



Eco-Linguistics for Sustainability Education: Raising Environmental Awareness through Language Teaching

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Abstract

The accelerating climate crisis has placed sustainability discourse at the forefront of global education, demanding integrative approaches that connect language, culture, and environmental ethics. This study explores the role of eco-linguistics in advancing sustainability education, emphasizing how language constructs, mediates, and transforms ecological understanding. Drawing on Critical Discourse Analysis (CDA) (Fairclough, 1997; Frow, 1985), the research analyzes authentic sustainability texts—including the *IPCC AR6 Synthesis Report*, the *Paris Agreement*, and *UNDP renewable energy policy documents*—to uncover how environmental narratives are linguistically and ideologically framed across three domains: climate policy, environmental governance, and renewable energy. The findings reveal that sustainability discourse employs lexical choices (e.g., *resilience, transition, justice*), metaphors (*climate emergency, energy transition*), and modal expressions (*shall, must, should*) to position ecological responsibility as both moral and scientific obligation. These linguistic patterns encode ideological values of cooperation, equity, and urgency, reflecting how institutional power and scientific authority shape public perceptions of environmental issues. Pedagogically, integrating these texts into English Language Teaching (ELT) enhances students' academic literacy, critical thinking, and ecological awareness by encouraging them to analyze, interpret, and reconstruct sustainability narratives. The study proposes Eco-Linguistics for Sustainability Education (ELSE) as an interdisciplinary framework that unites language learning, critical discourse awareness, and environmental ethics. By embedding sustainability-oriented discourse into language classrooms, educators can transform linguistic instruction into a form of environmental action—empowering students to become linguistically competent, critically aware, and ecologically responsible global citizens.

Keywords: eco-linguistics, sustainability education, climate policy, environmental governance, renewable energy, discourse analysis, pedagogy

Abstrak

Krisis iklim yang semakin meningkat menempatkan wacana keberlanjutan sebagai isu mendesak dalam pendidikan global. Penelitian ini bertujuan untuk menganalisis peran ekolinguistik dalam meningkatkan literasi keberlanjutan melalui pembelajaran bahasa Inggris. Metode yang digunakan adalah penelitian kualitatif dengan pendekatan Critical Discourse Analysis (CDA), yang diterapkan pada berbagai dokumen internasional mengenai kebijakan iklim, tata kelola lingkungan, dan energi terbarukan, termasuk laporan IPCC, Paris Agreement, dan laporan UNDP. Hasil penelitian menunjukkan bahwa pilihan leksikal, metafora, dan modalitas dalam teks-teks tersebut membentuk konstruksi ideologis tentang tanggung jawab ekologis, urgensi aksi iklim, serta keadilan lingkungan. Analisis juga mengungkap bahwa kekuatan bahasa berperan dalam membentuk cara pandang publik terkait isu lingkungan melalui representasi nilai, otoritas ilmiah, dan narasi kolaborasi global. Berdasarkan temuan tersebut, penelitian ini menyimpulkan bahwa integrasi wacana keberlanjutan dalam pembelajaran bahasa dapat meningkatkan literasi akademik, kemampuan berpikir kritis, dan kesadaran ekologis peserta didik. Kajian ini menawarkan kerangka Eco-Linguistics for Sustainability Education sebagai pendekatan pedagogis untuk menjembatani bahasa, ideologi, dan etika lingkungan dalam pendidikan.

Kata kunci: ekolinguistik, energi terbarukan, kebijakan iklim, keberlanjutan, tata kelola lingkungan

INTRODUCTION

Sustainability has emerged as a central concern in global discourse, shaping both international and national agendas such as the United Nations Sustainable Development Goals (SDGs) 2030 and Indonesia's vision for *Golden Indonesia 2045*. While most sustainability discussions focus on policy, technology, and governance, one crucial yet often overlooked dimension is language. Language not only reflects human values and worldviews but also shapes how societies perceive and interact with nature. This study argues that language possesses transformative power in fostering ecological consciousness through the lens of eco-linguistics, an interdisciplinary field that connects linguistic practices with environmental awareness. As conceptualized by Stibbe (2015), eco-linguistics explores how linguistic structures, metaphors, and narratives influence human perceptions of ecology—revealing that the way people talk about the environment determines how they act toward it.

