no interactive or project-based activities

where students would develop campaigns, engage in their communities, or think critically about how effectively current environmental movements are doing.

Lastly, the English for Law textbook has an Environmental Justice section that teaches words and phrases linked to protecting the environment and controlling pollution. However, students cannot use legal reasoning to solve real-world environmental problems since there are no case studies, discussions, or legal analyses. There is no assignment for students to examine environmental legislation, suggest legal remedies, or consider their own country's environmental rights and obligations.

3.1.3 Lecturers' and Students' Perceptions of Ecolinguistic Integration

Data about lecturers' and students' views of the incorporation of ecolinguistic themes in English for Specific Purposes (ESP) textbooks were gathered, focusing on the knowledge of ecolinguistic principles among lecturers and students, the content of the textbooks, and the problems and possibilities associated with implementation.

Table 4. Awareness of Ecolinguistic Concepts

Participants	Level of Awareness	Responds	Category
T01	Medium	"I understand it's about connecting language with environmental topics, but honestly, applying it to primary school English? I need more guidance on age-appropriate environmental content."	Professional Development Need
T02	High	"Ecolinguistics makes perfect sense for elementary education. Kids are naturally curious about Nature, and we can build their environmental awareness while they're learning English."	Conceptual Understanding
T03	Low	"I've heard the term but I'm struggling to see how environmental themes fit into legal English. Most law students focus on contracts, procedures, constitutional Law..."	Initial Exposure
T04	High	"Social welfare connects directly with environmental justice issues. Our students need to understand how environmental problems affect vulnerable communities."	Field-Specific Understanding
S01	Medium	"I think it means teaching kids about environment through English. That sounds great since children need to learn about protecting Nature early."	Practical Connection
S02	Medium	"Using English to talk about environmental issues with elementary kids makes sense. They're at the perfect age to develop environmental consciousness."	Educational Perspective
S03	Low	"Not really familiar with it. Most of our legal English focuses on court procedures and legal documents. Environmental Law is pretty specialized."	Limited Awareness
S04	High	"This is exactly what social welfare needs! Environmental issues directly impact the communities we'll be serving. Poor neighborhoods often face the worst pollution."	Field-Specific Interest

Data were gathered from eight participants, four lecturers (T01-T04) and four students (S01-S04) on their awareness and understanding of ecolinguistic integration in ESP. In terms of level of awareness, participants are either low, medium, or high in their awareness

of ecolinguistic ideas. Data from T02 and T04 are classified as high awareness, while T03 and S03 are classified as poor awareness. Based on the responses, participants provided direct quotations reflecting their understanding or perspective. These include comments on the relevance of ecolinguistics to their field, the appropriateness of the content for different learner levels, and their familiarity with the concept. Further, the table showed that the categories included professional development need, conceptual understanding, initial exposure, field-specific understanding, practical connection, educational perspective, limited awareness, and field-specific interest. The table provides a snapshot of participants' varied levels of understanding and how they relate ecolinguistic integration to their educational or disciplinary context.

Data related to the textbook contents indicated an evaluation of the environmental content, along with suggestions for improvement.

Table 5. Perception of ESP Textbook Content

Participants	Textbook Evaluation	Environmental Content	Suggestion for Improvement
T01	Adequate	Limited	"We need simple stories about animals, recycling, and Nature that primary kids can understand. Maybe picture books about protecting the environment."
T02	Inadequate	Sufficient	"Elementary textbooks should have more content about saving water, planting trees, caring for animals - basic environmental concepts kids can relate to."
T03	Adequate	Absent	"Legal textbooks rarely touch environmental Law. We could include basic environmental regulations, pollution cases, maybe some international environmental agreements."
T04	Engaging	Moderate	"Social welfare texts do mention environmental justice, but we need more case studies about communities affected by pollution and climate change."
S01	Relevant	Insufficient	"We need more examples of how to teach kids about Nature and environment using simple English. Fun activities and songs would be great too."
S02	Boring	Sufficient	"Elementary English books need more engaging stories about environmental heroes, recycling adventures, maybe some interactive games about nature."
S03	Relevant	Absent	"Legal English should include more environmental law vocabulary - terms for pollution cases, environmental violations, green regulations."
S04	Engaging	Moderate	"The content about environmental justice is good, but we need more examples of how social workers can help communities facing environmental problems."

