

Development and Preliminary Validation of an Eco-English Language Teaching Model for Critical Thinking in Islamic Higher Education

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Abstract

English Language Teaching (ELT) in Islamic Higher Education has increasingly been expected to promote not only language proficiency alongside environmental awareness and social responsibility. However, existing ELT practices predominantly emphasize linguistic competence with limited integration of ecological perspectives into instructional design. This study aimed to develop and validate an Eco-English Language Teaching (Eco-ELT) model for undergraduate students in an Islamic university. The study employed a Research and Development (R&D) design using the ADDIE model, comprising the stages of Analysis, Design, Development, Implementation, and Evaluation. The research was conducted in the English Language Education Study Program at Universitas Islam Negeri Raden Mas Said Surakarta. Subjects consisted of four lecturers and 58 undergraduate students enrolled in English courses. The model was validated by an expert, including specialist in English language teaching, instructional design, and educational evaluation. Data were collected through classroom observations, semi-structured interviews, validation questionnaires, and implementation observations. Qualitative data were analyzed using thematic analysis, while quantitative validation data were analyzed using descriptive statistics to determine the feasibility and validity of the instructional model. The Eco-ELT model was developed based on Van Lier's ecological perspective. The implementation of the model indicated that the model achieved a highly feasible of expert validity and demonstrated positive classroom implementation, reflected in increased student engagement, greater ecological awareness, and improved critical thinking during learning activities. These findings suggest that the Eco-ELT model has the potential to support contextually relevant English language instruction that integrates sustainability education. The model may serve as a practical instructional framework for English language teaching in Islamic Higher Education, although further large-scale implementation is recommended to establish its broader effectiveness.

Keywords: Eco-English language teaching; Critical thinking skills; Environmental awareness; Islamic higher education

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INTRODUCTION

Ecological or environmental issues are ongoing issues that are of global concern, including in the domain of language teaching. Saiful (2023) writes that this makes ecological education a worldwide language teaching theme. English teaching can contribute to overcoming environmental problems by incorporating environmental teaching in English language learning based on several opinions and reasons. The benefit of teaching ecology or the environment in language education is to develop language learning and the character of students inside and outside school (Hauschild et al., 2012).

The responsibility of English language teaching to address global problems, including the environment, includes increasing ecological thinking and critical awareness among English language students as their language develops (Mercer et al., 2023; Xiong, 2014). According to (Bowden, 2010), ecology is an ongoing issue, and English language teaching has the potential and opportunity to address these issues in learning, such as climate change, pollution, deforestation, and others. By studying language in environmental discourse enable Eco linguists to understand how environmental narratives are constructed and to identify opportunities for transforming them in ways that encourage more sustainable behaviors (Gavilan Tatin et al., 2024). Proponents of this new language teaching and learning paradigm support an ecological methodology rooted in a broader and more comprehensive worldview. The social context and interaction patterns in which learners engage are central to understanding ecolinguistics learning (Van Lier, 2010).

Currently, research in the field of language teaching has developed better regarding the learning experience seen from a new perspective, one of which looks at aspects of ecological studies, with a focus on aspects such as the learning environment, quality, collaborative learning, interaction, and an emphasis on relationships rather than object (Van Lier, 2004). According to Van Lier (2010), the ecological perspective in education is an approach that focuses primarily on the quality of learning opportunities, classroom interactions, and educational experiences in general. A crucial pedagogical principle in the ecological approach is the creation of ecologically valid contexts, relationships, agency, motivation, and identity.

The incredible attention to ecological education has inspired linguists to conduct research in various parts of the world, teaching Indonesian, English, Chinese, and others. (Hameed, 2023) analyzed the perceptions and practices of English teachers in Saudi Arabia from the perspective of environmental education integrated into English language learning. These findings reveal a less-than-optimal response to English teachers' attitudes toward integrating environmental education into the curriculum. Novawan et al. (2022), in their research at universities in Indonesia (Jember), the Philippines, and the UK regarding an overview of Ecolinguistics and the prospects for future studies in this field, as well as possible implications for language teaching practices, including English as a Foreign Language . Zhang (2020) used ecological teaching theory to build a theoretical framework for online and face-to-face classroom Chinese language teaching. Ecological research for Indonesian language teaching was conducted by (Suwandi et al., 2017) about making folklore an internalization of ecological literacy values through fantasy-based Indonesian language learning for secondary students. Micalay-Hurtado & Poole (2022) in their research on ecological sustainability emphasize the compatibility between ecolinguistics and critical language awareness as well as the intersection between social, linguistics and environmental justice in a series of learning activities.

Teaching ecology or the environment can increase awareness of the environment. Students' awareness and critical thinking can have a positive impact on their lives to contribute to preventing ecological disasters. Putri (2018) stated that teaching ecology has become part of the institution's curriculum to prepare students to become global generation who contribute to the healthier lives and more environmentally aware society. Apart from teaching language skills, English teachers have a social duty to develop students' ecological awareness through environmental themes in learning materials. The social tasks of EFL teachers should be largely highlighted in relation to ecological themes (Al-Jamal & Al-Omari, 2014).