Integrating eco-linguistics into language education provides a powerful pathway to cultivate both communicative competence and environmental ethics. Language classrooms can become spaces of ecological reflection, where students critically analyze environmental discourses, decode the ideological framing in media or advertisements, and construct alternative narratives that promote empathy and sustainability. In this framework, teachers act as agents of change—guiding learners to question unsustainable worldviews and to use language as a means of advocacy. Through eco-linguistic approaches, students learn that words are not neutral; they shape attitudes, behaviors, and social realities. Consequently, language education grounded in ecological values contributes directly to sustainability by nurturing critical awareness and a sense of responsibility toward the environment.

A review of previous studies reinforces this potential. (Nur et al., 2022) introduced the concept of environmentally-based language teaching and green pedagogy within ELT, framing the classroom as a site for environmental reflection. (Putra, 2023) demonstrated how an eco-linguistic analysis of Indonesian textbooks reveals limited but significant opportunities for environmental discourse in language teaching materials. (Astawa, 2025) emphasized integrating eco-linguistic strategies into English for tourism courses to foster environmental awareness and vocabulary use. (Novawan et al., 2022) provided a theoretical expansion of how eco-linguistics reframes language education as an ecological enterprise, positioning linguistic practice as part of sustainability-learning. (Asgher, 2021) offered empirical evidence that eco-linguistic methods in ESL teaching

improve teacher perceptions of environmental-education integration and potentially student outcomes. Despite these significant contributions, existing research remains largely situated in national contexts or limited domains, and few studies systematically explore eco-linguistics in multilingual, multicultural settings in developing countries, such as Indonesia.

Therefore, this research addresses that gap by proposing Eco-Linguistics for Sustainability Education as an innovative pedagogical framework that bridges language, ecology, and education. The study's novelty lies in its interdisciplinary synthesis—combining eco-linguistic theory (Kazazoglu, 2025), Critical Discourse Analysis (CDA) (Frow, 1985), and sustainability pedagogy (de la Fuente, 2021) to explore how language can construct, mediate, and promote environmental awareness. The author argues that addressing sustainability solely through technological or policy means is insufficient without linguistic consciousness that reshapes human-environment relationships. By embedding eco-linguistic principles into language education, this study aims to foster students' ecological literacy, critical thinking, and moral responsibility, ultimately contributing to Indonesia's vision of producing intellectually advanced and ecologically responsible citizens by 2045.

METHOD

This study employs a qualitative descriptive research design using Critical Discourse Analysis (CDA) as developed by (Fairclough, 1997) and (Frow, 1985). CDA is chosen because it enables the researcher to examine the relationship between linguistic features, discursive practices, and sustainability ideologies embedded in environmental texts. Through this qualitative approach, the study seeks to interpret how language functions as a tool for constructing, maintaining, or challenging ecological perspectives within the global sustainability discourse.

The type and source of data in this study consist of qualitative data derived from written texts relevant to the theme of environmental sustainability. The data sources are divided into three domains: (1) climate policy documents such as *IPCC Reports*, the *Paris Agreement*, and *COP Declarations*; (2) environmental governance texts including political speeches, NGO briefs, and news articles; and (3) renewable energy materials such as media coverage, energy policy documents, and public campaigns. These texts are selected to represent a variety of linguistic and ideological contexts in which sustainability is discussed and disseminated.

The data collection technique employed is purposive sampling, (Emmel, 2014), with the primary criterion being the relevance of the text to sustainability issues and its potential pedagogical use in language education. The researcher systematically selected documents that explicitly address ecological topics and demonstrate clear examples of discursive features suitable for CDA. Each text was reviewed to ensure its contribution to the study's objectives, particularly in exploring how sustainability narratives are linguistically and ideologically constructed.