In the textbook evaluation, participants provided general judgments on the textbooks, which showed their overall quality or engagement level. Descriptions vary from "adequate" and "relevant" to "inadequate," "engaging," and "boring." Participants' views on how much environmental material is included in the textbooks were also examined regarding the environmental content. Some labelled it as "limited" or "absent," while others described it as "moderate," "sufficient," or "insufficient." While the evaluation and environmental content were stated, the following section included suggestions for improvement, which contained participants' direct input or quotes suggesting ways to improve the integration of

environmental topics in textbooks. These suggestions include adding picture books, environmental case studies, interactive stories, legal vocabulary, and real-life examples relevant to primary education, social welfare, and legal studies.

The next section of the data relates to the participants' experiences and views on integrating environmental themes in the ESP textbook. The data is categorized into three main points: identified challenges, perceived opportunities, and proposed solutions.

Table 6. Implementation Challenges and Opportunities

Participants	Identified Challenges	Perceived Opportunities	Proposed Solutions
T01	"Finding age-appropriate environmental content for young kids, limited teaching materials, keeping lessons simple but meaningful."	"Kids are naturally interested in animals and nature, builds early environmental consciousness, makes learning fun and relevant."	"Develop picture books with environmental themes, create simple songs and games, use storytelling approaches."
T02	"Balancing environmental content with basic English skills, finding engaging materials for elementary level, time constraints in curriculum."	"Elementary students love nature topics, great opportunity to build vocabulary through environmental themes, connects to their daily life."	"Interactive activities, nature-based projects, field trips, collaboration with science teachers."
T03	"Environmental law is complex and specialized, there are limited resources for legal environmental content, students are more interested in traditional areas of law."	"Environmental law is increasingly important in legal practice, opportunity to prepare students for emerging legal fields, global legal trends."	"Simplified case studies, basic environmental law vocabulary, guest lectures from environmental lawyers."
T04	"Links environmental issues to social welfare practice, provides examples of cases, academic rigor."	"High relevance of environmental justice for social work, prepares students for community advocacy, addresses actual social problems."	"Case studies of communities - Collaboration with environmental justice organizations - Field experience possibilities."
S01	"Learning how to explain complex environmental concepts to young children, creating age-appropriate activities, limited classroom management experience."	Teaching kids about environment feels meaningful, develops creative teaching skills, builds environmental awareness for next generation."	"Practice teaching sessions, mentor teacher guidance, child-friendly environmental activity development."
S02	"Making environmental topics interesting for elementary kids, finding the right vocabulary level, creating engaging activities."	"Kids love learning about animals and nature, great way to build basic English skills, prepares future environmentally conscious citizens."	"Story-based learning, educational games, visual aids, hands-on nature activities."
S03	"Environmental law vocabulary is challenging, limited exposure to environmental legal cases, complex regulatory language."	"Environmental law is becoming more important, good career opportunity, addresses current global issues."	"Case study analysis, legal dictionary development, internship opportunities with environmental law firms."
S04	"Understanding how environmental issues affect different communities, complex policy language, limited fieldwork experience."	"Directly relevant to social work practice, helps vulnerable populations, addresses social justice issues."	"Community engagement projects, policy analysis training, collaboration with environmental advocacy groups."

Lecturers identified several barriers in teaching environmental issues, including selecting age-appropriate materials for young learners (T01, T02), the lack of resources on legal environmental issues (T03), and the challenges of integrating environmental issues with social welfare education (T04). Meanwhile, students raised a series of practical challenges, such as explaining complex environmental concepts to young learners (S01, S02), managing specialized vocabulary and legal concepts in environmental Law (S03), and understanding policy and community issues in social work settings (S04).

Lecturers stated that environmental themes might help kids become more conscious of the environment (T01), improve their vocabulary and interest in school (T02), and keep up with changes in the legal and social domains (T03, T04). On the other hand, students thought environmental subjects were interesting and important since they were related to learning skills, language, and their future careers.

Lecturers suggested making picture books, engaging exercises, easier case studies, and working with individuals or organizations relevant to their educational situations. Students' ideas included using environmental themes in lessons, learning through stories, educational games, teaching practice, internships, community initiatives, and access to helpful mentors or field experiences.