Van Lier's ecological perspective adds a new dimension by promoting a holistic, ethical, and culturally grounded view of environmental education. Eco-ELT or ecolinguistics frameworks has a great possibility to be taught in Islamic higher Education

universities because it includes religious teachings on stewardship, responsibility, and the unity of all living things, which can inspire stronger care for the environment (Rekan & Mokhtar, 2025; Zabidi et al., 2021; Shahida, 2023).

Environmental education has not been widely integrated into English language teaching in Islamic Higher Education. It is commonly offered as a subject only in disciplines closely related to environmental studies, such as Environmental Science and Biology, while English Language Education programs continue to emphasize linguistic competence with limited attention to ecological literacy and sustainability. Consequently, environmental themes are rarely embedded systematically into English language instruction. Lutfauziah et al. (2023) argue that environmental education remains a relatively new educational domain requiring curriculum innovation. Likewise, Mohamed (2014) explains that the development of Islamic schools and universities provides important opportunities for integrating Islamic environmental knowledge into formal education.

Despite growing interest in Eco-ELT and ecolinguistics, previous studies have primarily examined teachers' perceptions (Hameed, 2023), theoretical frameworks Zhang (2020), ecological literacy in first-language education (Suwandi et al., 2017), or the relationship between ecolinguistics and critical language awareness (Micalay-Hurtado & Poole, 2022). Few studies have developed and empirically validated an instructional model specifically designed for English Language Education students in Islamic Higher Education. Moreover, existing studies rarely integrate ecological language learning with Islamic environmental ethics within a comprehensive instructional framework. This gap indicates the need for an instructional model that not only develops English proficiency but also promotes ecological awareness and sustainability-oriented thinking through contexts that are relevant to Islamic higher education.

The novelty of this study lies in the development of an Eco-English Language Teaching (Eco-ELT) model that systematically integrates four complementary components. First, it adopts Van Lier's (2004, 2010) ecological perspective, emphasizing affordances, authentic interaction, learner agency, identity, and ecologically valid learning contexts. Second, it applies content-based English language instruction, in which ecological issues become meaningful contexts for developing English language skills. Third, it embeds critical-thinking activities that encourage students to analyze environmental problems, evaluate diverse perspectives, and propose sustainable solutions through English. Theoretically, this integration extends ecological language education by connecting sociocultural language learning, environmental literacy, and higher-order thinking within a single pedagogical model tailored to the context of Islamic Higher Education.

Accordingly, this study aims to develop and validate an Eco-English Language Teaching model for English Language Education students at Islamic Higher Education institutions. Specifically, the study addresses the following research questions:

How can an Eco-English Language Teaching model integrating Van Lier's ecological perspective, content-based instruction, and critical-thinking activities be systematically developed?

How does the preliminary implementation of the Eco-English Language Teaching model support English language learning and foster students' ecological awareness in Islamic higher education?

METHOD

Research Design

This study employed a Research and Development (R&D) design because its primary objective was not only to investigate an educational phenomenon but also to develop, validate, and conduct a preliminary implementation of an instructional product

in the form of an Eco-English Language Teaching (Eco-ELT) model for English Language Education students at an Islamic Higher Education institution. R&D is appropriate for studies aiming to design educational products through systematic development, expert validation, field testing, and continuous revision before wider implementation (Branch, 2009; Klein, 2009).

The instructional development process adopted the ADDIE instructional design model (Analyze, Design, Develop, Implement, and Evaluate) (Branch, 2009) because it provides a systematic framework for designing, revising, and evaluating instructional products. To construct the pedagogical structure of the model, each ADDIE stage was integrated with the instructional model proposed by Joyce, Weil, and Calhoun's (2015), which comprises four essential teaching components: (1) syntax, (2) social system, (3) principles of reaction, and (4) support system.

Research Participants

The study was conducted in the English Language Education Study Program at Universitas Islam Negeri Raden Mas Said Surakarta, Indonesia, during the even semester. The subjects were selected using purposive sampling because they were directly involved in English language teaching and curriculum implementation. They consisted of four English language lecturers, each having at least five years of teaching experience in English Language Education. The lecturers participated in the needs analysis interviews. Two intact second-semester classes of English Language Education students served as the pilot implementation group to identify weaknesses of the initial prototype (Class 2A = 27 students) and served as the preliminary implementation group after revision (Class 2B = 31 students). The students were approximately 18–20 years old and had completed introductory English language courses. The validator possessed doctoral qualification and had a minimum of ten years of academic or professional experience relevant to the respective fields in English language teaching, instructional design, and educational evaluation.

Data Collection

Interview and observation are applied to develop the learning model of ecological English language teaching model for the Islamic Higher Education lecturers and students of Universitas Islam Negeri Raden Mas Said Surakarta. Instruments used in this research are interview guideline and observation sheet. Semi-structured interviews were conducted with the four lecturers to identify instructional problems, students' learning needs, current teaching practices, and opportunities for integrating ecological perspectives into English language teaching. The interview guide consisted of (1) existing instructional practices, (2) ecological-content integration, (3) students' learning needs, and recommendation for Eco-ELT development. Classroom observations sheet included learning activities, student engagement, collaborative learning, ecological-content integration. The expert validation instrument evaluated the quality of the Eco-ELT model across 5 dimensions, namely (1) clarity of learning material orders, (2) suitability of learning activities and learning objectives, (3) suitability of learning activities and assignments, (4) suitability of assessments, and (5) practicality of teaching material.