The data analysis technique follows (Fairclough, 1997) three-dimensional model of CDA. The first stage, *textual analysis*, focuses on examining vocabulary, metaphors, and modality to identify ideological positioning within the text. The second stage, *discursive practice analysis*, investigates the processes of text production, distribution, and potential classroom application. The third stage, *social practice analysis*, interprets how linguistic and discursive patterns reflect broader ideological implications for sustainability values and environmental consciousness. This comprehensive analysis allows the researcher to connect micro-level linguistic choices with macro-level ecological ideologies.

To enhance the practical relevance of the research, the analyzed texts are integrated into English language teaching to foster eco-linguistic awareness among learners. The integration

involves designing classroom activities that combine linguistic and ecological reflection, including reading comprehension of climate reports and environmental news, writing argumentative essays on renewable energy, conducting speaking activities such as debates on environmental governance, and engaging in critical reflection on framing strategies and sustainability ideologies. This pedagogical adaptation highlights the potential of eco-linguistic discourse to enrich both language learning and environmental education.

To ensure the validity and reliability of the findings, the study employs data triangulation (Emmel, 2014) across multiple sources, including policy documents, media texts, and pedagogical materials. Peer debriefing (Given, 2012) is also conducted to verify analytical interpretations. Ethical considerations are strictly observed by maintaining transparency, respecting intellectual property rights, and ensuring accurate citation of all referenced materials. These steps uphold the study's academic credibility and research integrity.

RESULTS AND DISCUSSION

Building on the analytical framework outlined in the previous section, this part presents the findings derived from the application of Critical Discourse Analysis (CDA) (Frow, 1985) to the selected sustainability texts. The discussion integrates linguistic, ideological, and pedagogical dimensions to reveal how global sustainability discourses are constructed and how they can be transformed into meaningful learning resources. Through the combined examination of textual, discursive, and social practices, this section demonstrates the interplay between language, power, and education, showing how institutional climate narratives can foster critical environmental literacy in English language teaching.

Textual Analysis

This stage examines linguistic features such as vocabulary, metaphors, and modality in the selected sustainability texts. Lexical choices such as *resilience*, *transition*, *justice*, and *urgency* reveal how sustainability is framed as a collective moral and scientific responsibility. Metaphors like “*energy transition*” and “*climate emergency*” portray environmental action as a shared journey and urgent necessity. Modal verbs (*shall*, *must*, *should*) express obligation and authority, particularly in documents like the *Paris Agreement* (2015) (Delbeke et al., 2019). The *IPCC Report* (2023) (IPCC et al., 2023) employs epistemic modality (*likely*, *very likely*, *high confidence*) to construct scientific legitimacy. Together, these linguistic features expose the ideological construction of sustainability as moral responsibility, scientific necessity, and global cooperation.

Discursive Practice

This stage explores how texts are produced, distributed, and consumed, focusing on their recontextualization in educational settings. The production of these texts involves global institutions such as the IPCC, UNDP, and UNECE, which establish themselves as authoritative actors in sustainability discourse. Their distribution through media, policy platforms, and educational programs allows the texts to shape global understanding and awareness. In classroom application, these texts are repurposed as pedagogical materials to analyze vocabulary, argumentation, and sustainability perspectives. This process links global policy discourse with English language learning, enhancing critical awareness among students.

Social Practice

This stage interprets the ideological implications of the texts and how they contribute to sustaining or challenging power relations. The *Paris Agreement* constructs an ideology of shared but differentiated responsibility between developed and developing nations. UNDP's reports frame sustainability through human-centered development, emphasizing gender equity, energy justice, and poverty reduction. The *IPCC Report* reinforces a technocratic ideology, positioning scientific knowledge as a moral guide for global policy. These discourses normalize sustainability as a universal moral value and pedagogical goal, linking language, power, and ideology within a global framework.