Taken together, these interview findings can be synthesized into five recurring themes. Firstly, participants' conceptual awareness of ecolinguistics was restricted, with T02 and T04 displaying a clear understanding of the idea and T03 and S03 reporting very limited prior exposure to the topic, apart from basic environmental terminology. Second, the relevance of the textbooks was discipline-specific: faculty and students in elementary education and social welfare were more apt to connect environmental content to their future roles; those in legal education viewed environmental content as peripheral to core ESP instruction. Third, participants from different disciplines expressed the need for materials appropriate to their age and field, mentioning the shortage of resources designed for young learners (T01, T02, S01, S02) and the limited availability of legal-environmental resources (T03, S03). Fourth, there was a general demand for practical, project-based assignments, as seen in suggestions for picture books, simplified case studies, community-based initiatives, and field trips rather than passive reading or vocabulary drills. Fifth, participants pointed to institutional and curriculum constraints, including limited textbook space for elaboration and the absence of clearer institutional criteria for incorporating environmental content into ESP material design. These themes directly corroborate the textbook analysis in Section 3.1.1 and 3.1.2: participants did not merely confirm that the textbooks were superficial in the abstract, but identified the same gap, namely the absence of reflective and transformative tasks, as the central obstacle to more meaningful ecolinguistic integration, while also proposing discipline-specific directions for improvement that are addressed further in the discussion.

3.2. Discussion

The content analysis across four textbooks, English for Primary School, English for Elementary School, English for Social Welfare, and English for Law, demonstrated that only one unit in each textbook addresses an environmental topic. While thematically aligned, these units cover no more than 3 to 5 pages out of the full content, indicating a marginal

integration of ecolinguistic elements. Most of these units are at Level 1 (Superficial) to Level 2 (Informative) using the ecolinguistic content depth framework proposed by [4], revised by [30], with limited critical thought, contextual involvement, or interdisciplinary application.

English for Law introduces concepts such as “pollution” and “environmental justice”, but misses an opportunity for real-world application by failing to link them to national legal frameworks or international environmental policy. Similarly, English for Primary School includes brief mentions of waste and cleanliness, but does not provoke learners to explore the environmental implications of everyday actions.

Beyond describing the limited extent of environmental coverage, it is important to examine how Nature and environmental responsibility are discursively framed within these units, since ecolinguistic analysis is concerned not only with presence but with representation. The framing of environmental topics in the four textbooks tends to position Nature primarily as a backdrop for vocabulary acquisition (e.g., food, places, campaigns) rather than as an agent or stakeholder in its own right, which suggests an anthropocentric rather than ecocentric orientation: learners are invited to talk about the environment, but rarely to evaluate human responsibility toward it. Evaluative language that would assign positive or negative value to environmentally harmful or beneficial practices is largely absent. Where pollution or waste is mentioned, the texts tend to erase the actors responsible (e.g., “pollution is a problem” rather than identifying who pollutes and why), a pattern consistent with what Stibbe [4] terms erasure in environmental discourse. Salience, or the relative prominence given to environmental themes within the textbook as a whole, is also low, since environmental units are isolated rather than recurring across multiple sections. Few, if any, metaphors or narratives that could foster emotional or ethical engagement with environmental issues (the “stories we live by” that Stibbe [4] argues are central to ecolinguistic analysis) appear in the materials. These patterns, then, suggest that the textbooks reproduce a largely neutral-to-informative environmental discourse rather than actively promoting either anthropocentric exploitation narratives or ecocentric, sustainability-oriented ones; the absence of strong framing in either direction is itself a missed pedagogical opportunity.

This sparse and disjointed integration suggests a larger issue: environmental topics are not always included in all courses or linked to the development of language skills. They are therefore not thematic anchors for communication, inquiry, or interdisciplinary study. This finding is consistent with the findings of [6] and [34], which report that the majority of ESL/EFL materials still regard ecological problems as isolated issues rather than aspects of a wider totality that are essential in the real world.

3.2.1 Absence of Transformative and Reflective Learning Tasks

Although some textbooks cover environmental issues, none provide transformative learning experiences such as discussions, simulations, local issue exploration, or sustainability-based initiatives. According to the theoretical premises of [30], a transformative ecolinguistic pedagogy requires materials that are informational rather than provocative and inspire learners to act. The assessed textbooks do not include follow-up assignments that improve productive abilities (speaking and writing) around ecological

issues or that stimulate interdisciplinary debate. This is in line with earlier work highlighting that sustainable education for language learning should shift from lexical input to the building of ecological discourse and behavioral transformation [1], [6].