Data Analysis

The data obtained in this study were analyzed using the interactive model of qualitative data analysis proposed by Miles, Huberman, and Saldaña (2014). This analytical model was selected because it provides a systematic procedure for interpreting complex qualitative data generated during the development of an educational model. The analysis process was conducted continuously throughout the five stages of the Eco-English Language Teaching (Eco-ELT) model development, involving three

interconnected activities: data condensation, data display, and conclusion drawing/verification. During the data condensation stage, the collected data from each development phase were selected, organized, categorized, and simplified based on their relevance to the development objectives of the Eco-ELT model. The data included findings from needs analysis, theoretical exploration, model design, expert validation, and implementation evaluation. This process aimed to identify essential components, learning principles, instructional strategies, and supporting elements required for developing an appropriate Eco-ELT model for students in Islamic Higher Education.

Furthermore, the condensed data were systematically displayed in the form of matrices, descriptive explanations, and development frameworks to facilitate interpretation and identify relationships among the findings. The displayed data were then analyzed comparatively and reflectively to determine the consistency between theoretical foundations, empirical findings, and validation results obtained during the model development process. The final stage involved drawing and verifying conclusions regarding the feasibility, relevance, and characteristics of the developed Eco-ELT model. Through this interactive analysis process, the research produced a comprehensive learning model that integrates English language learning with ecological awareness and Islamic educational values. The analysis results served as the foundation for refining the components of the Eco-ELT model, ensuring that the developed product was theoretically grounded, contextually appropriate, and applicable for students in Islamic Higher Education.

RESULTS AND DISCUSSION

Research Findings

The Development of Eco-English Language Teaching model integrating Van Lier's ecological perspective, content-based instruction, and critical-thinking

The development of the learning model is carried out in 5 stages of the ADDIE model (Analyze, Design, Develop, Implement and Evaluate) as a learning design system. Each stage has its function to develop the Eco-English Language Teaching (Eco-ELT) model for students in Islamic higher education.

Analyzing Stage

In the Analyze stage, a needs analysis was carried out through interviews with English lecturers to obtain information on whether the development of an ecology-based English learning model with Islamic content for English Language Education Study Program at UIN Raden Mas Said Surakarta was important and needed to be carried out by researchers. From the results of interviews with four English lecturers, it was found that there is a need for a learning model accompanied by learning materials that are specific to certain study programs.

Table 1. Results of interview

Real Performance	Expected Performance	Main Source
Students do not understand the content of the text	Students understand the content of the text	There is a lot of vocabulary that students do not understand and the text themes are less relevant to their knowledge.
Students are still not optimal in mastering the structure or grammar of English	Students have the ability to automate the use of English grammar	Students are not used to using English other than in learning and in class settings.
Students are not yet able to analyze and evaluate texts and express arguments	Students are able to analyze and evaluate texts based on the knowledge and data they	Students do not yet have the ability and courage to express opinions or arguments based on scientific analysis and evaluation.

optimally. have to state their
arguments.

Based on the interview results, the purpose statement is made. The purpose statement is that students are able to master English language skills in accordance with environmental science knowledge with Islamic content and are able to use correct English grammatical structures in listening, speaking, listening and writing skills. The main problem for students in learning English is the urgency of learning which can help them learn English with environmental science scientific content through systematic procedures. The expected performance is that students understand the content of the text, have the ability to use English structures well and correctly so that students are able to master English language skills in accordance with environmental science knowledge. Research has indicated that incorporating environmental stewardship into the English curriculum can be achieved by including themes such as conversation, sustainability, and empathy toward nature which are grounded in Islamic principles like *Rahmatan Lil Alamin* (compassion for all creations) (Abiddin et al., 2024; Rohmatulloh et al., 2023)

Designing Stage

The design stage represents the initial phase in developing the Eco-English Language Teaching (Eco-ELT) model for students in Islamic Higher Education. This stage was conducted based on the findings obtained from the Analyze stage, particularly the results of the needs analysis and theoretical studies related to English language learning, ecological awareness, and the characteristics of students in Islamic higher education contexts. The primary objective of this stage was to translate the identified needs and theoretical foundations into a systematic learning model design. Based on the purpose statements formulated during the Analyze stage, the design process began with the identification of learning tasks through an Inventory of Tasks and Performance Tasks. This process aimed to determine the types of learning activities, expected student performances, learning experiences, and competencies that should be developed through the implementation of the Eco-ELT model.