Pedagogical Integration

The analyzed sustainability texts are mapped into pedagogical practices to integrate environmental themes into English Language Teaching. This integration supports learners in developing both linguistic proficiency and critical environmental literacy.

Table 1. Pedagogical Integration

Skill	Activity	Learning Focus
Reading	Analyzing excerpts from IPCC and UNDP reports	Understanding climate terminology and persuasive language
Writing	Composing argumentative essays on renewable energy	Using evidence-based arguments and modal verbs
Speaking	Debating environmental policies and governance	Practicing expressions of agreement and critical discussion
Critical Reflection	Examining ideological framing in climate texts	Recognizing bias, power, and sustainability ideologies

To ensure the credibility and reliability of findings, triangulation of diverse texts (policy, media, and pedagogy) is employed. Peer debriefing is conducted to validate interpretations and minimize researcher bias. Adherence to academic integrity and proper citation ethics is maintained throughout the process. Triangulation confirms the consistency of linguistic patterns across genres, peer review supports analytical reliability, and transparent referencing aligns with Fairclough's (Fairclough, 1997) principles of validity in Critical Discourse Analysis.

Discussion

This section presents the findings derived from the Critical Discourse Analysis (CDA) (Frow, 1985) of selected sustainability texts, including the *IPCC Sixth Assessment Synthesis Report (2023)* (IPCC et al., 2023), the *Paris Agreement (2015)* (Delbeke et al., 2019), the *UNDP Clean Cooking Report (2025)* (Brief, 2025), the *UNECE Renewable Energy Investment Report (2020)* (Triantafylllos et al., 2020), and the *UNDP Energy Access Evaluation (2023)*. The analysis reveals that sustainability discourse is linguistically constructed through evaluative vocabulary, modal expressions of obligation, and metaphors of transition, while ideologically shaped by

narratives of global cooperation, equity, and development. The pedagogical dimension demonstrates how these discourses can be recontextualized as learning materials to enhance English language proficiency and critical environmental literacy.

Climate Policy in Language Teaching

Climate policy texts, such as the *Paris Agreement* and *IPCC AR6 Report* (IPCC *et al.*, 2023), provide authentic materials that merge academic English with global awareness. The lexical patterns observed—*climate emergency*, *adaptation strategy*, *resilience framework*, and *mitigation pathway*—function as both conceptual and linguistic scaffolds for students.

Through reading and vocabulary-building exercises, learners encounter specialized terminology that strengthens academic literacy while fostering critical understanding of global environmental challenges. The frequent use of modality (*shall*, *should*, *must*) encodes obligation and moral urgency, positioning readers to perceive climate action as both a duty and a shared responsibility. In pedagogical application, such texts are suitable for reading comprehension, summarizing policy discourse, and exploring how scientific authority is conveyed through formal and persuasive language.

Environmental Governance as Classroom Discourse

Texts on environmental governance, such as political speeches, UN declarations, and NGO advocacy briefs, demonstrate how persuasive strategies construct legitimacy and moral appeal. Rhetorical devices—parallelism, repetition, and inclusive pronouns (*we*, *our*, *humanity*)—create solidarity and collective identity. For example, UNDP's *No Time to Waste* (2025) employs moral metaphors of urgency ("the future of over two billion lives depends on the boldness of our actions") to engage readers emotionally and ethically.

When brought into the classroom, such discourse becomes a resource for critical speaking and argumentation practice. Students analyze tone, stance, and persuasive devices before participating in debates on policy issues like environmental justice or climate finance. This activity enhances fluency, public speaking confidence, and critical awareness of how political language shapes opinion and policy alignment.

Renewable Energy and Vocabulary Expansion

The renewable energy corpus—including the *UNECE Renewable Energy Report* (2020) and *UNDP Energy Access Evaluation* (2023)—expands learners' technical vocabulary within a meaningful sustainability context. Terms like *solar photovoltaic*, *energy transition*, *geothermal potential*, and *decarbonization strategy* introduce scientific precision and real-world relevance. From a linguistic perspective, the framing of *clean energy* versus *fossil fuels* illustrates discursive contrast and ideological polarization in media and policy communication. These opposing narratives can be used in writing tasks that train students to construct balanced arguments, evaluate evidence, and identify persuasive bias. Through CDA-informed writing exercises, learners examine how lexical framing reflects broader ideological agendas—such as modernization, equity, or environmental justice—while developing the ability to express nuanced opinions in English.