This study also highlights the growing body of literature that critiques language education for its limited engagement with global environmental challenges. Ecolinguistics has become a productive approach for investigating the influence of language on environmental beliefs [4], yet it remains underutilized in instructional materials. Based on these findings, this study suggests that ESP material development would benefit from a stronger ecological orientation, in which language instruction is paired more deliberately with awareness, empathy, and action-oriented thinking [16].

The results indicate the need to rethink textbook production. Textbook writers, curriculum developers, and teachers need to collaborate to design materials that include ecolinguistic themes across all disciplines, draw on information from other disciplines, and engage students through activities that address real-world environmental and social issues. This approach is consistent with the aims of the United Nations' Education for Sustainable Development framework [35] and prepares students to be critical thinkers who can work with people from all over the world.

3.2.2 Lecturers' and Student Perspectives: Awareness and Practical Barriers

The interviews with lecturers and students show varying degrees of awareness and preparedness to address ecolinguistic concerns. Some participants (especially those from social welfare and elementary education areas) showed good conceptual comprehension and found the link between environmental content and social responsibility (T02, T04, S04). Some, especially in the legal education context (T03, S03), mentioned a lack of exposure and considered environmental information to be beyond the scope of typical ESP teaching.

These results suggest a systemic problem in which awareness does not translate into practice due to lack of curricular and institutional support. Content reform, pedagogical innovation and professional development for educators are needed for ecolinguistic integration [5]. Such findings are in accordance with the assumption that discipline-specific adaptations are required for successful ecolinguistic integration [25] [24]. Lecturers wished for clearer criteria and for more relevant resources, either by age or field, while students noticed a need for more attractive and hands-on learning tools. Such perceptions reveal a gap between ecological consciousness and the availability of instructional tools to foster it, a gap that is also highlighted by [8] in their evaluation of ecolinguistic textbooks.

3.2.3 Opportunities for Material Development and Curriculum Innovation

The research also indicated real possibilities for including ecolinguistic issues, albeit with problems. Participants recommended valuable ideas such as nature-based projects, more understandable case studies of environmental legislation, and modules to engage people in their areas. These are consistent with [36], the need for transdisciplinary and contextualized curricular methods in sustainability education. They also argue that the design of ESP textbooks should not only focus on language skills but also on the United

Nations' Sustainable production Goals [35], notably in terms of increasing awareness about the environment and promoting critical citizenship.

Moreover, applying ecolinguistics as an analytical and pedagogical perspective offers a way to change classroom discourse, challenge detrimental environmental beliefs, and emphasize stories of sustainability and justice [4], [5]. Teacher training and collaborative textbook development across disciplines must be prioritized to implement this effectively.

To make this practical implication more concrete, discipline-sensitive material development could take the following forms. Primary and elementary education resources could include environmentally oriented songs, picture-based stories, and classroom recycling activities that integrate vocabulary development with hands-on ecological experience. Social welfare, environmental justice case studies, community advocacy tasks, and campaign-design activities could help students connect environmental topics to their future professional roles. For Law, resources could be expanded to include vocabulary for environmental regulation, simplified case analysis, mock debates, and policy-brief writing activities more akin to the professional needs of legal practice. Embedding such discipline-specific, task-based activities, rather than relying solely on descriptive vocabulary or reading passages, would move ESP textbooks beyond Level 1–2 integration toward the reflective and transformative levels identified in this study's coding framework.

This study has several limitations that should be acknowledged. First, the analysis was confined to four ESP textbooks used at a single institution, UMSU, which limits the generalizability of the findings to other institutions, disciplines, or educational levels. Second, the multimodal dimension of ecolinguistic analysis could not be fully developed, since the environmental units identified in the four textbooks contained minimal visual material; a study of textbooks with richer visual content might therefore yield additional insights into how images contribute to environmental framing. Third, the interview component, while offering valuable triangulation, involved a relatively small number of participants (four lecturers and four students), and their perceptions may not represent the full range of views held by other instructors and learners at UMSU or at other institutions.