The development of the Eco-ELT model was designed by integrating English language learning objectives with ecological perspectives and Islamic educational values. The model emphasizes that language learning should not only focus on linguistic competence but also encourage students to develop awareness, responsibility, and ethical perspectives toward environmental issues. Therefore, the designed learning activities involve meaningful interactions with ecological themes, authentic environmental contexts, and communicative tasks that allow students to use English as a medium for expressing ideas, analyzing environmental problems, and proposing solutions. Through this approach, students are positioned not only as language learners but also as active agents who contribute to environmental sustainability within their social and cultural contexts.

The developed Eco-ELT model consists of several essential components, including procedures, social systems, principles of reaction, and support systems. The procedures component describes the sequence of lecturer and student activities designed to facilitate the implementation of Eco-English Language Teaching strategies. These procedures provide a structured pathway for integrating ecological content into English learning activities, beginning with environmental awareness activities, exploration of ecological issues, language development practices, collaborative discussions, and performance-based tasks. Through these procedures, students engage in learning experiences that connect language skills with real-world environmental challenges.

Developing Stage

The development stage is a comprehensive set of learning resources for English courses consisting of learning content (content), learning strategies, lesson plans, learning media, a set of lessons in each learning session, and independent activities that facilitate the construction of students' knowledge and skills in English courses. Regarding the development of environmentally-based language materials, English lecturers, as the materials developers, must be aware of the processes involved in selecting, evaluating and developing the textbook. Nur et al. (2022) stated that the process of selecting instructional materials necessitates that lecturers critically and align both content and pedagogical strategies with the learners' needs and expectations. This development also provides a comprehensive set of guidelines for English teachers during in-class sessions, a formative evaluation plan, and a summary of significant revisions made during the Development phase. These learning resources focus on closing the performance gap caused by the lack of knowledge and English language skills of English Language Education Study Program students.

The English language learning higher education students is content-based instruction. This learning selects topics which are relevant to the study program competency. The topics chosen are environmental conditions around Islamic communities (Islamic boarding schools, schools, universities), efforts to improve the environment, and environmental damage. Learning activities are carried out to master four English language skills, namely listening, speaking, listening, and writing. Activities can be done separately for each skill, or integrated with several language skills. The ecological-based English learning context includes the following layers in the activities.

The design of the new learning model is based on the ecological learning model and the teaching model of Joyce, Weil, and Calhoun (2015). The developed learning model with Islamic environments for students of higher education students has an ecological-based English learning context that includes layers in the learning concept. There are 4 layers in the learning foundation, namely Personal (Agency), Interaction, Situation, and Culture. The Personal (Agency) stage hopes that the foundation of learning for students is the development of a sense of belonging. In this stage, students learn the language along with a sense of ownership of English language learning and the learning material topics. The Interaction Stage builds relationships between students and awareness of environmental issues. At this level the lecturer directs learning activities towards learning tasks that are easy/simple, practical and firm without ignoring ecological values.

At the Situation stage, the learning procedures in the model developed train students to interact socially (with fellow students) and lecturers in providing opinions and arguments on environmental issues using the English language skills they have mastered. At this level, a lecturer needs to provide opportunities for students to engage in relevant discursive situations where they can live and act authentically as themselves while actualizing the English learned in expressing their opinions about environmental situations. Cultural Stage, the learning plan is related to discourse learning to foster the development of critical language regarding ecological issues related to Islamic teachings and the Islamic community. Overall, the process of learning English is seen as a learning activity that has a unique meaning that respects the diversity and variability that involves students in different environments. In this case, values are emphasized because the meaningful process of learning English is full of values throughout the ecological procedures. This is important because it questions everything considering the reality of systemic relationships and their impact on ecosystems and human well-being that are integrated in English language learning.

The developed Eco-English Language Teaching (Eco-ELT) model underwent an expert validation by a specialist in English language teaching and instructional design to

determine its content validity, instructional quality, and feasibility before classroom implementation. Expert validation is an essential stage in research and development because it ensures that the instructional product is theoretically sound, pedagogically appropriate, and practically applicable prior to field testing. The validation employed a four-point rating scale ranging from 1 (very poor), 2 (poor), 3 (good), to 4 (very good). The results are presented in Table 2.

Tabel 2. Teaching Model Validation

No	Sub-element	Score
1a	Clarity of learning goals and objectives	4
1b	Clarity of learning activities and assignments	4
1c	Clarity of assessments	3
2a	Suitability of learning goals and objectives	4
2b	Suitability of learning activities and assignments	4
2c	Suitability of assessments	3
3a	Practicality of teaching model	4

As shown in Table 2, the Eco-ELT model obtained an overall mean score of 3.71 out of 4.00, indicating that the model was judged to be highly feasible for classroom implementation. This result suggests that the model successfully fulfilled the essential characteristics of an effective instructional model, including clearly formulated learning objectives, coherent learning activities, and practical classroom procedures.

The highest ratings (4.00) were awarded to the clarity and suitability of the learning goals and objectives, clarity and suitability of learning activities and assignments, and the practicality of the teaching model. These findings indicate that the instructional components were logically organized and aligned with the intended learning outcomes. The expert considered the learning syntax to provide sufficient guidance for lecturers while allowing meaningful interaction among students, which is consistent with Van Lier's (2004, 2010) ecological perspective emphasizing authentic learning environments, learner agency, and collaborative interaction. The high practicality score further indicates that the model can be implemented within regular classroom settings without requiring excessive instructional resources or major curriculum modifications.