Interconnectedness

The CDA findings reveal the interconnectedness of climate discourse across policy, governance, and energy contexts, demonstrating that each domain reinforces a shared ideological framework.

1. Climate Policy sets the direction by defining global goals and ethical imperatives.
2. Environmental Governance enables participation, negotiation, and accountability among nations and stakeholders.
3. Renewable Energy offers practical solutions to achieve sustainability through technology and innovation.
4. Language binds them together, transforming institutional texts into pedagogical instruments that cultivate critical literacy and environmental consciousness.

This interconnectedness underscores the power of discourse not only to describe but also to shape social realities. When integrated into English Language Teaching, sustainability texts function as multimodal tools that bridge global citizenship education with linguistic development. They empower learners to engage critically with authentic materials, question ideological framings, and articulate informed perspectives on environmental issues in academic English.

Overall, the findings demonstrate that sustainability discourse operates on three interrelated levels:

1. Linguistic Construction — where specialized vocabulary and modality encode authority and urgency.
2. Ideological Representation — where global institutions legitimize sustainability as a moral and developmental imperative.
3. Pedagogical Transformation — where these discourses become resources for teaching critical thinking, language skills, and environmental awareness.

Through this integrated CDA framework, the study affirms that analyzing and teaching sustainability texts together fosters both communicative competence and critical consciousness among learners.

CONCLUSION AND SUGGESTIONS

This study demonstrates that sustainability is not only a political or technological issue but also a profoundly linguistic and ideological construct. Through Critical Discourse Analysis (CDA) of climate policies, political speeches, and renewable energy campaigns, the research reveals that sustainability discourses are ideologically framed—reflecting power relations, cultural assumptions, and values embedded in language. Lexical and metaphorical choices such as *resilience*, *transition*, and *climate justice* do not merely describe ecological realities; they actively shape how societies imagine and respond to environmental challenges. Thus, language becomes both a mirror and a motor of sustainability, simultaneously reflecting and constructing the moral and social imperatives of our time.

At the discursive level, institutions such as the IPCC, UNDP, and UNECE emerge as dominant voices that define the global sustainability narrative. Their discourse carries scientific authority and moral legitimacy, influencing how policies are designed, how the public interprets environmental issues, and how education systems frame ecological responsibility. When these texts are introduced into language classrooms, they offer learners authentic opportunities to analyze, question, and reconstruct environmental narratives. Through this recontextualization, eco-linguistics provides educators with powerful analytical and pedagogical tools to decode and reshape sustainability discourse—bridging global issues with local learning contexts.

Pedagogically, the study proposes *Eco-Linguistics for Sustainability Education* as a transformative model that integrates language learning, critical thinking, and environmental ethics. This framework positions teachers and learners as advocates who use language not merely to communicate but to intervene in unsustainable discourses and to promote alternative ways of thinking about human–nature relationships. Classroom activities especially grounded in this model encourage students to interpret environmental texts critically, identify ideological framings, and construct new narratives that promote ecological care, justice, and shared responsibility.

Ultimately, the findings affirm that language education can and should function as an advocacy platform for sustainability. By fostering eco-linguistic awareness, classrooms become spaces of empowerment—where students enrich and develop not only linguistic competence but also the courage to speak ethically contextually, to challenge unsustainable ideologies, and to envision more equitable futures. In this way, language teaching evolves into a form of environmental action: shaping minds, transforming values, and cultivating a generation of eco-conscious global citizens which the students are the part of it. The study concludes that true sustainability begins with linguistic consciousness—because how we speak about the world determines how we choose to live within it.

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