4. CONCLUSION

This study set out to examine the presence, depth, and pedagogical implementation of ecolinguistic content in four ESP textbooks at UMSU, and to explore how lecturers and students perceive this integration, and found that, first, the extent of environmental themes in the four ESP textbooks is limited, with each textbook containing only a single environmental unit occupying no more than 4.5–9.1% of total pages. Second, the depth of integration remains predominantly at Level 1 (Superficial) to Level 2 (Informative), with an absence of reflective or transformative tasks, indicating that the textbooks promote environmental awareness and sustainable practice only minimally and without systematic connection to language skill development. Third, lecturers' and students' perceptions vary by discipline: participants in social welfare and elementary education showed stronger conceptual awareness and saw clearer relevance to their field, whereas those in legal education reported limited exposure and viewed environmental content as peripheral to core ESP instruction.

Theoretically, the study contributes to applied linguistics by demonstrating that Stibbe's depth-level framework can be productively applied to discipline-specific ESP materials, not only to general EFL textbooks, and by showing that perceived relevance of environmental themes is shaped as much by disciplinary framing as by textbook content itself. Practically and in terms of policy, the findings offer textbook developers and institutional stakeholders at UMSU a concrete basis for raising the depth of environmental content through targeted revision rather than wholesale replacement of existing materials.

This study is limited by examining a small sample of textbooks from a single institution, potentially failing to represent the broader landscape of ESP materials in Indonesia or other regional contexts. Furthermore, although qualitative insights from educators and learners enriched the analysis, a broader and more varied respondent pool could improve generalizability.

Beyond future research, the findings also point to immediate, practical steps for material development. Textbook writers and curriculum developers at UMSU could begin by expanding existing environmental units with discipline-specific and task-based activities. Moreover, there should be a further comparative analysis of ESP textbooks across various institutions, disciplines, and educational levels, utilizing quantitative measures to evaluate learner outcomes associated with ecolinguistic awareness. Further studies should investigate the development of ecolinguistic materials in collaboration with educators, textbook authors, and sustainability experts to ensure future ESP materials align with linguistic and ecological objectives.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the financial support provided by Universitas Muhammadiyah Sumatera Utara (UMSU) through the internal research grant under Decree Number 145/II.3-AU/UMSU-LP2M/C/2024. The authors also extend their appreciation to the lecturers and students who participated in this study and contributed valuable insights during the data collection process. Gratitude is further expressed to faculty colleagues for their academic support and constructive feedback throughout the research and manuscript development.

REFERENCES

- [1] C. Howlett, J. A. Ferreira, and J. Blomfield, "Teaching sustainable development in higher education: Building critical, reflective thinkers through an interdisciplinary approach," *International Journal of Sustainability in Higher Education*, vol. 17, no. 3, pp. 305–321, 2016, doi: 10.1108/IJSHE-07-2014-0102.
- [2] V. Kumar, S. K. Choudhary, and R. Singh, "Environmental socio-scientific issues as contexts in developing scientific literacy in science education: A systematic literature review," Jan. 01, 2024, *Elsevier Ltd.* doi: 10.1016/j.ssaho.2023.100765.
- [3] A. R. Masalimova, J. A. Krokshina, N. L. Sokolova, M. V. Melnik, O. S. Kutepova, and M. Duran, "Trends in environmental education: A systematic review," 2023, *Modestum LTD.* doi: 10.29333/ejmste/12952.
- [4] Arran. Stibbe, *ecolinguistics : language, ecology and the stories we live by*. Routledge, Taylor & Francis Group, 2015.
- [5] S. S. Kaushal *et al.*, "Freshwater salinization syndrome: from emerging global problem to managing risks," *Biogeochemistry*, vol. 154, no. 2, pp. 255–292, Jun. 2021, doi: 10.1007/s10533-021-00784-w.