Based on these suggestions, several revisions were made to the assessment component. The assessment criteria were refined to better align with the instructional objectives, ecological learning activities, and critical-thinking tasks embedded in the Eco-ELT model. Additional analytic rubrics were also developed to provide more explicit performance indicators for language proficiency, ecological understanding, collaborative participation, and reflective thinking. These revisions strengthened the alignment among learning objectives, instructional activities, and assessment, thereby enhancing the overall instructional coherence of the model.

The teaching materials developed to support the Eco-English Language Teaching (Eco-ELT) model were also evaluated by an expert in English language teaching to determine their instructional quality, content suitability, and practical applicability. The results of the validation are presented in Table 3.

Table 3. Teaching Material Validation

No	Sub-element	Score
1a	Clarity of learning material orders	4
2a	Suitability of learning activities and learning objectives	4
2b	Suitability of learning activities and assignments	3
2c	Suitability of assessments	4
3a	Practicality of teaching material	4

As presented in Table 3, the teaching materials achieved an overall mean score of 3.80 out of 4.00, indicating that they were considered highly appropriate for classroom implementation during the pilot testing stage. This result demonstrates that the materials successfully met the expected standards for instructional quality and were regarded as suitable for supporting the implementation of the Eco-ELT model.

Several aspects received the highest rating (4.00), including the clarity of the learning material sequence, the alignment between learning activities and learning objectives, the suitability of the assessment tasks, and the practicality of the teaching materials. These findings suggest that the instructional content was systematically organized, enabling students to progress from introductory ecological concepts to more complex communicative and critical-thinking activities. The expert also considered the learning objectives, classroom activities, and assessment tasks to be well aligned, reflecting constructive alignment between intended learning outcomes, instructional strategies, and assessment practices. Furthermore, the high practicality score indicates that the materials are feasible for use within regular English language classrooms. A slightly lower score (3.00) was obtained for the suitability of learning activities and assignments. Although this rating remains within the good category, it indicates opportunities for refinement. The expert suggested that some classroom tasks could provide stronger guidance for integrating ecological issues with English language use and encourage more student-centered inquiry and collaborative problem-solving.

Based on these recommendations, revisions were made by refining task instructions, increasing the variety of communicative activities, and strengthening the integration of ecological themes, Islamic environments, and critical-thinking tasks. Additional reflective and collaborative learning activities were incorporated to encourage students to analyze environmental issues, express reasoned opinions in English, and propose sustainable solutions. These improvements enhanced the consistency between the instructional objectives and the learning experiences provided by the teaching materials.

Table 4 illustrates the integration of English language skills and language components within a single instructional session of the Eco-English Language Teaching (Eco-ELT) model. Rather than teaching language skills in isolation, the model adopts an integrated-skills approach in which ecological themes serve as meaningful contexts for language learning. This design enables students to develop English proficiency while simultaneously constructing ecological knowledge, reflecting on environmental issues, and engaging in authentic communication.

Table 4. Language skills and aspects of language learning for an Intended Session

No	Language Skills and Elements	Language Learning
1	Reading	The example of reading material was adapted from Tebuireng Islamic boarding school that focused on waste processing practices implemented at the boarding. The text was followed by several comprehension questions to assess students' understanding.
2	Listening and Speaking	The listening and speaking materials were designed around the same theme as the previous skill activities, namely waste management, to facilitate students' engagement with the learning materials.
3	Writing	The writing activity was placed at the end of the learning sequence, allowing students to apply the vocabulary and language components acquired through the preceding reading, listening, and speaking skills, including grammar, vocabulary, and spelling.
4	Grammar	The grammar focus activity was aimed to develop students'

		grammatical competent to support their listening, speaking, reading, and writing performance.
5	Vocabulary	The word power was aimed to familiarize students with the vocabulary related to the topic.

As shown in Table 4, the instructional sequence begins with reading, using an authentic text adapted from the environmental practices of Tebuireng Islamic Boarding School, particularly its waste management initiatives. The selection of an authentic local context was intended to increase students' engagement by presenting environmental issues that are relevant to their socio-cultural and religious backgrounds. Reading comprehension questions guided students to identify key information, interpret ideas, and reflect on ecological practices, thereby supporting both language comprehension and environmental literacy.

The listening and speaking activities were designed around the same environmental theme to reinforce language input while encouraging oral communication. Maintaining a consistent topic across different language skills provides opportunities for repeated exposure to key vocabulary and concepts, facilitating language acquisition through meaningful interaction. Students engaged in discussions, shared opinions, and responded to environmental issues presented in the listening materials, allowing them to practice communicative competence while developing awareness of sustainable practices. This progression also reflects Van Lier's ecological perspective by creating authentic learning opportunities in which interaction and learner participation become central components of language development.