- [6] S. V. Steffensen and A. Fill, "Ecolinguistics: The state of the art and future horizons," *Language Sciences*, vol. 41, pp. 6–25, Jan. 2014, doi: 10.1016/j.langsci.2013.08.003.
- [7] C. T. Dhanyamol and N. Sethunarayanan, "A systematic review on integrating environmental sustainability in English Language Teaching: strategies for Sustainable Development Goals," 2025, *Frontiers Media SA*. doi: 10.3389/feduc.2025.1636623.
- [8] M. Mliless and M. Larouz, "An ecolinguistic analysis of environment texts in Moroccan English language teaching textbooks," *IJRES*, vol. 5, pp. 103–116, 2018.
- [9] B. Nur and A. Lubis, "Multimodal-Based Approaches in Teaching Ecological Literacy: Enhancing Environmental Awareness through Textual and Visual Integration," 2025.
- [10] F. P. Gunawan, R. P. Rizal, and N. Nurkhamidah, "The Implementation of Green Eco-Literacy in English Language Learning: A Systematic Review," *Journal of Nusantara Education*, vol. 5, no. 1, pp. 61–73, Oct. 2025, doi: 10.57176/jn.v5i1.182.
- [11] Y. Pratiwi, K. Andayani, and B. Prastio, "Environmental Themes in BIPA Textbook: Ecolinguistics Perspective," 2021.
- [12] A. Rida and F. Rokhman, "Seloka: Jurnal Pendidikan Bahasa dan Sastra Indonesia The Ecolixicon Forms in Indonesian Language Textbooks: Ecolinguistic Studies at Adiwiyata School," 2021. [Online]. Available: <https://journal.unnes.ac.id/sju/index.php/seloka>
- [13] S. Agbeleoba, O. Orebe, G. Adekunle-Ojo, and O. Owolabi, "Ecolinguistic and Critical Discourse Analysis of Environmental Narratives in Sustainable Development Goal Communications," *International Journal of Language and Linguistics*, vol. 13, no. 5, pp. 195–202, Oct. 2025, doi: 10.11648/j.ijll.20251305.12.
- [14] W. Gul, W. Abadella, A. Elismary, and B. Riaz, "Ecolinguistics and Sustainability: Language as a Tool for Environmental Responsibility," *ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL Available Online*, vol. 04, no. 01, pp. 1776–1787, 2025, doi: 10.55966/assaj.2025.4.1.097.
- [15] B. Prastio, I. Nurzafira, A. S. Ibrahim, and G. Susanto, "Lexicon in Batik and Tapis Cloth of Lampung, Indonesia: Ecolinguistics Study," *KnE Social Sciences*, Mar. 2021, doi: 10.18502/kss.v5i3.8529.
- [16] H. Penz and A. Fill, "Ecolinguistics: History, today, and tomorrow," *Journal of World Languages*, vol. 8, no. 2, pp. 232–253, Aug. 2022, doi: 10.1515/jwl-2022-0008.
- [17] K. Hyland, "ENGLISH FOR SPECIFIC PURPOSES: WHAT IS IT AND WHERE IS IT TAKING US?," *ESP Today*, vol. 10, no. 2, pp. 202–220, Jun. 2022, doi: 10.18485/esptoday.2022.10.2.1.
- [18] F. Boulaid, "Jurnal Penelitian Pendidikan Bahasa dan Sastra Indonesia," vol. 10, pp. 131–145, 2024, doi: 10.22202/jg.v10i1.8062.
- [19] W. Sahayu, S. Triyono, and S. N. Fath, "Ecolinguistics Analysis of Environmental Content in English and German Language Textbooks," *Studies in English Language and Education*, vol. 12, no. 2, pp. 845–858, 2025, doi: 10.24815/siele.v12i2.41652.
- [20] A. Rahardjanto, T. Indria Pemana, and N. Lestari, "Learning Media for Environmental Education, What Can the Scopus Database Tell Us? A Review Al-Jahiz: Journal of Biology Education Research," *Journal of Biology Education Research*, vol. 6, no. 1, 2025, [Online]. Available: <https://e-journal.metrouniv.ac.id/index.php/Al-Jahiz/index>
- [21] M. Salah and E. M. Hamed, "Maha Salah ElDien Mohamed Hamed Environmental Discourse in EFL Textbooks in Egypt: A Critical Ecolinguistics Case Study," *Occasional Papers*, vol. 74, 2021.
- [22] M. Usama, "Mohammad Usama, Ph Language in India www.languageinindia.com," 2024. [Online]. Available: www.languageinindia.com
- [23] I. G. Astawa, "Exploring ecolinguistics: A new paradigm for tourism English learning," *Englisia : Journal of Language, Education, and Humanities*, vol. 12, no. 2, p. 116, May 2025, doi: 10.22373/ej.v12i2.27648.
- [24] P. Ginting, G. Algae, Y. Hasnah, M. Saragih, and A. Kharisma, "The Embodiment of Environmental Discourse in Language Learning: A Critical Ecolinguistic Study of EFL Textbooks in Indonesia," *Language Related Research*, vol. 15, no. 1, pp. 145–175, 2024, doi: 10.29252/LRR.15.1.6.
- [25] R. Alexander and A. Stibbe, "From the analysis of ecological discourse to the ecological analysis of discourse," *Language Sciences*, vol. 41, pp. 104–110, Jan. 2014, doi: 10.1016/j.langsci.2013.08.011.
- [26] F. Y. Seli, M. Manar, A. A. Hardono, and S. 'Aini, "A Critical Eco-perspective in English Textbook for Indonesian 12th Graders: A Case on Nationally Issued Textbook," *ETERNAL (English Teaching Journal)*, vol. 16, no. 1, pp. 169–186, Feb. 2025, doi: 10.26877/eternal.v16i1.1158.
- [27] R. Ekayati, I. D. Manurung, and E. Yenni, "NEED ANALYSIS OF ESP FOR NON-ENGLISH STUDY PROGRAM," *Language Literacy: Journal of Linguistics, Literature, and Language Teaching*, vol. 4, no. 2, pp. 322–332, Dec. 2020, doi: 10.30743/ll.v4i2.3152.
- [28] U. Brand and M. Wissen, "What kind of great transformation?: The imperial mode of living as a major obstacle to sustainability politics," *GAIA - Ecological Perspectives for Science and Society*, vol. 27, no. 3, pp. 287–292, 2018, doi: 10.14512/gaia.27.3.8.

- [29] A. , J. K. , & A. A. Faramarzi, "Ars Artium Editor-in-chief," *Ars Artium: An International Refereed Research Journal*, vol. 9, p. 7085, 2021, [Online]. Available: <http://waoar.org/become-a-member/>
 - [30] M. Cheng, "Theoretical framework for ecological discourse analysis: A summary of New Developments of Ecological Discourse Analysis," *Journal of World Languages*, vol. 8, no. 1, pp. 188–226, Apr. 2022, doi: 10.1515/jwl-2021-0030.
 - [31] I. Laelani Marda, M. T. Adi Andayani, I. Fitriani, P. Bahasa Inggris, U. Jember, and J. Timur, "IDEAS Journal of Language Teaching and Learning, Linguistics and Literature The Representation of Environmental Awareness in the Indonesian ELT Textbook for Senior High School Students," vol. 13, no. 1, pp. 1921–1936, 2025, doi: 10.24256/ideas.
 - [32] D. A. K. Putra, "Ecolinguistic study on environmental discourse in senior high school (MA/SMA) Indonesian textbook," *KEMBARA Journal of Scientific Language Literature and Teaching*, vol. 9, no. 1, pp. 124–134, Apr. 2023, doi: 10.22219/kembara.v9i1.22561.
 - [33] D. Ary, L. C. Jacobs, and Christine K. Sorensen, "Introduction to Research in Education," 2010.
 - [34] S. Elo, M. Kääriäinen, O. Kanste, T. Pölkki, K. Utriainen, and H. Kyngäs, "Qualitative Content Analysis: A Focus on Trustworthiness," *Sage Open*, vol. 4, no. 1, Jan. 2014, doi: 10.1177/2158244014522633.
 - [35] G. R. . Kress and Theo. Van Leeuwen, *Reading images : the grammar of visual design*. Routledge, 2021.
 - [36] M. Zahoor and F. Janjua, "Green contents in English language textbooks in Pakistan: An ecolinguistic and ecopedagogical appraisal. British Educational Research Journal, 46(2), 321–338. <https://doi.org/10.1002/berj.3579>," *Br. Educ. Res. J.*, vol. 46, pp. 321–338, 2020, doi: <https://doi.org/10.1002/berj.3579>.
 - [37] S. and C. O. (UNESCO). United Nations Educational, "Global education monitoring report 2020: Inclusion and education: All means all. 92310038.," 2020.
 - [38] C. Tasdemir and R. Gazo, "Integrating sustainability into higher education curriculum through a transdisciplinary perspective," *J. Clean. Prod.*, vol. 265, Aug. 2020, doi: 10.1016/j.jclepro.2020.121759.
-