The writing activity was positioned at the end of the instructional sequence to enable students to synthesize the linguistic knowledge acquired through the previous learning stages. After reading, listening, and discussing ecological issues, students produced written responses that required them to organize ideas, express opinions, and propose solutions to environmental problems using appropriate English. This sequencing demonstrates the pedagogical principle of scaffolding, whereby receptive language skills support productive language performance. Moreover, the writing tasks encouraged students to integrate ecological understanding with critical thinking, moving beyond language practice toward meaningful knowledge construction.

The inclusion of grammar focus reflects the model's commitment to balancing communicative language teaching with linguistic accuracy. Rather than teaching grammar as isolated rules, grammatical structures were contextualized within environmental topics encountered in the reading and listening texts. This contextualized approach enables students to understand how grammatical forms function in authentic communication while strengthening their ability to produce accurate spoken and written English related to ecological issues.

The preliminary implementation of the Eco-English Language Teaching model support English language learning and foster students' ecological awareness

Procedures are carried out for conducting a trial of an eco-English language teaching model with Islamic content for higher education students at UIN Raden Mas Said Surakarta.

Implementation

The students in the learning model pilot class were the English Education Study Program. It is possible to carry out several revisions to find suitability until the process and results are stable. At this stage researchers as the developers act as implementers. After the newly developed eco-English language teaching model has been tested, the model needs to be validated. Lecturers should follow the guidebook to apply the model.

If the lecturer experiences confusion in trying to understand the guidebook, the guidebook should be revised until it is clear to the teacher.

The materials used in learning are materials that are classified as Eco-English Language Teaching (Eco-ELT), namely teaching English by providing material in the form of authentic environmental texts. Authentic texts are taken from ecological issues in the Islamic education environment, namely: waste management at Al Izzah Islamic boarding school, waste processing at Tebu Ireng Islamic boarding school, organic waste processing at Al Imdad Islamic boarding school, application of circular economy in waste processing at Daarul Qur'an Islamic boarding school. In its implementation, texts taken from several sources are used as material for aspects of language skills, namely: reading, listening, speaking, and writing.

Following the development of the learning materials, the Eco-English Language Teaching (Eco-ELT) model was operationalized through a series of classroom activities designed to integrate English language learning with ecological issues. Different instructional methods were employed for each language skill and language component to accommodate their distinct learning objectives. Rather than relying on a single teaching strategy, the model combines group discussion, pair work, role play, jigsaw activities, and guided practice to create interactive learning experiences that promote communication, collaboration, and critical reflection on environmental issues. The selection of these methods was aligned with the learning outcomes of each instructional component and the principles of learner-centered pedagogy.

Table 5. The Task Activities of Eco-English Language Teaching

No	Language Skills and Elements	Tasks
1	Reading	Checking comprehension: Students answer questions from the text.
2	Listening and speaking	Students complete the tasks by following the instruction. 1. Pair work. Reading the dialogue with the partner 2. Reading the conversation and answer the questions.
3	Writing	Students write argumentative composition.
4	Grammar	Completing the sentence using an appropriate pronoun.
5	Vocabulary	Students with their background knowledge complete the tasks by thinking about the consequences of pollution using the words and phrases provided.

As presented in Table 5, the reading activities focused on checking students' comprehension of authentic ecological texts through guided comprehension questions. These tasks encouraged students not only to identify explicit information but also to interpret environmental messages and connect them with their own experiences. Using comprehension questions after reading enabled students to construct meaning collaboratively and provided opportunities to develop inferential reading skills while reinforcing ecological literacy. The listening and speaking component emphasized communicative interaction through pair work and dialogue-based activities. Students first practiced reading dialogues with their partners before answering comprehension questions and discussing the environmental issues presented in the conversations. These activities created authentic opportunities for oral communication and negotiation of meaning, allowing students to use English in meaningful social contexts rather than merely practicing isolated language forms.

Pair discussions also promoted collaborative learning and reflected Van Lier's ecological perspective, which views language learning as emerging through interaction between learners and their social environment. The writing activity required students to

produce an argumentative essay on environmental issues after completing the receptive language activities. Positioning writing at the end of the lesson allowed students to synthesize information obtained from reading, listening, and classroom discussions before constructing their own arguments. Through argumentative writing, students were encouraged to evaluate environmental problems critically, justify their viewpoints with supporting evidence, and propose sustainable solutions using appropriate English. This activity therefore integrated language production with higher-order thinking skills, consistent with the model's objective of fostering both English proficiency and ecological awareness.

The grammar component reinforced students' language accuracy by requiring them to complete sentences using appropriate pronouns within meaningful environmental contexts. Rather than presenting grammar as decontextualized rules, grammatical practice was embedded in ecological content so that students could observe how language structures function in authentic communication. This contextualized approach strengthened the connection between grammatical competence and communicative language use. Integrating vocabulary learning with problem-solving activities enabled students to acquire new lexical items while simultaneously developing conceptual understanding of environmental issues. Repeated exposure to ecological vocabulary across reading, listening, speaking, and writing activities also supported vocabulary retention and more confident language production.

Table 6. Summary of Observation Findings on the Implementation of the Eco-English Language Teaching (Eco-ELT) Model

Theme	Lecturers' Responses	Students' Responses
Ecological content	Ecological themes made English learning more contextual and meaningful because they were connected with authentic environmental issues especially in Islamic environments.	Environmental topics were interesting because they reflected real-life problems encountered in their communities and encouraged them to think about sustainable solutions.
Critical thinking	Students demonstrated greater ability to analyze environmental problems, justify opinions, and propose solutions during classroom discussions and writing tasks.	They learned to examine environmental issues from different perspectives before expressing arguments in English.
Student participation and interaction	Collaborative learning activities created a more interactive classroom and increased students' willingness to participate.	Students were more confident sharing ideas during pair work, group discussions, and role-play activities than in conventional English lessons.
Integration of language skills	Integration of reading, listening, speaking, writing, grammar, and vocabulary facilitates more coherent language learning.	Completing one language activity helped them perform better in subsequent activities, particularly argumentative writing.

The observation findings indicate that the Eco-English Language Teaching (Eco-ELT) model can be implemented positively during its preliminary implementation. Integrating ecological issues into English language instruction created a more meaningful and engaging learning experience. Authentic environmental topics encouraged students to connect language learning with real-world issues while simultaneously promoting environmental responsibility. Students similarly expressed that learning English through ecological themes increased their motivation because the materials reflected problems that they encounter in their daily lives.

Finding emerging from both lecturers and students was the model's contribution to the development of critical thinking. Students became more capable of analyzing

environmental problems, evaluating alternative viewpoints, and proposing solutions during classroom discussions and argumentative writing tasks. Likewise, students were encouraged to examine environmental issues critically before expressing their ideas in English. These findings indicate that the Eco-ELT model supports the development of higher-order thinking skills, particularly analysis, evaluation, and creation, which correspond to the upper levels of the revised Bloom's Taxonomy. This finding is consistent with Morgado et al. (as cited in Lutfauziah et al., 2023) who argue that contextual learning should consider learners' needs, institutional contexts, and meaningful instructional materials to promote deeper learning.

Evaluation

The preliminary implementation of the Eco-English Language Teaching (Eco-ELT) model was evaluated through classroom observations. The findings indicated that the Eco-ELT model could be implemented as intended and was positively received by both lecturers and students. Classroom observations showed that students actively participated in learning activities, particularly during collaborative tasks such as group discussions, jigsaw activities, pair work, and role plays. Observation data further revealed that the ecological themes and authentic learning materials increased students' interest in classroom interaction and made English learning more relevant to real-life contexts.

Challenges during preliminary implementation showed that several students initially experienced difficulty expressing ecological concepts in English and required additional vocabulary support. The unfamiliar environmental terminology occasionally limited their confidence during speaking and writing activities.

Discussion

In designing the learning model, the framework of English learning is content-based instruction. This learning selects topics related to the ecology in the field of boarding schools, campuses, and environment around students. Islamic environments are integrated so that the characteristics of English language learning in the Islamic Higher Education better show its existence. The integrated organization of language skills and language components demonstrates the pedagogical coherence of the Eco-ELT model. The learning sequence promotes a gradual progression from language input to language production while embedding ecological themes and Islamic environmental values within authentic communicative contexts.

In this context, Universities can be used to share knowledge about how ecology works because educational institutions continue to play an important role in the educational life of Muslims and it is more the responsibility of English language teachers to increase students' awareness of ecological themes by developing their language skills based on meaningful and communicative themes (Al-Jamal & Al-Omari, 2014; Nur, et al., 2022). Consequently, students are encouraged not only to improve their English proficiency but also to develop ecological awareness, critical thinking, and a sense of environmental responsibility. This integration represents one of the distinguishing features of the Eco-ELT model, as it connects language learning with sustainability education through coherent instructional design rather than treating environmental topics as supplementary classroom content.

Taken together, the implementation tasks demonstrate that the Eco-ELT model adopts an integrated and learner-centered approach to English language teaching. Each language skill and language component contributes to a coherent learning sequence in which students progressively move from comprehending ecological information to communicating ideas and constructing informed arguments in English. The variety of instructional methods, including collaborative discussion, pair interaction, guided

practice, and argumentative writing provides multiple opportunities for students to negotiate meaning, develop critical-thinking skills, and engage actively with authentic environmental issues. Consequently, the model supports not only the development of communicative competence but also the cultivation of ecological awareness and environmental responsibility, illustrating how language learning can meaningfully contribute to education for sustainable development within the context of Islamic higher education. The eco-English language teaching model uses learning methods and strategies for environmental teaching in ELT, such as the use of content-based language learning instructions and tasks that can improve language skills (Hauschild et al., 2012; Nkwetisama, 2011). This learning model can also increase environmental awareness (Manurung & Ria, 2018; Setyowati et al., 2022a), cultural and ecological identity (Matthewman, 2017), and critical thinking skills (Setyowati, et al., 2022a; Xiong, 2014). English language teaching has a social responsibility to improve students' ecological and critical thinking and English language skills.

The result of the conducted trial of Eco-English language teaching model to the students of English Language Education Study Program showed that they afforded positive response in understanding the provided Eco-English materials. Students were able to build arguments and to express their opinions to the texts which were relevant with their background knowledge. The result corroborates to (Amrullah et al., 2025) who found that integrating Islamic education with environmental programs can effectively enhance students' environmental awareness and character development. The finding also supports the finding of Irwansyah (2023) who noted that some noticeable characteristics in teaching English to young moslem learners in expanding circle country are costumes and learning place, topics, the use of Islamic phrases, and translanguaging. Although the study does not specifically refer to Eco- English learning based on Islamic values, the use of Islamic places and its correlation to the topics support the result of this study that English teaching should be adapted to the learners' needs.

The result of this study is also in accordance with Lutfauziah et al. (2023), they found that there are two stages in learning activities for environmental education at Islamic boarding school, namely: the stage of delivering material which explains the concept of environmental education and the stage of real practice which includes students' solving environmental problems. Further, they found that the materials of environmental education are based on Islamic values, such as: eco- education in an Islamic perspective, environmental ethics, eco-*pesantren* design, and environmental management based on Islamic values.

This learning model is useful for English Language Education students because it provides guidelines for lecturers and students to improve students' critical thinking. Morgado et al. in (Lutfauziah et al., 2023) stated that not only the real conditions that support contextual learning, but teachers also should consider students' need, institutional condition, and materials learning. Suwaed (2022) emphasized that integrating environmental issues into the EFL is crucial because the successful language learning depends on engaging, authentic materials that encourage learners to think critically and develop their English proficiency through real-world context. The need for 21st century learners is to have Higher Order Thinking Skills (HOTS) to solve problems in critical reading activities. Based on the revised Bloom's Taxonomy, the HOTS cognitive domain includes the ability to analyze, evaluate and create ideas.

The preliminary implementation of the developed Eco-English learning model shows that students are more active, especially in applying group methods, namely group discussions, jigsaws and role plays. Student activity in participating in learning increases, students' awareness and critical thinking towards ecological issues through environmental themes in learning materials has a positive impact. Asgher et al. (2021)

also found that participating in a discussion facilitates more effective for students. Further they emphasized that implementing group-based activities is considered one of the most effective strategies for teaching environmental education. In line with the study conducted by Rahimi, she found that there is a significance result of involving ecology and ecological factors in enhancing EFL specifically on speaking skill (Rahimi, 2023). She emphasized that the teacher's role in creating a supportive learning environment by using ecological was succeeded in fostering students' speaking skill.

Teaching English is not limited to literary works as listening, speaking, reading and writing material, but environmental issues as learning material (Yang, 2014). Students' awareness and critical thinking can have a positive impact on the development of students' ecological awareness through environmental themes in learning materials. In assessing students' ecological awareness, a project-based assessment can be used. Environmental awareness is assessed through a project-based learning approach, which evaluates students' critical thinking and collaboration skill within the context of environmental science project (Wibowo et al., 2024). In measuring the students' critical thinking could use essay test. It is used to analyze students' critical thinking skills, focusing on indicators such as focus, reasoning, conclusion, situation, clarity, and overall understanding. So, the social tasks of EFL teachers should be largely highlighted in relation to ecological themes (Al-Jamal and Al-Omari, 2014). In measuring students' language competence, performance-based assessment can be used. It focuses on real-life language tasks, offering a more authentic measure of students' ability to use language in practical contexts.

The evaluation demonstrated that integrating environmental issues into English language teaching provided meaningful contexts for language learning. Rather than relying solely on literary or general texts, the Eco-ELT model utilized authentic environmental topics that encouraged students to engage with current ecological issues while practicing English. This finding supports Yang (2014), who argues that environmental issues offer rich and authentic content for developing English language skills because they connect classroom learning with real-world experiences.

CONCLUSION

This study developed an Eco-English Language Teaching (Eco-ELT) model for English Language Education students in Islamic Higher Education through a Research and Development approach using the ADDIE instructional design framework. The needs analysis revealed that existing English language teaching primarily emphasized linguistic competence while providing limited opportunities to integrate ecological perspectives and Islamic environmental values into classroom instruction. These findings indicated the need for an instructional model that contextualizes English learning within authentic environmental issues relevant to students' academic and sociocultural contexts. Eco-ELT model is feasible, well accepted by lecturers and students, and appropriate for preliminary implementation in English Language Education programs within Islamic Higher Education. At the same time, large-scale studies employing validated outcome measures to determine the model's effectiveness is needed in improving English language performance, ecological awareness, and other targeted learning outcomes.

RECOMMENDATION

The developed eco- English learning model was tested on a limited scale, specifically in two classes at an Islamic higher education institution. To obtain more comprehensive results, further trials could be conducted at other Islamic universities.

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Portions of this manuscript were drafted, edited, or enhanced using ChatGPT (OpenAI). The authors utilized this tool to improve grammatical accuracy and clarity, as well as for paraphrasing. All AI-generated contents were thoroughly reviewed, edited, and validated by the authors, who assume full responsibility for the final content and the originality of the research.

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